96
Y4
Ap 6/1
H 81/2
981
pt. 6

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT—INDEPENDENT AGENCIES APPROPRIATIONS FOR 1981

DOCUMENTS

JUN 27 1980

FARRELL LIBRARY
KANSAS STATE UNIVERSITY

KSU LIBRARIES
A11900 457996

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON HUD—INDEPENDENT AGENCIES

EDWARD P. BOLAND, Massachusetts, *Chairman*

BOB TRAXLER, Michigan
LOUIS STOKES, Ohio
TOM BEVILL, Alabama
LINDY (MRS. HALE) BOGGS, Louisiana
MARTIN OLAV SABO, Minnesota
BENNETT M. STEWART, Illinois
LAWRENCE COUGHLIN, Pennsylvania
JOSEPH M. McDADE, Pennsylvania
C. W. BILL YOUNG, Florida

RICHARD N. MALOW, PAUL E. THOMSON, and DELACROIX DAVIS III, *Staff Assistants*

PART 6

	Page
Environmental Protection Agency	1
Council on Environmental Quality	1007
National Commission on Air Quality	1123

Printed for the use of the Committee on Appropriations

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT—INDEPENDENT AGENCIES APPROPRIATIONS FOR 1981

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON HUD—INDEPENDENT AGENCIES

EDWARD P. BOLAND, Massachusetts, *Chairman*

BOB TRAXLER, Michigan
LOUIS STOKES, Ohio
TOM BEVILL, Alabama
LINDY (MRS. HALE) BOGGS, Louisiana
MARTIN OLAV SABO, Minnesota
BENNETT M. STEWART, Illinois
LAWRENCE COUGHLIN, Pennsylvania
JOSEPH M. McDADE, Pennsylvania
C. W. BILL YOUNG, Florida

RICHARD N. MALOW, PAUL E. THOMSON, and DELACROIX DAVIS III, *Staff Assistants*

PART 6

	Page
Environmental Protection Agency	1
Council on Environmental Quality	1007
National Commission on Air Quality	1123

Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE

60-531 O WASHINGTON : 1980

COMMITTEE ON APPROPRIATIONS

JAMIE L. WHITTEN, Mississippi, *Chairman*

EDWARD P. BOLAND, Massachusetts
WILLIAM H. NATCHER, Kentucky
TOM STEED, Oklahoma
*JOHN M. SLACK, West Virginia
NEAL SMITH, Iowa
ROBERT N. GIAIMO, Connecticut
JOSEPH P. ADDABBO, New York
EDWARD J. PATTEN, New Jersey
CLARENCE D. LONG, Maryland
SIDNEY R. YATES, Illinois
DAVID R. OBEY, Wisconsin
EDWARD R. ROYBAL, California
LOUIS STOKES, Ohio
GUNN McKAY, Utah
TOM BEVILL, Alabama
BILL CHAPPELL, Florida
BILL D. BURLISON, Missouri
BILL ALEXANDER, Arkansas
JOHN P. MURTHA, Pennsylvania
BOB TRAXLER, Michigan
ROBERT B. DUNCAN, Oregon
JOSEPH D. EARLY, Massachusetts
CHARLES WILSON, Texas
LINDY (MRS. HALE) BOGGS, Louisiana
ADAM BENJAMIN, JR., Indiana
NORMAN D. DICKS, Washington
MATTHEW F. McHUGH, New York
BO GINN, Georgia
WILLIAM LEHMAN, Florida
JACK HIGHTOWER, Texas
JOHN W. JENRETTE, JR., South Carolina
MARTIN OLAV SABO, Minnesota
JULIAN C. DIXON, California
BENNETT M. STEWART, Illinois
VIC FAZIO, California

SILVIO O. CONTE, Massachusetts
ROBERT H. MICHEL, Illinois
JOSEPH M. McDADE, Pennsylvania
MARK ANDREWS, North Dakota
JACK EDWARDS, Alabama
ROBERT C. McEWEN, New York
JOHN T. MYERS, Indiana
J. KENNETH ROBINSON, Virginia
CLARENCE E. MILLER, Ohio
LAWRENCE COUGHLIN, Pennsylvania
C. W. BILL YOUNG, Florida
JACK F. KEMP, New York
RALPH S. REGULA, Ohio
CLAIR W. BURGENER, California
GEORGE M. O'BRIEN, Illinois
VIRGINIA SMITH, Nebraska
ELDON RUDD, Arizona
CARL D. PURSELL, Michigan

KEITH F. MAINLAND, *Clerk and Staff Director*

*DECEASED.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1981

TUESDAY, MARCH 4, 1980.

ENVIRONMENTAL PROTECTION AGENCY

WITNESSES

DOUGLAS M. COSTLE, ADMINISTRATOR
BARBARA BLUM, DEPUTY ADMINISTRATOR
WILLIAM DRAYTON, JR., ASSISTANT ADMINISTRATOR FOR PLANNING AND MANAGEMENT
JEFFREY G. MILLER, ACTING ASSISTANT ADMINISTRATOR FOR ENFORCEMENT
STEPHEN J. GAGE, ASSISTANT ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT
ECKHARDT C. BECK, ASSISTANT ADMINISTRATOR FOR WATER AND WASTE MANAGEMENT
DAVID G. HAWKINS, ASSISTANT ADMINISTRATOR FOR AIR, NOISE, AND RADIATION
STEVEN D. JELLINEK, ASSISTANT ADMINISTRATOR FOR PESTICIDES AND TOXIC SUBSTANCES
INEZ SMITH REID, INSPECTOR GENERAL
PAUL J. ELSTON, DEPUTY ASSISTANT ADMINISTRATOR FOR RESOURCES MANAGEMENT
EDWARD J. HANLEY, DEPUTY ASSISTANT ADMINISTRATOR FOR MANAGEMENT AND AGENCY SERVICES
JOHN C. CHAMBERLIN, ACTING DIRECTOR FOR BUDGET OPERATIONS DIVISION
HENRY L. LONGEST, DEPUTY ASSISTANT ADMINISTRATOR FOR WATER PROGRAM OPERATIONS

	1980 enacted	1980 current etimate	1981 request	Difference
Operating budget	$1,260,242,000	$1,286,551,000	$1,391,317,000	+$104,766,000
Construction grants	3,400,000,000	3,400,000,000	3,700,000,000	+300,000,000
Total	4,660,242,000	[1] 4,686,551,000	[2] 5,091,317,000	+404,766,000
Permanent Workyears	11,015	11,015	11,237	+222
Fulltime equivalency	13,587	13,587	13,830	+243

[1] Includes $12,000,000 pending program and $14,309,000 pending pay cost supplemental requests.
[2] Excludes $250,000,000 proposed for later transmittal for the oil and hazardous liability fund.

Mr. BOLAND. The Committee will come to order. We are delighted to have with us today the Environmental Protection Agency. I think all of you have been here before except Chris Beck, the new Assistant Administrator for Water and Waste Management and

Jeff Miller, the Acting Assistant Administrator for Enforcement. Mr. Beck you have had considerable experience up there in New York, haven't you?

Mr. BECK. That is correct.

Mr. BOLAND. We are glad to have you both here. We will put the biographical sketches of Mr. Beck and Mr. Miller in the record at this point.

[The biographical sketches follow:]

ECKHARDT C. BECK

Eckhardt C. (Chris) Beck is presently the U.S. Environmental Protection Agency's Assistant Administrator for the Office of Water and Waste Management.

The Assistant Administrator is responsible for all of EPA's programs involving water pollution control, drinking water standards, and solid and hazardous waste management.

Prior to his present assignment, he served as Region II Administrator. Region II consists of New Jersey, New York, Puerto Rico and the Virgin Islands. In that capacity he was directly responsible for all environmental programs established under the broad range of Federal legislation.

During that period, Mr. Beck was also a member of the Federal Regional Council and served for a term as its Chairman (August 1977 to January 1979) under appointment by President Carter. The Council consists of the major grant-making Departments within the Region, plus other members of the Federal establishment, as required.

In addition to his EPA duties while serving in Region II, Mr. Beck served as a Commissioner of the Tri-State Regional Planning Commission (New Jersey, New York and Connecticut) and was involved in international environmental activities as Working Group Chairman of the Water Management Committee and as a U.S. Delegate to the Environmental Committee, Organization for Economic Cooperation and Development.

Previous to his stewardship in Region II, he was Deputy Assistant Administrator for Water Planning and Standards at EPA headquarters in Washington, D.C. There he managed the Agency's effluent guidelines program, and helped develop several other EPA programs including the 208 areawide water quality management program, the dredge and fill program, and the toxic substances control program.

In the two years prior to joining EPA, Mr. Beck served as Deputy Commissioner of the Connecticut Department of Environmental Protection where he helped develop the first State Implementation Plan for air pollution control; one of the first State Resource Recovery Authorities, and an enforcement system for air pollution control; one of the first civil penalties which later was used as a model in preparing the U.S. Clean Air Act of 1977. He also established and directed the Connecticut Energy Agency and served as the Governor's chief advisor on energy policy.

Mr. Beck began his professional career in public service in 1969 as Air Pollution Control Officer with the City of Stamford, and has also served as Executive Vice President of York Research Company, an environmental consulting firm.

He is a graduate of Emerson College in Boston, where he was an Assistant Graduate Professor while working toward his masters degree in Communications in 1968–69. He received a Masters Degree in Public Administration in 1972 from New York University. He also attended Yale University's Graduate School of Epidemiology and Public Health. He holds a graduate certificate in Air Pollution Administration from the Graduate School of Public Administration, University of Southern California.

Mr. Beck, 36, is a native of Rockville Centre, New York, and now resides in Holmdel, New Jersey.

JEFFREY G. MILLER

Jeffrey G. Miller is presently the U.S. Environmental Protection Agency's Acting Assistant Administrator for Enforcement. The Assistant Administrator is responsible for enforcement of EPA's programs involving water, air, solid waste, toxics, pesticides, drinking water, and noise media.

Prior to being named to his present position, he served as the Deputy Assistant Administrator (DAA) for Water Enforcement. He served in that capacity for four years. As the DAA, he was responsible for managing the National Pollutant Dis-

charge Elimination System (NPDES) including the issuance of permits and assuring compliance with the Federal Water Pollution Control Act (FWPCA) and the Clean Water Act (CWA). During the past year, he was named by the Agency's Deputy Administrator to direct the efforts of the Hazardous Waste Task Force. The Task Force was charged with the responsibility of identifying potential hazardous waste sites and the initiation of enforcement actions against those sites that present the greatest environmental and health hazards.

Previous to his appointment as DAA, Mr. Miller served as Director of the Enforcement Division in EPA's Region I. As Director he was the regional program manager for EPA's permit issuance and enforcement programs.

Prior to being the Enforcement Division Director, he served for two years as the Chief of the Enforcement Branch in Region I where he was responsible for EPA's enforcement programs in the Region.

In the three years prior to joining EPA, he was an Associate with Bingham, Dana & Gould of Boston, Massachusetts. He helped develop a consumer rights program with the Boston Legal Assistance Projects.

He graduated from Princeton University in 1963 with honors in political science. In 1967 he graduated from the Harvard University Law School and received a L.L.B. with honors.

Mr. Miller, 38 is a native of Muncie, Indiana, and now resides in Chevy Chase, Maryland.

Mr. BOLAND. We are pleased to have the Administrator, Doug Costle and it is always pleasant to have the Deputy Administrator, Barbara Blum. Also, Bill Drayton, the Assistant Administrator for Planning and Management; Stephen Gage, the Assistant Administrator for Research and Development; Dave Hawkins the Assistant Administrator for Air, Noise and Radiation; and Steve Jellinek, the Assistant Administrator for Pesticides and Toxic Substances, we are glad to see all of you again. The Inspector General, Inez Reid is also here today. Were you here last year, too?

Ms. REID. No, sir, I was at HEW last year.

Mr. BOLAND. You are the smallest Inspector General we have seen. Most of them look as though they came out of the military.

Mr. COSTLE. She packs a pretty good punch in spite of her size, Mr. Chairman.

Mr. BOLAND. We are glad to have all of you here today. The Environmental Protection Agency is only 10 years old and has been impacted with more laws, regulations, problems and controversy than any other agency of the government. That is a fair statement, isn't it?

Mr. COSTLE. I think so.

Mr. BOLAND. As a matter of fact, it is an understatement. We recognize what your problems are; you are getting additional duties almost by the hour. It has not been an easy task. We appreciate the difficulties that you have and that is why we would like to give you all of the $5,300,000,000. But, I am not sure we are going to be able to do it. The President is, I presume, going to recommend some cuts for all agencies. One of the most recent statements I have read indicates that the Administration may be interested in a 2 percent cut across-the-board. How would that affect you? You wouldn't mind that, would you?

Mr. COSTLE. It is obviously easier if we have an opportunity to try to figure out where to make cuts. Straight across the board is on the one hand an equitable way to do it, but on the other hand the actual effect of it can fall very unevenly.

Mr. BOLAND. I agree with you. I think perhaps across-the-board cuts are sort of copouts on what ought to be done on specific missions within the technical agencies.

The total request for the EPA is $5,091,317,000, which excludes the $250 million for the proposed "superfund." That represents an increase of about $400 million above the 1980 level, of which $300 million is in the construction grants program.

You have fared pretty well, it seems to me, in the employment category. In 1981, eight Cabinet agencies either remained constant or lost employment. Your budget reflects a total of a 222 permanent workyear increase and a 243 full-time equivalency increase.

I have read your statement, Mr. Administrator. I think you highlighted the problems that you have and discussed the impact of the budget upon the activities of the Environmental Protection Agency for fiscal year 1981. Why don't you go ahead with your statement. We will be delighted to hear you.

Mr. COSTLE. Thank you, Mr. Chairman.

It is never an inconvenience for us to come up to this Committee. In the last session of the Congress we testified over 200 times before 40 different committees of the Congress. In all of that, this is literally the only Committee, including the Senate side, where we have an opportunity to take the time to go through our entire program. We tend to look forward to this appearance because you probably get a better view of how the pieces fit together than virtually anybody else in the Congress.

COORDINATION OF COMMITTEE AND BUDGET OFFICE

Mr. BOLAND. It is not easy for us and the staff, I must say. The justifications are not easy reading. That is the reason we like to have good coordination between the budget officers in the various agencies and the Committee staff. I am not sure that we are getting it here though. There seems to be some problem hiring a budget officer. I can understand the desire of getting the very best that you possibly can because this is not an easy budget. When do you think you will have some one aboard?

Mr. COSTLE. Mr. Drayton is actively recruiting now.

Mr. BOLAND. We have difficulty getting information out of the EPA when we need it. It is not so much the accuracy as it is the time element within which information comes back to us. It is impossible for us to do, the job that you would want us to do, and that we are expected to do, without full cooperation of the people who put the budget together.

In any event, I hope you will be getting somebody very soon.

Mr. COSTLE. I should say this was brought to my attention recently and we are working to correct that. It is not in our interest for this Committee to have any difficulty in getting information either accurately or in a timely way. If that has been a problem, we simply have an obligation to fix it. It is that cut and dried and we will do it to the satisfaction of the Committee and the staff.

Mr. BOLAND. That is satisfactory. Thank you very much.

GENERAL STATEMENT

Mr. COSTLE. I think you noted, Mr. Chairman, in your opening remarks that we have indeed inherited an awful big job in a relatively short period of time. I think it is also important to note that we are dealing in many respects with significantly different

problems than we imagined when the agency was created 10 years ago.

The economy, for example, has produced thousands and thousands of chemicals, many of them dangerous, and scattered them in great quantities not only across our country but across the globe, not knowing where they would be released, where they would eventually come to rest, or what effects they would have singly or together on us. Science has now begun to document these effects, and the public and Congress have given us the responsibility to begin to plan for and control these effects.

Our new toxics program is, for the first time, giving our society an overview of the problem we face, systematically identifying especially urgent situations requiring early action, and either working with one of EPA's or another agency's regulatory arms to take the necessary steps or, if necessary, doing so itself.

Our existing water and air programs have turned increasingly to the toxics found in their media. I came before you about two years ago and I said that I thought the Toxic Substances Control Act particularly, since it requires that we utilize our other authorities in the first instance, would act as a good force in the EPA and its programs. Almost across the board our other programs have begun to focus on toxics within the medium in which they are responsible—air or water. I think it is a very healthy kind of integration that is beginning to take place, but it needs time to really become institutionalized.

HAZARDOUS WASTE REGULATIONS

Our new hazardous waste program, which alone will more than double the number of persons with whom we must deal, takes the next logical step—insuring that the tens of millions of tons of dangerous waste generated as byproducts of the commerce for which we already have environmental laws is handled and disposed of safely.

Less than a week ago I signed the first regulations implementing the hazardous waste program. They are the regulations that put in place the manifest system that will begin to tell us where these wastes are, who is generating them and in what quantities, and more importantly, where they are now going. That, I think, is a piece of knowledge that represents the first necessary step of beginning to try to bring some regulatory discipline into what is now a situation where we estimate that perhaps as much as 90 percent of the waste that is being generated is not now being safely disposed of.

Shortly before I came up here, Jeff Miller, the Acting Assistant Administrator for Enforcement, had indicated that of the 500 known sites that we have investigated, at least 200 will require corrective remedial action. This just underscores again, I think, the importance of the superfund bill without which we are really not prepared either financially or administratively or legally to take quick action where we find real problems.

I wanted to point out for this Committee that there is some speculation on what the fate of that legislation may be this year. Once that manifest system begins generating data this summer on

where the wastes now are and where they are going, I think we will find it is a problem we all have and it will appear in virtually every congressional district. Therefore, I think the issue will very suddenly become ripe.

Reactions that we have gotten from the communities in the past when a hazardous waste problem has been discovered, show that people get very upset and want to know how serious it is and can you get it out of here. I think our dilemma is that we will find we don't have very many alternative places to send these wastes. We will have to, in the process of being responsible, take those steps necessary to assure that the sites it is now going to are being managed as effectively as possible while we seek alternatives. This issue will acquire considerable public significance in the next six to ten months. I think the manifest system regulations that we just put in place are really going to trigger it.

REPROGRAMMINGS WITHIN EPA

Mr. Chairman, I want to emphasize for the record that it has been with this Committee's very considerable help that EPA has grown over the last ten years. The Committee has tried, in some measure, to have adequate resources for EPA to carry out the responsibilities that the Congress has given us.

Over the last five years, the Congress has increased our funding over $600 million. However, when you adjust for inflation, our real increase has been roughly $134 million. Our personnel authority has increased about 17 percent or 1687 workyears, including the fiscal year 1981 proposed increase of 222 workyears. These new resources have funded a large part of the work initiated by all these new responsibilities.

In addition, I think this is critical to point out, the agency itself has reprogrammed 1780 workyears and $340 million to meet these new mandates. There is a conventional idiom that there has to be a lot of fat in any Federal agency, but I doubt that you could look to any other Federal agency with a history of ten years in this government that has done more to reprogram its own resources to try to get them where the problem is ripe and where resources are actually needed.

It has been a self-imposed discipline and also something required by the simple fact that we have been given more to do than we have had resources with which to do. We just have not been able to afford to be casually wasteful of those resources.

That is an extraordinary record on reprogramming that I think the Agency does not frequently get credit for.

The central budget dilemma that I believe we now face is that we cannot sensibly take more from this base. We have implemented a great many management efficiencies over the last several years. We have reprogrammed almost to the point of inefficiency. Until now, aggressive management—and I am not saying I did that by myself as my two predecessors were very much in the same boat—has made it possible to maintain most of our base program efforts despite years of gradual erosion. I don't think we can go much further down this path. It is my responsibility to tell you that candidly.

HAZARDOUS WASTES BUDGET

The problems that the public and the Congress recognized in the early seventies are still very real problems. In fact, these problems are more pressing now than then, for two reasons: (1) The volume of pollution, along with the economy, compounds every year, whereas the amount of air, land, and water does not. Our problem is consequently compounding year by year.

(2) A decade of research has given us a much better understanding of the nature of the problem. Acid rain is a good example.

I would, consequently, be alarmed at the prospect of more targeted cuts in our base programs than those the President's budget proposes. The President's 1981 budget is, indeed, very tight. Nevertheless, it provides a significant increase for our new hazardous waste program which is probably our most urgent need right now.

If I can, Mr. Chairman, I would like to give you a quick overview of the major thrusts in the 1981 budget proposals in the hopes that it will provide useful background for the next couple of days of discussion.

The most significant proposal in the President's 1981 budget for EPA is a very significant increase in, and redirection of, our program to control the transport, storage, and disposal of hazardous waste. In 1981 we are requesting an increase of $47 million and 368 permanent workyears to support the research, analysis, continued regulatory development, permitting, and enforcement capability required to implement the hazardous waste control provisions of the Resource Conservation and Recovery Act.

You know as well as I do the potential magnitude of the problem. Suffice it to say that if we fail to get off to a good start on this program, we will simply pay for it later and probably at a much higher cost.

Mr. BOLAND. If you never start, you will never catch up anyhow.

Mr. COSTLE. I think once we get a road map of where it all is, we will have a pretty full agenda for the next several years. We will be, frankly, a long time in catching up with it. At the rate of 60 million tons a year now going to however many thousands of sites, we have a big existing problem out there and there is no way to shut that 60 million tons a year off tomorrow, while we start on what is there now.

We are going to have to not only correct past deficiencies but we are going to have to gradually impose a better system for doing it, even while we make sure that we are not arbitrarily shutting down essential industry in the process.

OIL AND HAZARDOUS SUBSTANCES LIABILITY FUND

(SUPERFUND)

One of the nation's most pressing environmental problems is the control of oil and hazardous substance spills and the mitigation and containment of hazardous waste from abandoned and inactive disposal sites. While increases for implementing RCRA deal with polution problems caused by industrial hazardous wastes from current and future production, the President's proposed legislation for an oil and hazardous substance liability fund, more commonly

referred to as "superfund", will begin to address the current problems created by past abuses in the storage and disposal of hazardous waste.

The President's proposal for superfund will establish a comprehensive and uniform system of notification, emergency response, enforcement, liability, and limited economic compensation for oil and hazardous substance spill releases into the environment. We will be able to take immediate, short-term actions, and develop and execute long-term solutions to incidents at disposal sites which threaten public health, safety, or significant environmental resources.

The President's proposed legislation establishes a four year, $1.6 billion authorization for the fund, $1.3 billion of which will be financed through fees levied on related segments of the oil and chemical industry. The remaining $325 million will be financed through Federal appropriations. Several other narrower pollution funds will be consolidated to support the implementation and operation of response activities.

Of the $250 million proposed in our 1981 budget, $200 million will be financed through fees on industry. The detailed justification for the fund will be submitted when the Congress enacts the legislation.

CONSTRUCTION GRANTS

EPA's largest expenditure by far remains in our wastewater treatment construction grants program. The President's 1981 budget requests $3.7 billion in new authority for the program. We project that obligations will total $4.5 billion and the outlay will increase by $50 million in 1981 to a total of $3.95 billion.

The Agency has two objectives in the program: (1) to maintain obligations at reasonable levels; and (2) to ensure full technical, environmental and fiscal integrity of our projects. These objectives are co-equal and must be balanced against each other.

The President's 1981 request is consistent with current obligation trends and his long-term commitment of $45 billion for these projects over the ten year period from 1978 to 1987. In 1981 we will place our principal emphasis on program implementation and management. The transition in program orientation resulting from the Clean Water Act of 1977 and the re-emphasis on program quality will be largely completed. The highest management priority effort in the near term will be to shift the program toward decentralized management, with maximum emphasis on State delegation and use of Corps of Engineers' resources.

Our request for $3.7 billion is sufficient to continue to operate the program at planned levels in a majority of the States. However, because of the existing State allocation formula, several States will not receive sufficient funds to begin construction of urgently needed projects which are already planned and designed. At the same time, others may need the entire two year allocation period to effectively obligate all their funds.

We believe that the Congress should move to correct this distribution problem. We are currently evaluating with the Congress a number of proposals that would allocate available funds to the

highest priority needs and to those States with priority projects ready for construction.

I would now like to turn to some important changes in other EPA programs.

AIR AND WATER QUALITY PROGRAMS

The President's budget increase of 368 permanent workyears for hazardous waste implementation was possible primarily through the budget increase of 222 permanent workyears. However, much of the additional 146 permanent workyears were reprogrammed from our more mature air and water quality programs in order to meet this urgent need. Given the need for constraints on total employment, these programs are more capable than our newer programs of continued progress toward their goals while sustaining these reductions.

The emphasis of the 1981 air program will be on those areas of the country that need extensions until 1987 to attain the standards for ozone and carbon monoxide. This will require States to have approved implementation plans in 1982. High priority will also be given to anti-tampering and anti-fuel switching programs so as to prevent the deterioration of pollution control equipment. We are talking now about trying to protect essentially a $7 billion investment. It is a critical problem in the air field.

The President's budget reduces the total air program by 87 workyears and $2 million, primarily in new source performance standards and mobile source regulation development in regional air management.

We are proposing a reduction in our 1981 water quality program of 56 vorkyears and $2.3 million. Much of this decrease will be research, primarily in health effects and research supporting best management alternatives for agriculture activities that contribute to non-point source pollution.

The major emphasis for 1981 will be on the development of toxic pollutant controls, effective management of the construction grants program, and development of integrated water quality management programs. We have increased the effluent guideline program $1.5 million to develop economic analysis and engineering surveys of the synthetic fuels industry.

RESEARCH AND DEVELOPMENT

Our 1981 research and development program will increase by $27 million to a total of $368.7 million. In real dollars this is a reduction. The majority of that increase, $12.2 million, will support the hazardous waste program.

I believe that we have made significant progress in improving research planning and management to support our regulatory programs. The establishment and initial operation of 13 research committees, as well as our Agency ZBB process, has allowed R&D to be far more responsive to regulatory program needs.

DRINKING WATER PROGRAM

The drinking water program will receive a large increase of $4.3 million in research and development. This will support development of practical, cost-effective processes to meet the needs of small communities which have difficulty in complying with drinking water standards.

PESTICIDES PROGRAM

Pesticides workyears have been reduced reflecting the transfer of health effects research. We are, however, increasing the program's dollar budget by $5.8 million. Contracts for development of registration standards have been increased by $4.9 million. We have also proposed $4 million to support the disposal of the Silvex products that were suspended in emergency action in 1979.

TOXIC SUBSTANCES PROGRAM

After five years of rapid growth, our 1981 proposal for our maturing toxic substances program remains relatively stable.

The President's budget for toxic substances increases 86 workyears and $11.4 million. This increase in workyears appears larger than it is. Most of the increase offsets a decrease in pesticides and reflects the transfer of health research directed at specific pesticides to research more applicable to broader generic categories of chemicals. This transfer reflects our continuing effort to integrate these two programs where we can.

RADIATION PROGRAM

Our radiation program will essentially be held steady in 1981. The emphasis of the program will include radiological emergency response plans, activities associated with radioactive waste management and radioactive air pollutants.

NOISE PROGRAM

Resources for the noise program will decrease slightly in 1981 and priority will be given to non-auditory health effects studies. Financial assistance to States to provide technical assistance to communities that support local noise programs will continue.

MANAGEMENT AND SUPPORT PROGRAMS

The Agency's management and support expenditures have grown only 59 percent compared to an 87 percent growth in the Agency's overall budget during the past five years. The budget proposes three essential increases:

(1) $3.8 million to support our economic (chiefly cost-benefit), regulatory reform, and energy work. Especially given the economic strains now facing our economy, it is more important than ever that EPA fully understand the cost and benefits of alternative ways of getting our regulatory job done. We also must continue our very successful efforts to find less costly, more effective ways of getting our job done. In the face of our energy problem, we similarly must fully coordinate the energy impacts of our regulations,

streamline our priority procedures, and help ensure that new energy investments are environmentally sound.

(2) $2.7 million to cover the cost of safety repairs and pollution controls in EPA buildings.

(3) $6 million to provide for known increases in our rent and utility costs.

INFORMATION MANAGEMENT

We urgently need to strengthen the management of our information systems. We spend almost one-eighth of our total operating budget on monitoring and information management. Implementation of the TSCA and the hazardous waste programs, which will multiply the data we must handle, makes it essential that we act now. If we don't, we may never be able to pull the pieces together again in the near future. Success will help us integrate the nation's environmental programs. Failure will divide us and waste many millions of dollars. In 1981, we need (1) $10.3 million to begin replacing our core computer utility, and (2) 20 permanent workyears to make it possible for us to integrate and provide competent central management for our data and information investment.

SYNTHETIC FUELS

Virtually every office in EPA is involved in a coordinated effort to help the President's energy development program. We are working first to develop environmental guidelines for new synfuels plants. In 1980, we are proposing to redirect $2.9 million to this effort, followed by a further increase of $13.4 million in 1981. We also request 13 workyears to accelerate our permitting and environmental review of new energy facilities.

STATE AND LOCAL GRANTS

We are more dependent than ever on State and local control agencies to implement our programs. The President's proposed budget provides a small $14.8 million increase in State grants in 1981. $11.4 million of this increase is for hazardous waste. We are still contemplating as many as 35 States, and hopefully more, will take authorization for that program. Further, the administration plans to submit a supplemental request for integrated environmental assistance once the Congress has enacted the legislation.

We are trying to work more closely with the States and localities. I have emphasized joint planning through the State/EPA agreement mechanism. I hope we will soon be able to encourage State/local innovation and allow more flexibility through integrated assistance. Encouraging more efficient, better targeted use of the 85 percent of the nation's environmental regulatory manpower that works at the State and local levels has to be one of our most urgent priorities.

SUMMARY OF EPA REQUEST

In sum, the President is proposing an increase of 222 permanent workyears and $655 million, bringing EPA's 1981 budget to $5.3 billion. The $655 million increase includes $300 million for construction grants (to cover a portion of inflation), $250 million to

implement the President's proposed legislation for an oil and hazardous substances liability fund, and $105 million for our operating budget (including State grants).

The President's 1981 budget proposed for EPA reflects both his continuing strong support for essential public health needs and his understanding that a healthy, productive population is not possible without a healthy environment. It also reflects the difficult economic situation and tight budget year we face.

The work we must do over the next several years will be difficult, sensitive, even a little overwhelming to contemplate. It is, however, urgent, necessary business. This Committee has always studied the Agency's programs carefully and supported us when we deserved that support. I and my predecessors very much understand and appreciate that.

Mr. Chairman, this concludes my statement. My colleagues and I will be happy to answer any questions that you or members of the Subcommittee may have.

[The statement follows:]

STATEMENT OF HON. DOUGLAS M. COSTLE ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and Members of the Subcommittee, I am pleased to be here today to discuss the Environmental Protection Agency's budget request for fiscal year 1981.

In the balance of my remarks, I will be setting out some of the highlights of the various programs within my agency. First, however, I would like to report briefly about the rapid evolution of our efforts to protect the environment and public health over the last several years and the chief directions I see us moving toward over the next several years.

EPA is dealing with very significantly different, larger and more complex problems now than we ever imagined when the agency was created almost ten years ago. We are now trying to protect our planet and people from the multiplying and still inadequately understood effects of the chemical society we have created over the last decade. The economy has produced tens of thousands of chemicals, many dangerous, and scattered them in great quantities across the globe, not knowing where they would be released, where they would eventually come to rest, or what effects they would have singly or together on us. Science has now begun to document these effects, and the public and Congress have given us the responsibility to begin to plan for and control these effects.

Our new toxics program is, for the first time, giving our society an overview of the problem we face, systematically identifying especially urgent situations requiring early action, and either working with one of EPA's or another agency's regulatory arms to take the necessary steps or, if necessary, doing so itself. Our existing water and air programs have turned increasingly to the toxics found in their media, we are slowly meshing our pesticides and toxic programs. We have suddenly been shaken by the discovery that American drinking water is not safe, and we have begun to re-establish what most of us had felt was a cornerstone public health assurance, virtually an American right.

Our new hazardous waste program, which alone will more than double the number of persons with whom we must deal, takes the next logical step—insuring that the tens of millions of tons of dangerous waste generated as byproducts of the commerce for which we already have environmental laws is handled and disposed of safely. Now it rarely is. The tragic consequences of poisoned lands and groundwaters—which we probably won't be able to correct for centuries, if then—and of illness and death are just beginning to become apparent. I believe that when we understand what we have done to our irreplaceable groundwater reserves, we will be shocked. (I have initiated a comprehensive review of these groundwater problems and hope to be able to initiate a sensible, coordinated response from all our programs by late summer.) The Administration's "Superfund" proposal would enable us to deal with the terrible heritage of the last decades of disregard for these dangers.

With your help, EPA has grown substantially. Over the last five years Congress has increased our funding over $600 million. However, when you adjust for inflation our real increase has only been $134 million. Our personnel authority has increased about 17 percent of 1,687 workyears including the fiscal year 1981 proposed increase of 222 workyears. These new resources have funded a large part of the work initiated by all these new responsibilities. In addition, the Agency has reprogrammed, 1,780 workyears and $340 million to meet these new mandates.

The central budget dilemma I believe we now face is that we cannot sensibly take more from this base. We have implemented a great many management efficiencies over the last several years. We have reprogrammed to the point of inefficiency. Until now aggressive management has made it possible to maintain most of our base program efforts despite years of gradual erosion. I don't think we can go much further down this path.

The problems the public and the Congress recognized in the early 1970's are still very real problems. In fact, these problems are more pressing now than then—for two reasons:

(1) The volume of pollution, along with the economy, compounds every year, whereas the amount of air, land, and water does not. Our problem is consequently compounding year by year.

(2) a decade of research has given us a much better understanding of the nature of the problem. Acid rain is a good example.

I would, consequently, be alarmed at the prospect of more targeted cuts in our base programs than those the President's budget proposes. The President's 1981 budget is, indeed, very tight. Nevertheless, it provides a significant increase for our new hazardous waste program.

I would like now to give you a quick overview of the major thrusts of our 1981 budget proposals. This overview should provide a useful background to our detailed program-by-program review of the next several days.

Hazardous waste

The most significant proposal in the President's 1981 budget for EPA is a very significant increase in, and redirection of, our program to control the transport, storage, and disposal of hazardous waste. In 1981 we are requesting an increase of $47 million and 368 permanent workyears to support the research, analysis, continued regulatory development, permitting, and enforcement capability required to implement the hazardous waste control provisions of RCRA.

The hazardous waste problem we face is enormous. Each year our society generates more than 54 million metric tons of hazardous waste. Only 10 percent of this material is currently disposed of safely. Thousands of existing waste disposal sites probably pose hazards to health and the environment. Hazardous waste from these sites are seeping into our groundwater supply and escaping into the air we breathe. Love Canal and Pittston are only two particularly well known examples.

The majority of our increase for hazardous waste will support implementation of the regulatory program for control and management of hazardous waste. The increase will also support an industry-by-industry study of hazardous waste generation and management practices to support additional regulatory development. Research and development activities will focus on improving our information base on environmentally safe disposal practices.

Oil and hazardous waste liability fund

One of this nation's most pressing environmental problems is the control of oil and hazardous substance spills and the mitigation and containment of hazardous waste from abandoned and inactive disposal sites. While increases for implementing RCRA deal with pollution problems caused by industrial hazardous wastes from current and future production, the President's proposed legislation for an oil and hazardous substance liability fund, more commonly referred to as "Superfund," will begin to address the current problems created by past abuses in the storage and disposal of hazardous waste.

The President's proposal for Superfund will establish a comprehensive and uniform system of notification, emergency response, enforcement, liability, and limited economic compensation for oil and hazardous substance spill releases into the environment. We will be able to take immediate, short-term actions, and develop and execute long-term solutions to incidents at disposal sites which threaten public health, safety, or significant environmental resources.

The President's proposed legislation establishes a four-year $1.6 billion authorization for the fund, $1.3 billion of which will be financed through fees levied on related segments of the oil and chemical industry. The remaining $325 million will be financed through Federal appropriations. Several other narrower pollution funds

will be consolidated to support the implementation and operation of response activities. Of the $250 million proposed in our 1981 budget, $200 million will be financed through fees on industry. The detailed justification for the fund will be submitted when the Congress enacts the legislation.

Construction grants

EPA's largest expenditure by far remains in our wastewater treatment construction grants program. The President's 1981 budget requests $3.7 billion in new authority for the program. We project that obligations will total $4.5 billion and the outlay will increase by $50 million in 1981 to a total of $3.95 billion. The Agency has two objectives in the program: (1) to maintain obligations at reasonable levels; and (2) to ensure full technical, environmental, and fiscal integrity of our projects. These objectives are co-equal and must be balanced against each other.

The President's 1981 request is consistent with current obligation trends and his long-term commitment of $45 billion for these projects over the 10-year period from 1978 to 1987. In 1981 we will place our principal emphasis on program implementation and management. The transition in program orientation resulting from the Clean Water Act of 1977 and the re-emphasis on program quality will be largely completed. The highest management priority effort in the near term will be to shift the program toward decentralized management, with maximum emphasis on State delegation and use of Corps of Engineers resources.

Our request for $3.7 billion is sufficient to continue to operate the program at planned levels in a majority of the States. However, because of the existing State allocation formula, several States will not receive sufficient funds to begin construction of urgently needed projects which are already planned and designed. At the same time others may need the entire two year allocation period to effectively obligate all their funds. We believe that the Congress should move to correct the distributional problem. We are currently evaluating with the Congress a number of proposals that would allocate available funds to the highest priority needs and to those States with priority projects ready for construction.

I would now like to turn to some important changes in other EPA programs.

The President's budget increase of 368 permanent workyears for hazardous waste implementation was possible primarily through the budget increase of 222 permanent workyears. However, much of the additional 146 permanent were workyears reprogrammed from our more mature air and water quality programs in order to meet this urgent need. Given the need for constraints on total employment, these programs are more capable than our newer programs of continued progress toward their goals while sustaining these reductions.

The emphasis of the 1981 air program will be on those areas of the country that need extensions until 1987 to attain the standards for ozone and carbon monoxide. This will require States to have approved implementation plans in 1982. High priority will also be given to anti-tampering and anti-fuel switching programs so as to prevent the deterioration of pollution control equipment. These initiatives will be supported through an increase of $4.9 million in State grant assistance.

The budget includes an increase of $712 thousand and 12 workyears for increased confirmatory testing for fuel economy, reflecting the high priority of energy conservation.

We will continue our major source enforcement effort in 1981. This effort concentrates the Agency's stationary source enforcement efforts on those sources who have never come into compliance and who have not shown plans to comply with the requirements of the Clean Air Act. In addition, we expect to begin assessing administrative noncompliance penalties under Section 120 of the Clean Air Act.

The President's budget reduces the total air program by 87 workyears and $2 million, primarily in new source performance standards and mobile source regulation development in regional air management.

We are proposing a reduction in our 1981 water quality program of 56 workyears and $2.3 million. Much of this decrease will be research, primarily in health effects and research supporting best management alternatives for agriculture activities that contribute to non-point source pollution. The major emphasis for 1981 will be on the development of toxic pollutant controls, effective management of the construction grants program, and development of integrated water quality management programs. We have increased the effluent guideline program $1.5 million to develop economic analysis and engineering surveys of the synthetic fuels industry.

Research and development

Our 1981 research and development program will increase by $27 million to a total of $368.7 million. In real dollars this is a reduction. The majority of that increase, $12.2 million, will support the hazardous waste program.

I believe that we have made significant progress in improving research planning and management to support our regulatory programs. The establishment and initial operation of 13 research committees, as well as our Agency ZBB process, has allowed R&D to be far more responsive to regulatory program needs.

Drinking water

The drinking water program will receive a large increase of $4.3 million in research and development. This will support development of practical, cost-effective processes to meet the needs of small communities which have difficulty in complying with drinking water standards.

Pesticides

Pesticides workyears have been reduced reflecting the transfer of health effects research. We are, however, increasing the program's dollar budget by $5.8 million. Contracts for development of registration standards have been increased by $4.9 million. We have also proposed $4 million to support the disposal of the silvex products that were suspended in emergency action in 1979.

Toxic substances

After five years of rapid growth, our 1981 proposal for our maturing toxic substances program remains relatively stable.

The President's budget for toxic substances increases 86 workyears and $11.4 million. This increase in workyears appears larger than it is. Most of the increase offsets a decrease in pesticides and reflects the transfer of health research directed at specific pesticides to research more applicable to broader generic categories of chemicals. This transfer reflects our continuing effort to integrate these two programs where we can.

Radiation

Our radiation program will essentially be held steady in 1980. The emphasis of the program will include radiological emergency response plans, activities associated with radioactive waste management and radioactive air pollutants.

Noise

Resources for the noise program will decrease slightly in 1981 and priority will be given to non-auditory health effects studies. Financial assistance to States to provide technical assistance to communities that support local noise programs will continue.

Management and support

The Agency's management and support expenditures have grown only 59 percent compared to an 87 percent growth in the Agency's overall budget during the past five years. The budget proposes three essential increases.

(1) $3.8 million to support our economic (chiefly cost-benefit), regulatory reform, and energy work. Especially given the economic strains now facing our economy, it is more important than ever that EPA fully understand the cost and benefits of alternative ways or getting our regulatory job done. We also must continue our very successful efforts to find less costly, more effective ways of getting our job done. In the face of our energy problem we similarly must fully coordinate the energy impacts of our regulations, streamline our priority procedures, and help ensure that new energy investments are environmentally sound.

(2) $2.7 million to cover the cost of safety repairs and pollution controls in EPA buildings.

(3) $6 million to provide for known increases in our rent and utility costs.

Information management

We urgently need to strengthen the management of our information systems. We spend almost one-eight of our total operating budget on monitoring and information management. Implementation of the TSCA and the hazardous waste programs, which will multiply the data we must handle, make it essential that we act now. If we don't we may never be able to pull the pieces together again in the near future. Success will help us integrate the nation's environmental programs. Failure will divide us and waste many millions of dollars. In 1981 we need (1) $10.3 million to begin replacing our core computer utility and (2) 20 permanent workyears to make it possible for us to integrate and provide competent central management for our data and information investment.

Synthetic fuels.

Virtually every office in EPA is involved in a coordinated effort to help the President's energy development program. We are working first to develop environ-

60-531 O - 80 - 2

mental guidelines for new synfuels plants. In 1980, we are proposing to re-direct $2.9 million to this effort, followed by a further increase of $13.4 million in 1981. We also request 13 workyears to accelerate our permitting and environmental review of new energy facilities.

State and local grants

We are more dependent than ever on state and local control agencies to implement our programs. The President's proposed budget provides a small $14.8 million increase in State grants in 1981. $11.4 million of this increase is for hazardous waste. Further, the Administration plans to submit a supplemental request for integrated environmental assistance once the Congress has enacted the legislation.

We are trying to work more closely with the States and localities. I have emphasized joint planning through the State/EPA agreement mechanism. I hope we will soon be able to encourage State/local innovation and allow more flexibility through Integrated Assistance. Encouraging more efficient, better targeted use of the 85 percent of the nation's environmental regulatory manpower that works at the State and local levels has to be one of our most urgent priorities.

* * * * * * *

In sum, the President is proposing an increase of 222 permanent workyears and $655 million, bringing EPA's 1981 budget to $5.3 billion. The $655 million increase includes $300 million for construction grants (to cover a portion of inflation), $250 million to implement the President's proposed legislation for an oil and hazardous substances liability fund, and $105 million for our operating budget (including State grants).

The President's 1981 budget proposed for EPA reflects both his continuing strong support for essential public health needs and his understanding that a healthy productive population is not possible without a healthy environment. It also reflects the difficult economic situation and tight budget year we face.

The work we must do over the next several years will be difficult, sensitive, even a little overwhelming to comtemplate. It is, however, urgent, necessary business. This committee has always studied the Agency's programs carefully and supported us when we deserved that support. I and my predecessors very much understand and appreciate that.

Mr. Chairman, this concludes my statement. My colleagues and I will be happy to answer any questions that you or members of the subcommittee may have.

BUBBLE CONCEPT

Mr. BOLAND. Thank you very much, Mr. Costle.

The past year has certainly not lacked its share of difficult and complicated environmental issues, as your statement indicates.

I know one of the most interesting trends noted in the environmental field is a movement toward new regulatory techniques to compliment the so-called "command and control" approach. One of these alternative techniques, the bubble policy, received much favorable press coverage last year.

How is this new approach progressing? What has been the reaction from industry and the environmental groups? I know some industries have indicated that it is a viable approach and they welcome it with enthusiasm.

Mr. COSTLE. I think probably it is one of the more innovative steps we have taken in an effort to try to do two things: One, to find the most cost-effective way to comply with our air laws and, secondly, to introduce an element of flexibility that gives plant managers an opportunity to find the most cost-effective way to do it.

Basically, the bubble gives us the same bottom line, environmentally, in terms of the amount of allowable pollution. Rather than the Federal government assigning specific emission numbers stack-by-stack in a facility that may have 87 stacks, the bubble concept essentially gives that company a bottom line number and says—

you find, within that complex of yours, the most cost-effective way to get that job done.

The best way to illustrate this is a study done by DuPont at their Chambers Works, just as you cross the river in New Jersey. They estimated that under the conventional approach, where the government would set stack-by-stack emission limits, it would cost them roughly $20 million to get an 85 percent reduction in hydrocarbons. However, under the bubble approach, where they would put far more stringent controls on some stacks than we would require and far less stringent controls on other stacks than we would require, DuPont concluded, with respect to Chambers Works, that they could get an 89 percent reduction for roughly $5 million. This is an example of the kind of flexibility that we hope the bubble policy will provide, guaranteeing us the same bottom line in terms of environmental impact but providing more flexibility to the businessman to do it.

I formally adopted the bubble concept as EPA policy this year. We have received a very, very positive response from industry. They are the ones who really have the creative part of the job to do. They are the ones who now have to go back and look at their facilities to see how the bubble can be applied, what cost savings are in fact achievable, and whether they are able to come back to us and provide us with enforceable guarantees that the bottom line will remain essentially the same as it would under the old approach.

It is going to vary from industry to industry, but we think we are going to find significant savings potential in some industries, and less significant, probably, in others. It is too early to draw a conclusion about the success of the program. We are now in the process of trying to persuade our State colleagues, who have something independent to say about whether or not the bubble is used and its appropriateness. I think our focus this year will in fact be working with the State governments to find applications for the bubble and give them that same sense of confidence that we feel. It is just simply a better mousetrap and we don't give anything away environmentally. In fact, we get a potential for a significant cost savings in return.

The bubble means there are more resources available to do all the other jobs that we want to do in society. I think if it works the way it is intended, we will also see an encouragement for innovation on the part of industry to try to come up with more cost-effective solutions.

In the past, industry's tendency has been to take as a given the Federal emissions number and then to take, as a given, the technology that they have to use to get to that number. This policy will encourage them, because it explicitly says we will reward you for innovation and will pay you to essentially try to innovate and find new ways to control pollution.

Mr. BOLAND. As you have indicated, the bottom line is, a company may tighten the control of a pollutant at one point and relax controls at another, as long as the total pollution does not exceed the existing limit on the plant. Is that about the way it works?

Mr. COSTLE. Exactly.

Mr. BOLAND. What about the specific pollutants? Aren't some of the pollutants more hazardous and dangerous to your health than others?

Mr. COSTLE. That is true. In fact, we contemplate that for toxic pollutants we will have to use judgment in each case as to how appropriate the use of the bubble would be. There is also the further complication that it clearly works best when you are dealing with a single pollutant so that you know all 50 stacks, if you will, are emitting the same thing. If you are emitting apples and oranges, that is one kind of chemical from one stack and another chemical from another stack, you have a different situation. One of the limits I have placed on the bubble is that you cannot make trade-offs among different pollutants—you cannot trade apples for oranges.

OIL AND HAZARDOUS SUBSTANCES LIABILITY FUND

(SUPERFUND)

Mr. BOLAND. This budget includes $250 million for the proposed superfund. That authorizing legislation was proposed last year and it is currently working its way through the Congress.

Do you have any idea when it may be enacted? Do you think Congress will get to it in this session?

Mr. COSTLE. I am hoping that we can. I would ask Chris Beck to give this Committee a brief status report. As I understand it, we are essentially into markups in the Senate and we have several versions pending in the House, but they are all moving. It is not stuck.

Mr. BOLAND. But if it is not enacted this year, you are facing a rather bleak budget year, aren't you?

Mr. COSTLE. We are indeed. Moreover, it means that as we find these abandoned orphan sites, and there are demonstrable problems or where we cannot find the culpable party, then we will not have the wherewithal to take corrective action.

The Congress is likely to see in that case a flood of individual requests from members who happen to find one of these sites in their districts for a special appropriation to cope with remedial action to bring this into some containment.

Mr. BOLAND. How many Committees in the House and Senate will take action on the legislation?

Mr. BECK. There are three committees on the House side that have relevant jurisdiction and there is one on the Senate side. But the major committee action on the House side is with Congressman Florio's Interstate and Foreign Commerce Committee. There is active reconsideration of that bill now. It had markup in December and it kind of got abandoned at that point, but it is now moving again.

STANDARDS FOR STEEL INDUSTRY

Mr. BOLAND. When that legislation was working its way through the Congress, the United States Steel Corporation and the Chrysler Corporation complained that a number of their problems can be attributed to excessive environmental standards required by the EPA? What about these developments?

Mr. COSTLE. I would like to comment on that and I will probably ask Jeff Miller to add to it.

The steel industry is probably one of the most inherently dirty industries in terms of pollution generated of any that we deal with. It is a big industry. They generate big volumes of product and they generate, as a result, big volumes of pollution as well. In terms of what the Clean Air and Clean Water Act require them to do, they have a big job because they are inherently a very dirty industry. When we look at the overall cost projections of what they have to do, we think they are reasonable within the context of that industry. The industry's basic complaint is that they want to spend money for a lot of things and at this point in time a higher proportion—at this point it still has not exceeded 20 or 25 percent—of their capital investment is going into pollution control as opposed to modernization or other kinds of things.

There is a question as to how much money they would be investing in other things if that money was freed. The fact is that the law has given them a generous amount of time to make these investments. They have forestalled making these investments for years and now it is catching up with them and it is coming at a time when they also realize they have to do some modernization.

Our approach to them has been to say that we will sit down with them case by case and try to work out a schedule for a pollution control investment that will track with their schedule for modernization. We think that is the optimum solution.

When I started out three years ago, less than 10 percent, I think, of the steel works in this country were either in compliance with air requirements or on a compliance schedule. Water compliance has risen from 51 percent three years ago to 87 percent compliance today. We have now pushed that figure up to roughly 60 percent. We are getting consent decrees with the steel industry. They are agreeing to make these investments. They have never made any bones about the fact that they would rather not have to make the investment. We think the investments are reasonable, but we would also acknowledge that they have big capital formation problems right now and that they have to raise, because they are so big and expensive an industry, large sums of capital. But it is clearly proportionate to the amount of the pollution problem that they represent.

Mr. BOLAND. I suppose that when the industry reaches a decision to cut back, one of the reasons that might make it justifiable is blaming the environmental controls required by the EPA.

Mr. COSTLE. They did some of that. However, in the plants that U.S. Steel announced a cutback on, the fact is that we did not have any outstanding environmental beefs with any of them except Youngstown and they told us that was not an economic plant anyway.

I think the general consensus among economists who are familiar with the steel industry are that those closures were probably economically long overdue and it was just U.S. Steel finally getting around to making a decision in terms of resizing their own facilities, that other companies in the industry made somewhat earlier.

I think it is a bit of a red herring to blame it on the EPA.

Mr. MILLER. I think one thing to add is that half of the requirements we are talking about are water requirements. We go through a standard setting exercise there and one of the components is the economic effects on the industry. That analysis was done and the effects were not disruptive to the industry and that has been all the way through the course.

We have found very few situations in negotiating specific problems in the industry where they could not come to grips with it. Probably the worst financial situation of any in the steel industry was Wheeling, Pittsburgh. Working with the Economic Development Administration, we were able to come up with a pollution control package and a financing package and keep that particular industry healthy and meet the environmental requirements.

AUTOMOBILE INDUSTRY STANDARDS

Mr. BOLAND. What about the automobile industry? Chrysler ascribes that environmental controls were one of the main reasons the company was in financial trouble.

Mr. MILLER. I think that is a bum rap because the effects of the environmental requirement in the automobile industry are not very much from air and water pollution control but from the emission devices that are required to be put in the cars. All of that cost is passed on to the consumer. The cost is about the same to Chrysler as it is to the other companies. It should not be a factor.

Mr. COSTLE. I think it is fair to say that between fuel economy requirements and safety requirements and emission requirements that we are in the process of changing the nature of the American automobile. Those are a set of very deliberate policy decisions the Congress made.

In the case of emissions, the Congress itself set the numbers, not EPA. They gave us some flexibility on scheduling which we have been, I think, reasonably common-sensical about using. Congress did put a heavy load on them in terms of producing more fuel efficient cars.

But even Henry Ford said publicly that there is more innovation going on in that industry right now than has gone on for years, largely because the government is forcing them to produce a socially responsible car.

Mr. MILLER. What I have read about the automobile industry recently is that, with the exception of Chrysler, the other automobile manufacturers are now international companies. They have an international automobile market and international manufacturing. Chrysler is not in that market and that may have a lot to do with their financial situation now, much more than the kinds of governmental programs they are involved with.

Mr. TRAXLER. Chrysler is an international manufacturer. It makes a significant number of vehicles for sale in different parts of the world, especially Central and South America.

Mr. COSTLE. Haven't they been withdrawing from that market?

Mr. TRAXLER. I think they have sold off some of their European divisions, but not South America. I think you are going to see it there and in Central America, it is going to be an area of great competition among our manufacturers. They have some consor-

tiums there with other manufacturers, but they are a very viable force in the Mexican market. In fact, I think they are the strongest.

Mr. COSTLE. We seem to be moving toward an international car; even the European companies seem to be moving in that direction.

Mr. BOLAND. I think that would have a significant impact on the automobile industry.

Mr. COSTLE. The automobile industry is a key part of our economy because so many other industries are related to it.

Mr. TRAXLER. I've tried to convince you of that, Doug, for so long. I am so pleased to hear that you understand. You say that once a year. I am glad to know 1 day out of 365 you are conscious of that fact.

Mr. COSTLE. You did not realize that you are preaching to the choir. That doesn't mean they should not produce a fuel efficient car.

ENERGY MOBILIZATION BOARD

Mr. BOLAND. Congress has nearly completed action on a piece of legislation that might affect you in the future. It would establish an Energy Mobilization Board to accelerate government regulatory action on specific energy proposals. How do you think the EMB will affect the way EPA does business.

Specifically, what additional resources do you think you will require to comply with the provisions of that Act?

Mr. COSTLE. I will have to see how that bill finally emerges. It is hard to figure it out. Frankly, the President has been very publicly candid on what he hopes will in fact emerge. He made a very strong statement just two days ago at the White House where he publicly opposed substantive waivers or grandfather provisions that have the same effect, perhaps in the back door, of substantive waivers. I suspect how the Congress comes out on that issue could have a lot to do with what additional resources we will have to have.

I would like to point out and have in the record the fact that in terms of energy permitting, one of the accusations made in the debate over the 1977 Clean Air Act was that we would not be able to permit any power plants because the standards would be so strict and the PSD would be too complicated.

We have, since that Act was passed, permitted upwards of 85 power plants. We have not had to turn one down. Some of them are located within five to ten miles of metropolitan areas. The average processing time for a permit was five to ten months within EPA. I think we will find that the most significant body of delay, except in a handful of projects, will turn out to be at the State and local level.

I have never been convinced as to how much we are going to accomplish unless we deal with that problem. There have been a number of projects that have been hung up for an unnecessarily long time in the Federal government. My theory is that those projects tend to get hung up because they are highly controversial and they may be fairly characterized as turkeys and, if anything, the Federal government has not been able to say no soon enough.

I think to the extent EMB is able to provide a fast-tracking system and accounting system, I have no basic quarrel with that. We have created twenty new regulatory agencies within the last ten years. I think it is inevitable unless there is a way to track all that activity, that, the left foot can be stepping on the right if there is not some system for keeping that straight.

CONVERSION TO WORKYEARS

Mr. BOLAND. We have a question here that anyone can address. That is, in fiscal year 1979, the EPA began a new system of personnel management whereby workyears—not end-of-year positions—is the control. The 1979 estimate contained in the 1980 President's budget included $310 million for personnel services and assumed full-time equivalency of 13,275 workyears. Actually 1979 experience reveals 12,107 workyears and personnel services obligations of $290 million—a considerable deviation from the plan. That portion of the $20 million difference in the abatement and control account and research and development account carried forward into 1980. Is that correct?

Ms. BLUM. Yes.

Mr. BOLAND. What is the amount of the carryover?

Mr. DRAYTON. You are talking about our utilization of personnel?

Mr. BOLAND. We are talking about the $20 million difference between the actual 1979 experience and the 1980 President's budget which included $310 million for personnel services and assumed a full-time equivalency of 13,275 workyears.

Mr. DRAYTON. There are really two chief reasons for that: The first is simply poor estimation in the first year of using the FTE system. We did not have a base year and simply did not make as good an estimate as we should.

The second is that our utilization of personnel in fiscal year 1979 was very unsatisfactory. We did not use as high a percentage of the full-time equivalency as we should have used.

Mr. BOLAND. The figures were very inaccurate, were they not? The real issue is that last year you told us that you needed funds for 13,275 workyears and the actual was only 12,107 workyears, that was a shortfall of 1,000 workyears. Of course, there was a corresponding shortfall in dollars.

So I guess it can be said that the estimate was not very accurate, was it?

Mr. DRAYTON. I think in that case it was not only the question of the estimate, it was more a question of our ability to manage the new system. Most of our managers were no more familiar with the New FTE system than the people doing the estimates.

So, we in fact underutilized our resources. We were affected by the freeze last year which caught us just as we were beginning to hire up. The combined effects of those two factors led us to underutilize our workyears by about 9 percent last year.

We have since undertaken a series of actions to get that under control. I can report that in our month-by-month measurement of office-by-office personnel actions, we have a specific hiring plan for this year against which we compare actual utilization. We assumed there would be relatively low hiring in the first couple of months of

the year because of the lag time in getting through the processing systems.

By the beginning of the winter, we expected the rate of hiring to go up very sharply. Indeed, that has happened. In January, we had a net hire for the agency of 120 people, which is almost twice what we were assuming for this period.

We are estimating, nonetheless, that we may fall short a little bit in meeting our 98 percent estimate. But, the rate of progress in the last month or so has been very encouraging. The reason we may fall a bit short of our estimate is because we had not calculated the impact of this very dramatic increase in their processing workload on our personnel system. The personnel office has almost three times the number of cases this fall as they had last fall. That has created a pipeline clog. We now have that largely under control. The number of new hire offers has been at a record level for the last several months.

Mr. COSTLE. We had a 91 percent utilization rate by the end of that first year with the system. We have been projecting a 98 percent utilization rate. As of the end of this first quarter, we are beginning to close that gap, which is a dramatic change. We are well on our way to meeting our estimate.

I also found, Mr. Chairman, quite candidly, that the personnel system is sufficiently complicated and that we often don't allow adequate lag time to process applications. There is also another phenomenon at EPA which we are still grappling with to try to find the most effective way to handle. That is, there is an inherent tendency for one program in the agency to cannibalize another in recruiting for new expanding programs.

We have now developed an accounting system that allows us to track the change in figures. We don't want to inhibit people from horizontal moving within the agency from program to program, particularly if it involves a promotion, but we have to manage so that we are not robbing Peter to pay Paul.

I think Bill has basically covered the FTE experience. There was a lot of confusion associated with that first year. I think that it is under control now.

REPROGRAMING PROPOSAL

Mr. BOLAND. You submitted a reprograming proposal indicating the Agency's plan to make up the shortfall. Isn't that correct?

Mr. DRAYTON. Yes, sir.

Mr. BOLAND. Isn't it true, however, that if full-time equivalency workyears are short of plan in 1980, the shortfall problem is lessened?

Mr. DRAYTON. Yes, sir. We think that, barring a new freeze or some other external event, we will not be falling short or if we do, it will be by a very small amount.

Mr. COSTLE. A freeze has a very pernicious effect on trying to hold to hiring plans. It slows the whole system down and it takes two to three months to gear back up. When we look at what happened last year, you see the bite of the freeze and the delayed effect in trying to speed up hiring again. It appears that we may be in for a similar problem this year, but at least we can track it now.

Mr. DRAYTON. We have made job offers to nearly 1,000 people since the beginning of 1980. We don't know how many of the offers will be accepted and some of these offers are conditional. However, this is still an unprecedented accomplishment, resulting from a 6 or 7 month concerted effort to deal with our FTE utilization problem. We achieved a net increase of 120 people in the month of January. You can see where that rate of hiring begins to close the gap very quickly.

WORK YEAR FUNDING

Mr. BOLAND. I am going to quote a sentence from the Agency's proposed reprograming letter. "As regards the shortfall on our overall personnel service cost estimates, I have reviewed the Agency's actual use of authorized workyears in 1979 and thus far this year and concluded the Agency as a whole can proceed with only 98 percent financing of the full cost of authorized workyears."

Isn't that sentence admission that fully funding workyears amounts to funding a lapse rate which can then be used for other purposes—or to correct mistakes?

Mr. DRAYTON. Our thinking there is that we are trying to ask our managers to hire at 100 percent. That is the objective we want to give them as a management goal. We are starting from 91 percent at the beginning of this year. We had a long way to go and we knew that we probably could not fully utilize the workyears in 1980, without really overshooting the mark into 1981 because we were starting with a large gap at the beginning of the year.

I would hope that in 1981 and subsequent years we would indeed be managing very close to the 100 percent mark. One of the reasons we consciously decided not to change the targets we were giving our managers is that we want them to be managing toward a 100 percent objective.

Mr. BOLAND. Now if the President proposes or imposes a freeze on hiring in the next two weeks, what would be the lapse that would be saved during the balance of the year?

Mr. COSTLE. It would depend on the duration of the freeze and it would depend on whether exceptions were being granted in such a freeze, and it would depend on what the ground rules were.

Mr. BOLAND. How about filling one position for 2 vacancies or 2 positions for 3 vacancies?

Mr. COSTLE. That is similar to the ground rule applied this last time around, and it caused a significant slowdown. I don't know how we would estimate that effect in advance.

Mr. DRAYTON. We made a very crude estimate. This, you can imagine, was made in the last week or so. We estimated we would save about $4.5 million if it is a 1-for-1 freeze continued throughout the year. That was not the case last year. This is very uncertain because, frankly, it does not fully take into account the rate at which our effort to fill the gap has been progressing in the last 2 or 3 months.

Mr. BOLAND. How many workyears has the Agency funded through January of this year?

Ms. BLUM. We have used thirty percent of our workyears through January.

Mr. BOLAND. And, again, what do you expect the total workyears to be in 1980?

Mr. DRAYTON. We expect to use 97 percent of the 13,587 workyears.

REPROGRAMMING OF FUNDS

Mr. BOLAND. Last year the EPA proposed changes in its 1979 operating plan totaling more than $100 million. Most of the changes were for restructuring and "honest accounting," but true reprogrammings exceeded $30 million. Of course, you are well aware of the Committee's displeasure with the scope of the reprogrammings. While the total amount of 1980 reprogrammings, $17.4 million, is less than 1979, it is still very high.

Mr. COSTLE. We cut it approximately in half in one year, and two-thirds of that $17 million relates to personnel costs. Isn't that right, Bill? One item makes up two-thirds of that $17 million which was for the personnel costs that were just not adequately budgeted for.

Mr. BOLAND. This Committee has provided EPA with liberal transfer authority between appropriation accounts. Probably more liberal authority than any other agency that comes before us.

Mr. COSTLE. We probably couldn't have coped with the kind of pressures on us if you hadn't been that generous, Mr. Chairman.

Mr. BOLAND. Now that you have had a year to adjust to the new appropriation account structure, I think the Committee will probably examine very carefully the need to provide transfer authority in future years.

Mr. COSTLE. If I could provide one general comment about this subject over the last two years, apart from the fact that we have had to adjust to another whole new system—and experienced a freeze—we are putting in place new management accounting systems that will give us a better accounting day to day. We are seeing a tightening of the whole budgeting process. The result is that we get a sharper focus on where the real dislocations turn out to be. It is a hard, slow process, but I think in fact we are making some progress with it.

ZERO BASE BUDGETING

Mr. BOLAND. Your Agency was one of the first government units to implement zero-based budgeting techniques. What about it; is it causing you a problem? Do you think that the time-consuming ZBB process provides adequate benefits to be used every year?

Mr. COSTLE. The first year around it clearly did. It was a brand new system, and nobody was familiar with it. We tried to do it in a way where more people in the agency had an honest chance to participate in the process. I think we paid an enormously high cost the first time around, but I think you probably do with any fundamental change in the way of doing business. I think that the burden this year was considerably lessened, since a lot of the base analysis which had been done the year before was still relevant.

I suspect we cut the hassle factor very significantly. It is still a more complicated system than the one that was used before. But the value of it is that now we have broader participation within the agency, and we know more explicitly what we are doing.

Mr. BOLAND. Could the benefits of ZBB be realized without consuming too many resources by only doing the full exercise every 2 or 3 years? It certainly would require less man-years and less personnel.

Mr. COSTLE. I think as a practical matter it probably tends to work out that way anyway. You don't go back each year and do the entire base as you did the first time around.

Mr. BOLAND. Does everybody agree with this? Would you like to shelf it?

Mr. COSTLE. Feel free to speak your mind.

Mr. BOLAND. Nobody is talking, apparently.

Mr. BECK. Mr. Chairman, I will offer something. I was with the Agency prior to ZBB. I have been on the Agency Ranking Committee for three years as a Regional Administrator and I was with the Agency prior to the ZBB going into effect. I think one of the things that made it very difficult in the first year of the zero-based budgeting was that a lot of the Assistant Administrators were dealing directly with their budget and coming to understand each of the discrete decision units. I think there was also the phenomenon that the entire organization had to understand a new system.

What happened this past year, and I know is going to happen to a greater extent next year, is that the Agency is beginning to pick some big-ticket items that in fact it is going to focus on in greater detail. Two areas that I want to focus on in my program are what we are going to be doing about ground water, because that is an emerging problem, and what we are going to be doing in 1990 in the construction grants program.

I concede that my budget has a whole lot of building blocks in it. We are dealing with a lot of dogs and cats, and those are big moving pictures that we can come back and reexamine. I am one of the longest standing members of the Agency Ranking Committee with three years service. I have seen a substantial change in the system as a result of coming to understand that we overloaded the system in the first year, but we are beginning to see the importance of how you can use the system in the out years.

Mr. BOLAND. Steve, you use it in the research and development program, don't you?

Dr. GAGE. The research and development program is completely run through the ZBB process. I think that, frankly, with the reality of zero-based budgeting review, and the commitment that my colleagues made to the budget decisions that we make in that process, I would not have been able to very substantially change the Office of Research and Development as we have in fact been able to do in the past two years.

The ZBB process gives a very clear unequivocal message to the managers in the agency, because all of the top management has spent the time that they have spent in making those decisions, and we have been able to carry through some very tough management actions to implement the zero-based budgeting review.

I have had to fire close to 100 people in the past two years, and frankly I think the two predecessors in the Office of Research and Development would not have been able to have done that because they did not have uniform management support to the top of the

agency, as I have been able to have through this consentual process that we have been exercising for the past three years.

Mr. BOLAND. Mr. Jellinek?

Mr. JELLINEK. The Office of Pesticides Programs was the Agency prototype before ZBB was instituted by President Carter in the Office of Management and Budget, so the pesticides program provides the earliest experience of applying ZBB to one of the major regulatory programs of the Agency.

I also think that although the first year or so with ZBB certainly had some very painful moments, there have been some positive outcomes. First of all, we are used to the process now and have managed to streamline it so it is not as much Mickey Mouse as it was the first year on the one hand. Frankly, the toxics program has benefited from ZBB, by being one of the programs that has grown in the last two or three years.

On the other hand, I think we have reached the point, as Doug said in his opening statement, where we have squeezed about as much blood out of that particular stone as is possible, and it is going to be very difficult for us to fund major new initiatives from within the agency's base and from reprogrammings.

Mr. BOLAND. Mr. Hawkins?

Mr. HAWKINS. I guess I have two thoughts, Mr. Chairman. I think that each year the process has become less painful, and so we do have a fairly effective working system right now. The second thing, probably more important, is that the process creates high expectations, both at the policy level and the staff level, that budget decisions will be made on the merits. That expectation is very good, I think, for agency morale when we enter into the later stages of the process with Office of Management and Budget. When we enter into that process with higher expectations that decisions will be made on the merits, we often get frustrated, but in the long run, I think, those expectations are going to be communicated to all the actors in the process and it will be a better process.

Mr. BOLAND. How about your experience in New York? Is it easier to do ZBB State budgets than it is the Federal budget?

Mr. BECK. As a matter of fact, one of the things that we tried to do through the State RA agreement—we did the model in New York State and the concept was applied to the other 57 States and territories—was to get in and take a look at the modules of all of our grant monies and what we would buy in terms of environmental protection payback. So there was, in essence, a kind of a follow-through with regard to our grant programs in the ZBB process.

Quite frankly, one of the things that we found, and have had to deal with over the last few years, is that the States initially did not lend themselves to the attitude that we wanted to get in and debate with them some of the priorities for our grant monies. I think that one of the things that we have really stood for in this agency, and especially at the regional level, is to get a lot better accounting and accountability out of what we are making investments in with regard to grant monies. To answer you very sharply, it was difficult.

Mr. COSTLE. Mr. Chairman, the advantage of ZBB is that it is sufficiently thorough—it is almost like a skeleton; under a fluoroscope in terms of seeing where the Agency resources in reality go,

You at least begin to ask questions of what you are really buying for an investment and how that compare with other investments you make.

ZBB GUIDELINES

There are two other pieces that are now falling into place that I think are going to be very significant. Every January the Administrator issues what is called the Agency guidance. In the past, this has been largely a hortatory document. It was sort of an annual rulebook that everybody was supposed to follow. It was supposed to anticipate every situation that might come up in dealing with the States or whatever.

We have streamlined that dramatically so that now it is a very straightforward, relatively brief document that clearly states my priorities and the AA's priorities, which I have explicitly agreed to, in each program area. It states what we want the Agency to try to accomplish this year and where the priorities and the emphasis are going to be. Several things have happened with that document. It is in part a reflection of the budget decisions that have been made from the prior budget round. So now it tracks with the Agency's operating plan, which essentially is driven by the budget.

ANNUAL PERFORMANCE STANDARDS

We are now also using that guidance document as the basis for setting performance standards for personnel in the agency. Under the new Civil Service system, we have to develop explicit performance standards for our senior managers, down to the division director level this year. So we are finally tying together several things all at once: A clear statement of annual priorities of the administrator is sufficiently specific to eliminate possible ambiguity about what it is that we think is important.

Those are then literally drafted into individual performance standards, and negotiated between managers and their staffs. The guidance in turn is tied to the budget process, which is now essentially used as a realistic planning device and not simply an exercise of adding up the columns and rows of figures, to find the bottom number and justifying that. It is, in fact, really an integral planning tool within the Agency, far from perfect but I think better than we were working with before.

DELAY IN CONSTRUCTION GRANTS

Mr. BOLAND. We mentioned the requests that the Administration may make to the agencies and departments with respect to reviewing the 1980 operating plans and the 1981 budget estimates in an attempt to reduce Federal spending. I know that you can't get into particulars, I am sure the OMB doesn't want you to at this time, but it would seem one area that you could probably respond to is whether or not there has been any targeted reduction with respect to the construction grant program.

Mr. COSTLE. Obviously in our case, since that is the big-ticket item in our budget, it is immediately on the table for discussion. Second, since what the President is seeking to achieve here is reductions in actual outlays, it again becomes the relevant place,

because you have to walk back into the whole question of budget authority. In order to achieve relatively modest outlay reductions, you have got to look at the potential of very substantial budget reductions to achieve the outlay reductions.

We will be discussing pretty intensely with OMB over the next several days, whether there is a way to schedule outlays in construction grants so as to accomplish the amount of outlay reduction that the President feels is our proportional and fair share of the total business of trying to come to a balanced budget. We will certainly obligate all of our 1979 monies. However, since we have a two-year window on 1980 monies, we will probably want to try to manage the pace of the actual outlays of that 1980 money between now and 1981, the second year of that window. Frankly, I think it is an opportunity. because one of the things that we want to consider is whether it isn't advisable to come up to the Congress and ask the Congress to extend the allotment period for that 1980 money by a year. Also, I think we finally have to face the fact, as difficult as it is, that we don't have on adequate ability to steer that construction grants money in a sense of priorities. It is allocated basically by formula. It clearly works to the advantage of some States and disadvantage of others.

I met with Senators Chafee and Pell in Providence to look at their problems. At the $5 billion authorization level, you have to push the entire $5 billion through the allotment formula for Providence to get about $26 million, but they are sitting there with a $70 million need, right now, for a treatment plant, and they have got some pretty justifiable pipe projects that will probably add another $70 million. In terms of water quality benefits, it could be significant. As you know, it is an old city and they have a lot of outfalls. They are asking—how under the current system at a level of $5 billion are we ever going to fund these backlogged needs—and it is just one city in Rhode Island. There they are ready to go and you have got other States out there that are dreaming up projects in order not to lose money to the reallotment process. We don't have the ability to steer that money very effectively. I think that what we are going to see is the reality that, in tightening budget times, allocation formulas are less and less satisfactory in terms of the ability to steer money to priority projects that will get the job done. I think we need to face that issue squarely and I realize candidly that Congress is of many minds on that.

I talked to John Pastore and he said,

> Doug, you will never accomplish that unless you make it a $10 billion program and everybody thinks there is something in it for them.

Mr. TRAXLER. I think I am beginning to understand the dimensions of the problems. You have so many funds along the pipeline that it would literally take how long to use this as a means of reducing the budget?

Mr. COSTLE. That is what we are trying to figure out, obviously.

Mr. TRAXLER. What would you do, tell the people who just qualified for step 3, "Sorry, we are taking a piece of paper back"?

Mr. COSTLE. $19 billion, is in step 3 right now, and one of the things I said the first year before this Committee was that EPA's estimates in terms of obligations and outlays in that program never seem to track with reality. We are going to try to do some-

thing about it. For the first time, they are beginning to track. Now the question is, are we going to make some major change in the program?

Mr. BECK. If I can add to that, I think that what we have seen in the program, because it is really reducing in scope, is a clear sense of what the needs are, and we are estimating right now that we are going to have roughly 17 States and 2 territories that are going to run out of construction grant money next year, and there are a potential 9 States that are going to use more than 80 percent. That means there are some States that may have some very high-priority projects that, in fact, we are not going to have money in the existing allocation formula to fund. That gives us a lot of concern.

At the same time, you must begin to look at what has happened with regard to the carryover funds last year, and I understand the Committee was very concerned about this. We actually carried over about $3.9 billion, and at the end of fiscal year 1980 we estimate that we will carry over $2.8 billion and at the end of fiscal year 1980 we will be dangerously low with an estimated $2.3 billion in carryover. When we confront a program like the construction grant program, and look for an opportunity to get some savings in outlays, the way we might get some savings is in some of the States other than those 19 or 28 States which would use most of their 1980 allotments. There are probably some projects in those States that could deserve a little bit more time. They are about ready to go to step 3 but we want to maybe do a little more AWT review or we want to look at something a little bit more carefully, and in that instance, in essence, it holds up obligations in certain States for a period of time, not because they are targeted States but because they are just projects that we could maybe use a little bit more time on.

Mr. BOLAND. About $300 million worth?

Mr. BECK. I haven't picked any number. I don't know whether I am going to get an opportunity to pick a number, and I don't think I want to pick one now, but at any rate there may be certain instances where in fact you might see some projects in certain areas of the country that could deserve a little bit more time, which may more quickly show up in terms of slowing up some outlays. But even in that instance, it doesn't change the total scope of the program, because those needs are still there. Those States are probably going to need it.

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman. I apologize for being late. I was at another meeting, and since Mr. McDade was here before I was, I will yield first to him.

PITTSTON LAW SUIT

Mr. MCDADE. Before I go and vote, let me just ask you if you can tell me, Doug—and I welcome you and your staff; it's nice to see you—is there any new development in the Pittston situation that you can tell me about today? Is there anything you would like to put in the record? I am obviously deeply interested, as you are, in the major problem confronting the country, and I am curious if you can give me a status report.

Mr. COSTLE. I think probably the best thing I can do would be to give you the staff's report for the record.

Mr. MCDADE. Would you do that.

Mr. COSTLE. I am not hedging except they filed suit and we are in hearings and I have to be careful. I think it is easier if I write it out and then we can have the lawyers go over it.

Mr. MCDADE. I know you are not hedging, and I don't mean to imply that. What I would like for you to do, however, is to provide it for the record, and also would you deliver it to me personally.

Mr. COSTLE. I would be delighted to.

[The information follows:]

STATUS OF PITTSTON SITUATION

The EPA response to the environmental emergency at Pittston is still continuing. A final report will be written once EPA's involvement ends. Since July 30, 1979 EPA has been involved with an abandoned mine shaft, from which an unknown discharge was entering a tributary of the Susquehanna River. The Regional Response Team (RRT) was activitated and private contractors were hired to deal with containment and cleanup. Originally, at the Butler tunnel approximately 500–1000 gallons per day of oily sludge were being discharged along with cutting oil, aromatics, substituted phenols, alkyl Resins, dioctylphthalate and short and branched chain hydrocarbons. In August the EPA mobile laboratory from Edison, New Jersey went on-scene and assumed the major workload of analyzing samples. A feasibility study was initiated as to the existence of a "mother lode" of oil/chemicals in the abandoned mine shaft. EPA personnel suspected as much as 500,000 gallons, minimum, was inside the mountain. In late summer of 1979, the consensus was that a long-range cleanup process lay ahead.

The present situation in Pittston is that EPA remains as On-Scene Coordinator (OSC) although intention is to shift total cleanup responsibility to the state of Pennsylvania, using state resources, as soon as discharge flow has been reduced to a minimum. The week of March 11, work crews will start drilling in an attempt to locate the "mother lode" of wastes. Seven wells will be drilled in anticipation of intercepting pools that contain illegally dumped waste. About six weeks will be spent in drilling the wells.

The State Attorney General has initiated criminal charges against Hudson Refining Company, Ag-Met, Inc., and eleven individuals. Trial date is set for March 13, 1980. A Federal legal strategy is being developed. So far $1.35 million has been expended out of an authorized $1.35 million from the Oil and Hazardous Substance Liability Fund 311(k). Twenty-four hour monitoring and cleanup continues. State of Pennsylvania, U.S. Bureau of Mines, OSHA, State Civil Defense, and others are conducting the on-scene operation. The Center for Disease Control; Department of Agriculture—Forestry; Corps of Engineers; and the Food and Drug Administration are also assisting. There will be an On-Scene Coordinator's report, covering all of EPA's activities regarding this incident, written at the conclusion of all operations. This report will be made available to all interested parties.

AMBIENT AIR QUALITY STANDARDS

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you very much, Mr. Chairman.

I do want to welcome the distinguished administrator and his distinguished deputy here, and again apologize for being late.

I would like to zero in a little bit on one problem that is very important to the Northeast and my State in particular and other States in the Northeast, and that is the problem of ambient air quality standards and the regional problems that are involved in this. Pennsylvania and other States in the Northeast are heavily impacted by the problem of having air pollutants from areas presumably at least, to the west.

This also creates a great problem as we try to convert in other parts of the country and the Northeast from oil and gas to coal, and our utility boilers and in other areas. It is something that needs a very swift movement, I think, on the part of EPA to develop some kind of approach to it. It also goes to the acid rain problem.

ACID RAIN

I wondered if you could describe what is taking place, and how soon there might be some approach to this whole question. There seem to be disputes as to whether we have the factual data to go into this or not. What is EPA doing in this regard?

Mr. COSTLE. I really appreciate that you have asked that question, and I would like to take the opportunity to answer, and I am going to ask Dave Hawkins to jump in and elaborate at any point. It is a little bit complicated.

Under the existing Clean Air Act, the basic mechanisms for controlling ambient air quality concentration is for the Federal government to set a standard that says so much stuff can be in the air, and it is not unhealthy as best we can understand it. Then that standard is given to each state which in turn develops a State Implementation Plan. They go back and they inventory all the sources. They measure what is actually in the air and they say we have got to get from where we are now back to here by requiring sources in some fashion to reduce emissions, in order to comply with that ambient air quality standard. Our job then becomes certifying that in their best judgment the SIP will achieve that result. You can see the kind of partnership with the States it automatically creates.

The air quality standard that we set for sulfur dioxide, is primarily concerned with ground-level concentration within air quality control regions, These are areas within proximity of the source of sulfur oxide, where we expect the heaviest fallout to be. The standards are set primarily on the basis of human health.

In a way, it has been a successs story because there are only now, to my knowledge, two cities in the entire United States that are not now meeting the ambient air quality standards for sulfur dioxide that were set to protect public health.

When pollution goes out of a stack, say in a part of the TVA system in the Midsouth, and we did not understand this when we set the ambient air standards back in 1970, a portion of that plume is going to travel 500, 600, 800, maybe even 1,500 or 2,000 miles.

It is conjectural in a sense. We clearly know it may travel between 500 and a 1,000 miles. Basically, what happens is that plume diffuses, and if you can hold a lot of variables like terrain, height of stack, weather patterns, particular meteorology, et cetera, constant and take all these into account, the average life of the sulfur emitted from that stack is roughly 3 days or 300 miles of travel in the atmosphere.

Put another way, half of the sulfur emitted in that plume is going to fall out within that period of time, so you are left with a tail from that plume diffusing, and you still get continued fallout but at a lesser rate. The point is that some portion of that plume emitted at a power plant in TVA can, depending on the meteoro-

logical conditions, fall on Massachusetts. It comes down in the form of acid deposition. It comes down in one of two ways: It either comes down in a wet form as snow or rain in which you have created very diluted sulfuric acid, or it comes down to the ground in dry weather in a dry form where it gets turned into acid in the next rainfall.

The effect is basically the same; that is, it gets into solution, gets into the soil, and begins to do a number of things. Most of the studies on this have been done in Norway and Sweden, but we are increasingly studing the problem in this country. There are studies in the State of New York—Cornell University is one of the leading centers—and North Carolina, to name only two scientific centers.

The effects that we know the most about fall into three categories really. The first one is the effect on materials. The Parthenon is now, among other things, gradually being changed from marble to gypsum, primarily because of the effect of acid rain. We know that it affects monuments. There is an obelisk, for example, in Central Park in New York where the hieroglyphics on that monument now are virtually obliterated. At almost the same time they put one up in London but they coated it with wax, and the contrast, the relief on the hieroglyphic system is very obvious.

The second effect is terrestrial; that is, the effects on the soil. Scandinavian studies and some of our own indicate that this acid rain will leach nutrients out of the soil. It is very hard to pinpoint that effect, because in our agricultural areas we are so used to putting nutrients into the soil, then offsetting acidity with lime so that you maintain a certain pH balance, depending on the kind of crop you are going to grow. The effect is to mask whatever long-term changes are going on in soil characteristics in cultivated areas as a result of acid deposition.

We have done studies at Corvallis, and found that some crops grow better with simulated acid rain. Other crops clearly do not grow as well. Acid rain can spot apples. It can, in sufficient concentrations, put holes in certain leafy plants like spinach, and we have documented changes in yields. The whole phenomenon has been sneaking up on us over the last several years, but the scientific literature is growing, and growing rapidly.

The third effect, which is the one that we are now most concerned about, probably because we know the most about, are the effects on aquatic systems. What tends to happen is that acid deposition, acidified rain, once it is on the ground gets carried in solution and leaches metals out of the soil and bedrock. There is a metal ion exchange. Those metals, in turn, are transported into the groundwater systems. They run into surface waters, and they get into surface water impoundments; i.e., the lakes in the Adirondaks. It begins to change the fundamental chemical foodwebs within that lake. It affects the larval stage of fish and can stop reproduction. It encourges the growth of certain kinds of aquatic organisms to the disadvantage of others. You get a gradual acidification of those lakes, and eventually they die.

We don't know exactly at what point you hit overload, but we know that we are losing lakes. The Canadians have taken a very strong position on this. They feel that they have as many as 50,000 lakes that are in jeopardy in Ontario alone, mainly because they

are frequently downwind of our major industrial sources. We did a study of the Ohio River Basin using the universities out there to try to get a better handle on emmissions and long range transport.

We have some satellite photos which I can make available to the Committee that show the development of a stagnation eposide over a 12 day period, where you can see the buildup of the sulfate cloud, and it just gets dense more and more. These tiny sulfur particles that go those long distances also are so small that they have a very high light scattering effect. A good part of the visibility problems in the East, the low 6-to-8-mile visibility we have grown accustomed to, is attributable to these man-made sulfates and nitrates that are in the air. They diffuse the light, and therefore you just don't see the same distances as we did 20 or 30 years ago.

What does that really mean? It tells us, among other things, that the current ambient air quality standards do not provide protection against these phenomena. It tells us that New England is substantially disadvantaged in that they tend to be predominantly downwind from the Middle West. It tells us that we have got a real problem that we are going to have to find an answer to.

The only answer to that problem is to eventually reduce the total loadings of sulfur emitted into the atmosphere. What is happening is that the tail of that plume from that one power plant, in the mid-South or mid-West, by the time it gets over to Connecticut or Massachusetts, has merged with literally thousands of others, plus whatever emissions are coming from New England sources.

Mr. COUGHLIN. So, in addition to the harmful effect it has itself, it disadvantages those States in terms of meeting their own air quality standards, in terms of the amount of emissions that they can have, and comply with air quality standards. They are affected by emissions coming in from other parts of the country.

Mr. COSTLE. To date they have not been effectively penalized for that, because we try to make allowances as they are told to develop their plans for what they inherit and can't therefore be held accountable. We are essentially treating that as kind of a separate phenomenon in order to try not to disadvantage these States.

Down the road there is no question that an equity issue gets raised. When we get to the point where we are smart enough to set an ambient standard which takes acid rain into account—and mind you again, the key point in all of this is that the existing standard does not take it into account. There has to be some equity worked out between the Middle West and the Northeast. What you may have is allowable sulfur limits in Ohio and Indiana and the Middle West that are sufficient to protect ground-level breatheable air in Ohio, and legally meet the existing air quality standard, just as Massachusetts can legally meet their air quality standard. But then there is this inherited tail that doesn't come down in Ohio and therefore isn't measured. Thus, it subsequently becomes a problem for New England.

COAL-FIRED PLANTS

I don't think anybody questions either the need or the desirability of going to coal, particularly for utility generation. I have consistently publicly said we should go to coal. I don't see any

environmental reasons why we shouldn't be able to go to coal. The bottom line is that you have got to control it—not the rate at which you use coal but the kind of controls which you should put on coal-fired units to be sure that what finally comes out of that stack will not harm air quality and water quality. This is what the whole debate is about.

When we set the new source performance standards for new power plants last year, we probably did more in that one single stroke to insure that we are going to burn more coal. To be sure, we have permitted 85 new power plant units as a result, since that decision. New power plants are almost as clean as clean-burning oil-fired power plants. The public doesn't accept that fact yet or fully understand it, but I think they will as time goes by and they see them in operation. It proves to me that we can strongly and confidently move to coal.

Those new power plants won't substantially increase that total loading problem. Indeed, if we held everything else constant right now, over the next 30 years, which is a long time, there will be declining sulfur oxide emissions in the mid-West, where they are now very, very high as plants come into compliance with SIP regulations and older plants are retired. Because nearly all of the existing plants in the Middle West are either poorly controlled or not controlled at all, because they are effectively grandfathered under the Clean Air Act, that is where the big emissions come from. That is where our current problem really comes from.

Over time, the boilers get old and they tend to become less efficient, so utilities may take them off a base load and replace them with a newer plant, in some cases by nuclear, and in some cases by new coal plants. That newer plant is so much cleaner that you get a very significant increment of reduction every time one of those old clunkers is taken off the line or even put under some kind of control.

We pointed this out to the Canadians. The question they raise with us is: All right, if you can hold everything else stable and you can project a gradual decline in emissions, our question to you, United States: Is that declining rate of emissions going to decline fast enough to save our lakes?

A good question. We don't have a good answer to that. The odds are we are going to have to find ways to get more sulfur out of the air and reduce sulfur emissions. The only place you can do that is with existing power plants which produce most of the emissions.

That brings us to an immediate crunch. Utilities have adamantly refused in the Middle West to put scrubbers on all except new plants. The scrubbers allow you to burn even the dirtiest coal in this country and burn it cleanly. They have said that it would be cheaper for them to buy low sulfur western coal. Partly, the economics depend on how long these plants are expected to operate, as well as the costs of coal from different parts of the country. I think the operation of the fuel adjustment clause has a lot to do with this since our studies show in most cases that it is not necessarily cheaper to use low sulfur coal.

In other words, the utility financing structure and the way their state utility regulatory commissions act, encourage utilities to reduce their emissions by buying low-sulfur coal. This is not what

they mine in Ohio, and so these miners worry that they will be thrown out of work. The utilities are not going to put scrubbers on, and they say you can't force us to, so you have a real dilemma in how you go about achieving reductions in the Middle West.

COAL WASHING

Mr. COUGHLIN. You can achieve similar reductions by washing the coal, can't you?

Mr. COSTLE. That is one of the options we are looking at. About six months ago—I had a sense, and I think I am correct, that by the time the Congress gets around to the next round on the Clean Air Act, it will probably be calendar year 1981. The issue on sulfur isn't going to be public health. I think we will have essentially won that battle. The issue will be how much can we reduce emissions from existing sources and at what cost. So I directed David Hawkins and Steve Gage and their staffs to start looking at a range of options.

In some cases, early retirement of older, higher emission plants could make a big difference and our projections clearly demonstrate this. We are also looking at what we can gain from coal-washing.

Mr. COUGHLIN. Can you mandate the washing of coal?

Mr. COSTLE. I think that is a close, legal call under the Act. In all probability we can't. We are not going to know that until we actually try it, I suspect, we will wind up in court in litigation. How much would we get from coal-washing? There is some evidence that the industry may be eventually moving in that direction anyway, shipping costs and, transportation costs are getting so high that if you can wash that coal to remove a lot of dirt, you will reduce shipping charges. So there may be some incentives over time to use coal washing. We haven't yet had a chance to calculate the difference that would make.

Maybe you put scrubbers on some selected plants. We are investigating these options. We need time to try to pin that down so that it can be debated during the discussion of the next Clean Air Act. I suspect what Congress is going to want to know is what additional reductions can be obtained at what cost and what are the various ways you can do it. There may even be some promising technologies coming along.

I told you last year when I was here about a new NO_x burner design for both utility and industrial boilers. We are experimenting to see if you inject dry limestone into this new NO_x burner at the same time you get not only the 80 percent reduction in NO_x emissions, just by a burner-type redesign, whether you might in addition get 75–80 percent sulfur reductions. In that case, you wind up with an increased particulate collection problem in terms of the limestone.

Mr. COUGHLIN. There is some indication I heard that EPA has on the desk now some program that would permit further emissions in the Middle West that would exacerbate the problem.

Mr. COSTLE. What we have now is a difficult situation involving two things. We are under legal challenge on our modeling to ensure compliance within air quality control regions, which are these relatively discrete, usually within one State, pieces of geography

wherein we measure what people breathe. This is one set of issues, whether our models are adequate in performing their regulatory functions, or where they may be either too generous or too lenient on their technical assumptions.

Basically, what I have said is that we need to have a rather serious national discussion, and states, like Ohio and Indiana and the rest of Middle West have to be involved in that. We started that process. We have not come to any final conclusions on it. At the same time, we can begin to look at how effectively we can enforce compliance on existing power plants. Right now we do it by using stack emissions tests, which because of their nature are performed infrequently on any individual source. We may need to go to continuous monitoring. That is one issue.

The other issue that will be coming before the Congress very shortly is the proposition that has been sponsored by the coal-producing states, that would mandate conversion of coal-capable plants in the Northeast, and this may mean Pennsylvania, New Jersey, New York, as well as New England, where you have got a coal-capable plant. This will be coming up shortly when DOE, would propose essentially a plan to give grants to the utilities to help them cover the costs of conversion, and the cost of putting in coal-handling facilities, and the cost of putting in environmental controls.

Mr. COUGHLIN. I am still not quite sure what the plan is on your desk which would leave existing plants.

Mr. COSTLE. That is the next part of this little syllogism. Basically what would happen, under the existing ambient air quality standards, because it doesn't take into account acid rain in that standard, you could legally increase emissions in substantial parts of New England, and still stay within the health limits. Coal conversion would have that effect.

The issue becomes, if you convert a plant in New England to coal, how stringent should the controls be that you put on that plant? Under the existing situation, you could convert those plants, put some controls on them, still allow an increase in emissions, and still stay within the ambient air quality standard.

The dilemma, and it is frankly a dilemma right now without a good solution, is that by increasing emissions in New England, we think that the present coal conversion plan would increase emissions by 25 percent which is not insignificant. That is a big jump and you will in fact increase the acid rain problem in New England, even though you might not violate the health standards. Again, it comes back to the point, you remember, about the footprint of that power plant plume—that half of it will fall out essentially within the first three days or 300 miles—so that in effect a new pound of pollution in New England will have a large direct effect on acid rain in New England. In addition a pound of pollution emitted in Ohio would also impact New England, but you have lost a lot of that pound in transit from Ohio. Of the 25 percent increase in emissions in the Northeastern States under a coal conversion plant that went up to the allowable coal burning SIP limit, two-thirds of those emissions would come down on land in the Northeast, and in Canada.

Some of it would be transported to sea, but we think a full two-thirds will come down on the land, and that would represent roughly a 10 to 15 percent increase in acid deposition in the Northeast and in New England. The principal source, of course, would be the Northeast, in New England itself. All of that is perfectly legal under the existing Clean Air Act.

I think the point is that the existing act doesn't effectively deal with it, unless we were to change the ambient standard to take into account acid rain, and the question there, given the legal burdens of proof we would have to meet in court in testing such a standard, do we know enough about the mechanics of transport and modeling to be able to write an ambient standard for acid rain? And I think the answer right now has to be we really don't.

I ought to give, at this point, David Hawkins and Steve Gage, who are responsible for acid rain research, a chance to correct any mistakes I may have made or to add anything they want.

Mr. HAWKINS. Just to pick up where the Administrator has left off, while today we probably don't have adequate research completed to be able to go into court and defend any particular number associated with an acid rain standard against legal attack, against arguments of why didn't you pick this number instead of that number, our sense of the evidence is that we know enough now to know that the total loadings of the atmosphere are responsible for the problems that we do have, and that the problems we do have are substantial enough that we ought to be looking for effective ways of reducing total loadings of the atmosphere without tying that activity to trying to find exactly the right number of where we ultimately want to wind up.

Mr. COSTLE. Or trying to tie that number to a specific emission number for specific stacks, which gets to be horrendously complicated.

Mr. COUGHLIN. Mr. Chairman, I will have further questions along these lines. I guess I can reserve them for later in the hearings. I do have some other questions but I will yield at this time.

Mr. BOLAND. Thank you very much for that dissertation on acid rain. I will be meeting with the Canadian Parliamentarian later this year. That of course is one of the questions that came up last year when we met with them up in Alberta. It is a very serious issue with the Canadians.

Mr. COSTLE. Very serious.

Mr. BOLAND. I won't have the answers for them, will I?

Mr. COSTLE. I think you will be in a position to have a pretty frank exchange.

Mr. BOLAND. I am more concerned about the answer I give to my own people in New England.

Mr. COSTLE. I think that is the dilemma. I think just in simple terms the answer probably is if we allow emissions to increase in New England, it will clearly make the problem worse. You probably can't count on offsetting that increase entirely by commensurate reductions in the Middle West, because you would have to reduce in the Middle West probably by several times that amount in order to obtain a commensurate offset.

Right now, in New England, somewhere between a third and a half of New England's problem is caused by their own; emissions; that is it is self-generated, but at least a half, and maybe as much as two-thirds, is imported, the acid rain thing, and at this point scientists can't tell us effectively how to set a standard.

Those are just the hard facts and it becomes an issue, I think, that we are going to have to get further reductions. Clearly, those reductions have to come to a degree in the Middle West. How much can we afford to let the emissions go up in the East without having to come back 3 or 4 years from now and, determining that the calculations we made are in error, we had better do something else about it. How do you equitably distribute that burden around the country? How do you build in flexible ways to accomplish that job without throwing people out of work, or without creating real economic dislocations.

I think there are answers to those questions, but I think those questions deserve more thoughtful answers than we are smart enough to give today, but we are working flat-out on them. I appreciate the chance to have explained this to the chairman, because it is relevant to New England, and it is probably the toughest problem that we are working on right now.

Mr. COUGHLIN. How long do you think that it will take before you can shed some light in this area?

Mr. COSTLE. I think there are some things that we know we can say right now, and I am basing this on some of the leading scientists in the field. They are saying, at least with respect to the aquatic effects, we now know enough to know we should not be making the problem worse, and it is about time we start thinking of ameliorating steps. That defines the problem for us in a little bit more sensible terms, in that now the question is, "what reductions could we get, by what means, at what cost?" so that we can come to the Congress and say here are the range of alternatives that we have for fixing this problem.

COAL WASHING

Coal-washing is one of those options. Earlier retirement of older plants may be another, also load management. There may be a range of things plus emerging technology. If we can demonstrate this new NO_x burner with limestone injection and we find that it does have potential for reducing sulfur at the same time, it has got obvious possibilities for retrofitting on about half of the existing, now largely uncontrolled, power plants in the United States, with dramatic reductions at very little cost.

I think the dilemma, put very bluntly, that the Congress will come to grips with, is the low-sulfur versus high-sulfur coal issue that will bedevil everybody in the Clean Air debate. The utilities will say it is cheaper to just go out and get lower sulfur coal, and I think that if you are a miner in Ohio, that is sure not an acceptable result. If you are a miner in Ohio, scrubbers are a better answer, because at least then you can burn the coal that you have there. The economics of that is that we manage to get through the new source performance standard exercise in a pretty sensible way on that, but I think the issue is going to keep coming up as long as

we are dealing with such a high degree of variability in the sulfur content of coal.

The important thing from my perspective is that I am now convinced that we don't have to rule out any coal in this country, that there is technology available to use it cleanly. That even if you put coal together with scrubbers, it is cheaper than oil. We saw one study of two power plants in New York, where if you were to convert to low-sulfur coal with dry scrubbing, the option we gave the West, you could still save something on the order of $260 to $280 million a year of annualized cost over oil.

There is an economic incentive right now, I think, for the utilities to go on to oil. There is a very real problem associated with the ability of utilities to go get rate increases from the public utility commissions without getting beat up by the public and their having to borrow money at, about 12 to 16 percent, so they have got a legitimate problem.

How you fix that problem is a more complicated issue, but I think basically there are some things we know. We know the technology, of controlled coal burning, so that we don't have to hold that up, delay it, or put it off. We just have to be careful that we are going to hold the environment harmless and not make existing problems worse while we are trying to figure out an equitable national solution to what is a very national kind of problem.

Again, I appreciate your forbearance, Mr. Chairman. It is a pretty important issue.

Mr. BOLAND. Mr. Traxler?

GRAY IRON FOUNDRY HAZARDOUS WASTES LIST

Mr. TRAXLER. Thank you, Mr. Chairman.

Mr. Costle, I would like to discuss another issue, but one of great importance to the area I represent. It is only coincidental that I represent the largest foundry area in any one given five square miles in the world. Your Agency has taken certain action under the Resource Conservation and Recovery Act. I notice Mr. Beck is moving up to the edge of his chair——

Mr. BECK. You said gray iron foundry and my ears perked up.

Mr. TRAXLER. I hope you will twitch a little too.

Mr. BECK. That happens, from time to time.

Mr. TRAXLER. What we are concerned with is your decision in November 1979 to list the lead-bearing wastewater-treatment wastes from the gray iron foundry as toxic. On the surface, most citizens and environmentalists will say that it is obvious, as plain as the nose on the end of our faces, that lead can be a toxic substance. Really what I want to walk you through is the process by which you arrived at that preliminary decision.

I want to first of all ask, have you found any reason to reverse that decision as of this point in time? That may save us a lot of time.

Mr. BECK. The decision on whether that waste will be regulated and in what quantities will be made before April of this year. We presently have a draft development document out, which is discussing the substance of that.

Mr. TRAXLER. Is that document, number 250-14, Hazardous Waste List?

Mr. BECK. I think that this may have been the original document. There were several reproposals of this, and we are substantially revising a whole bunch of the development documents as a result of public comments. There may be some—I can check the codification of this, though, and give you information about whether it is this one.

Mr. TRAXLER. What I want to be sure of is that this listing is not an off-the-wall determination based on some kind of criteria that has no applicability to this situation. I guess what I want to know is, what test results have there been to demonstrate or lead you to make this preliminary listing?

You have told us you are going to make a final decision in April. I am concerned that you might go down the same road that you have been on that got you to the preliminary listing. I want to know what is there in the background documents so far that have established preliminarily in your mind that this waste is toxic and hazardous? Bear in mind that what we are talking about here is some 200,000 tons of a potential toxic waste listing and imagine in my State we have no toxic waste facility at all.

Mr. COSTLE. Very few States do.

Mr. TRAXLER. And we are talking about the nearest facility being hundreds of miles away and transporting each week hundreds of tons of this sludge waste which, incidentally, has come about because the industries are complying with your clean water law.

So I would not want anyone to think that the industry is not concerned about complying with environmental requirements. I don't want to tell you that they joyfully do so, I am just saying they legally do so. And I am sure you insist upon it.

This particular waste comes about primarily as a result of compliance with the Clean Air Act. But you may be requiring the industries across the United States to dispose of over 200,000 tons of this in toxic waste dumps, that we don't even have, when it is unnecessary. I don't think anyone wants to see a waste which is indeed toxic wandering about in our environment where it can do incalculable harm to our citizenry and other life forms.

So what I am really troubled about is that candidly I think what happened here was that there was not a valid determination of toxicity. I think you have a lot of people going around the country now looking at waste dumps and you may not have enough personnel looking at whether a waste is truly hazardous. I think what might have happened is that you reached out and said that lead is dangerous, especially if it is in water, and if you take it out of water in a sludge, it is still dangerous and the only way you can dispose of it is in a certified toxic dump.

There are some reasons why that rationale does not hold up. What I am going to ask you to do is to determine whether or not this kind of a waste is soluble because I think that is the question. Is it really going to leach out into the ground water system? You have some data from the clean water division that says there is lead in the sludge. But remember, this lead has already been precipitated out of the waste water with coagulants and it is surrounded by coagulants which puts it in insoluble form.

But you gentlemen are the experts down there—is lead always soluble?

Dr. GAGE. It depends on the forms, the valence and chemical species with which the lead is bound up. The Office of Research and Development as well as the Office of Toxic Substances is working with the Office of Solid Waste at this point to review each and every one of the listing documents which were prepared.

I know I am taking words out of Chris' mouth here, but this is a very massive effort within the Agency and I think Chris probably is the only one who has some sense of how many additional man-years of effort we are expending on that.

Mr. TRAXLER. But remember what happens, by listing this as a possible hazardous waste, it now appears on the States' lists positively. When you change your mind, and I trust as a result of a good scientific effort you will, it means that the industry then has to go to each and every State and they have to ask that it be delisted. So just by tentatively listing it you have caused immense harm to the industry.

So I want to ask you to please take a hard look at your extraction procedures, if you have such a procedure. I know you have worked on that and you have had some problems in developing an extraction procedure. Do you have one yet?

Mr. BECK. That is one of the things we are developing right now for the final regulations. I would like to point out that in our budget we are requesting a $6.4 million supplemental under waste management regulations, guidelines and policies. The purpose of that is for additional waste evaluation of the 222 wastes that we listed as part of industry-by-industry waste evaluations.

In part, it was a matter of us coming to understand, as a result of the regulations that we had proposed, that we needed to do some more extraction procedure analysis, the very thing that you are asking for us to do.

Mr. TRAXLER. The problem is we don't know whether or not you are going to get a 1980 supplemental. In the meantime, you are facing an April deadline. Have you looked at the extraction procedures and the results obtained, for instance, by General Motors in their testing of foundry sludge?

Mr. BECK. I have not looked personally at General Motors.

Mr. TRAXLER. I think they submitted information.

Mr. COSTLE. I think you put your finger on a very important problem we are going to have. What you find in this business, apart from the specifics of lead which I don't know, is that you can have some very toxic wastes that under almost any set of circumstances are going to be tough to handle and will require some special handling.

Then you find a class of wastes which, if handled with sensible good engineering practices, you have wastes that can be handled relatively innocuously if handled right, but can be a problem if handled wrong.

Mr. TRAXLER. That is correct.

The Act allows a tremendous amount of discretion on a plant-by-plant basis and indeed a substance basis. You can classify it as a nonhazardous waste and still say how it should be disposed of.

Mr. COSTLE. We are legally obligated to publish a list. It is probably impossible to take the entire universe of chemicals and hazardous wastes and develop documents that say if you handle it this way, it is OK, and if you handle it that way, it is not.

We don't know the universe of wastes that we will regulate. I have been looking at the listing procedure essentially as a way of saying, here is a chemical or a known molecule that could be hazardous if handled improperly and we want, if you have this in a waste stream, to know what you are doing with it and does that make sense. If it doesn't, what changes have to be made?

But then what are the specifics of individual sites which ought to be a State function in terms of how well it is in fact being handled. I mean, sure, if you list a dioxin you want to know in excruciating detail how it will be handled, but if you are listing perhaps a waste like you are talking about, that is only a problem if it is handled wrong. All we want to do is make sure it is being handled with reasonably good sense.

Mr. TRAXLER. Based on your own criteria, the tests that have been done so far by the industry using recognized extraction procedures indicate that the listing as hazardous and toxic is unwarranted.

What I am trying to determine is how it came preliminarily to be on your hazardous list when I am told you don't have a procedure as yet for determining what is hazardous?

Mr. COSTLE. There has been a debate about extraction methods and there have been many cubic feet of comments we have gotten on that.

Mr. BECK. Seven linear feet.

Mr. TRAXLER. And you had a real expert assisting you in developing the extraction process until he got up to the finish line and then you ignored his findings.

Mr. COSTLE. I am not familiar with that.

Mr. BECK. I am not either.

Mr. TRAXLER. He is from the University of Wisconsin. He had a contract with you and he is well respected in his field.

Mr. COSTLE. But in any event, the bottom line, I think, is that the object is to get a working list that says, here are some things that if they hit certain criteria of flammability and toxic, et cetera, ought to raise a caution flag in everybody's mind.

If you can come back and show us that it doesn't make sense in this case or that the problem is a nonproblem, then you may not want to de-list the chemical, but you may want to make that judgment on the particular disposal facilities being used.

Mr. TRAXLER. Just listing it in a preliminary fashion causes all kinds of problems in terms of what States are going to do with that waste.

Mr. COSTLE. We want to have them look at it.

Mr. TRAXLER. Once you decide on a second go-around that it is not hazardous——

Mr. COSTLE. Suppose you are putting it on top of an acquifer in Illinois——

Mr. TRAXLER. Or in my backyard, which would be the worst of all possible places if indeed it is soluble. What we are talking about here is whether or not it is soluble. It seems to me there ought to

be some fairly objective standards by which that can be determined. I regret to advise you that that has not been the case so far. There has been a determination made on a preliminary basis that I hope will be carefully reviewed in terms of objective scientific procedures.

I don't think that is a real big thing to ask. We are talking about over 200,000 tons of wastes, and I don't think we have that many dumps in the country that could handle that for more than one year. You may be creating the worst problem you have ever had.

Mr. COSTLE. Where is it going now?

Mr. TRAXLER. On top of sanitary landfills.

Mr. COSTLE. That may be all right.

Mr. TRAXLER. Sure. What I am asking you to do is very carefully, scientifically, make a determination using accepted procedures.

Mr. BECK. That, we should do and we will do.

Mr. TRAXLER. That is all I ask. But bear in mind, if it takes you beyond April and if you have other data indicating that the lead is insoluble, what I hope you would do is not put it on the list. Finish your testing first because you can add it to the list anytime you want. If the other data looks good to you, if it seems valid, don't list this waste until you have completed your own inquiry. I would hope these foundry sludges would not appear on your list because you will needlessly fill up these toxic waste sites very quickly with over 200,000 tons a year and you will cause immense problems for small foundries across the United States. I hope you bear that in mind.

Mr. COSTLE. I will. I will personally take a look at that.

Mr. TRAXLER. Thank you, Mr. Chairman.

OZONE STANDARDS

Mr. BOLAND. Mrs. Boggs?

Mrs. BOGGS. Thank you, Mr. Chairman.

The Clean Air Act, of course, in authorizing a national program of air pollution research, regulation and enforcement gives primary responsibility for prevention and control of air pollution to State and local governments, but with a strong mandate that EPA takes action where the States do not fulfill their responsibilities.

EPA has conditionally approved Louisiana's revised plan to meet National Clean Air standards by 1982. New Orleans is one area in Louisiana that fails to meet the ozone standards set by EPA.

According to the regional administrator, Louisiana should meet the standards by 1982 but "the attainment strategies have very little margin and we will closely monitor compliance with the standards as the plan is implemented."

The State's plan for urban areas that did not meet ozone standards provides for greater ozone level reductions than those needed to meet the Clean Air Act requirements because, of course, this allows for growth in urban areas.

ANTI-TAMPERING PROGRAM

Last year, Mr. Administrator, you said that EPA would increase efforts to assure that cars meet emission standards while in use to

deter tampering and fuel switching and to concentrate resources in areas with the greatest problems.

Have you made substantial progress in this area?

Mr. COSTLE. We are beginning to. We have been trying a series of actions around the country on tampering. In fact, you may have read in the area newspapers that we filed $1 million worth of claims in the metropolitan area of Washington, Virginia and Maryland where there has been wholesale, deliberate tampering. We are getting that program under way nationally with a potential, I think, of a very substantial net benefit.

We have been really preoccupied this year with trying to get these revised SIP's processed and approved.

VEHICLE INSPECTION PROGRAMS

David, maybe you would like to comment on the Louisiana SIP in particular.

Mr. HAWKINS. I think Mrs. Boggs has accurately characterized the status of the Louisiana SIP with conditional approval. I might mention a couple of items about what we are doing about in-use vehicle problems. The keystone of the national program is to insure that in the areas with the worst problems we have a vehicle inspection program that will make sure that you, me, and all our neighbors do keep our cars in operating condition so they do run cleanly.

We have 29 States which need legal authority and of those 29 States, 22 have already adopted that legal authority to be able to proceed with vehicle emission inspection programs.

The second item, in those areas that are not doing emission inspections, is that new cars now have a limitation on the kinds of adjustments that can be made to the key emission control components. Basically, we require the manufacturers to show that anything that is adjustable on their car, if it is adjusted within the limits that are capable of being physically adjusted, that the car will continue to meet the emission standards.

In other words, when they present a car to us, we take a screwdriver and juggle various screws and we test it again after we have adjusted it the way a mechanic can. If it can't meet the standards, it doesn't get a certificate. This should help a lot with the inadvertent misadjustments.

The third area is that we have a very active several million dollar program of surveying in-use emissions from motor vehicles so that we have an up-to-date data base and can spot trends and try to feed back into our new car programs when we spot those trends.

We are looking at a number of changes to our certification program to try to insure that we will improve our ability to predict in-house performance, especially focusing on the kind of maintenance we allow the manufacturers to do when they are preparing cars for us to be tested and then the enforcement activity that you mentioned in your question where we have continued to undertake tampering violations and fuel switching complaints. We have been investigating that and have taken cases where there have been mis-fueling problems.

Mr. MILLER. Let me add that we have substantially beefed up our enforcement on tampering and the gasoline areas. We are increasing our inspections for tampering fivefold over 1979 and our enforcement actions will increase commensurately. In fact, we initiated an action against the SEARS fleet in Louisiana about two weeks ago for using leaded fuel and leaded gasoline in their cars. It was a very substantial action.

Mrs. BOGGS. Do you think that all of your initiatives will indeed satisfy the problems that are in the marginal urban areas so that they will be able to meet the Clean Air Standards by 1982?

Mr. HAWKINS. Well, Mrs. Boggs, we think that we have tried to assign as much of the burden as we can to manufacturers to produce vehicles that are designed to run cleanly, but we also recognize that in the hands of the consumers who are not trained engineers and in the hands of mechanics who unfortunately in the past have not been trained to deal with emission consequences of their adjustments, that things can go wrong.

It is because of that, that we are focusing major efforts on the motor vehicle emissions inspection program because for the first time what that does is create an institutional interest among service stations to see that their mechanics are trained not only to tune cars so that they get maximum acceleration, but to tune cars so that they run cleanly.

Of course, with the price of fuel we are now seeing an incentive to tune cars so they get good fuel economy. I am happy to say that the current technologies for tuning that you have to do to get good fuel economy are the same as the cleaning you have to do to get good emissions performance.

TRAINING ON CAR MAINTENANCE

Mrs. BOGGS. This had not occurred to me until just now, but the training programs are extremely important. There is, as you well know, a movement throughout the country for people to learn how to care for their own cars. It is particularly true even in the Congressional Club, Mr. Chairman. They have a course in how to keep your own car running and how to tune your engine, et cetera.

Programs in the consumer field such as that, are they getting any kind of instructions from EPA on the training for cleaner emissions?

Mr. HAWKINS. We have two programs. First, we do have informational brochures that explain to the average driver the importance of having the car well maintained.

Secondly, and much more extensively, we have a very large contract with the University of Colorado to train a large number of mechanics and to actually establish training courses for mechanics around the country in maintaining vehicles so that they do get good emissions performance.

STATE ALLOCATIONS FOR MOBILE SOURCE PROGRAM

Mrs. BOGGS. Do you think that you have enough added money in the budget this year for mobile source abatement and control?

Mr. HAWKINS. We don't actually have an addition in the budget this year. We have a reduction. That reduction is certainly one of

the hard choices that the Agency had to make in order to do the kind of reprogramming that was necessary to support initiatives that the Administrator has spoken of.

We will be able to carry out our major tasks under that legislation and we will be able to deliver a good quality program in the mobile source area with the resources that we have in this Presidential budget.

Mrs. BOGGS. I noticed that you do have an increase in abatement and control programs in the States. Do you think that funding will be allocated to States such as Louisiana that have not yet complied with air standards in a more generous way than those that already have?

Mr. HAWKINS. Our formulas for allocation definitely include a factor for population exposed to high concentrations of pollutants and the degree of exposure so that areas with severe air quality problems tend to justify a higher allocation than those areas with fewer people and fewer air quality problems.

Mr. MILLER. I think it is important to note that a large part of that increase in State grants is specifically earmarked for State anti-tampering and anti-fuel switching programs which go to the heart of what you have been concerned with.

Mrs. BOGGS. That is good. Thank you.

ALCOHOL-BASED FUELS

In my other Subcommittee this morning we were talking a great deal about alcohol-based fuels. During fiscal year 1981, Mr. Administrator, will EPA concentrate on emissions from engines that run on alcohol-based fuels such as ethanol?

Mr. COSTLE. We have been doing some studies on that. You get very good emissions performance from alcohol-based fuels. You do get an increase in aldehydes. A lot of that tends to be from evaporative emissions, the engine leaking, in effect. That is compensated for in the case of ordinary gasoline, as I understand it, by the cannisters that capture those evaporative emissions and bleed them back into the system.

We have not yet gotten a comparable system for the aldehydes, for the increased volatility for the industry. There may be something that can be done in terms of the ways they make the fuel. There is something called the vapor pressure which is the pressure and the temperatures under which the fuel is actually put together that may reduce those aldehyde emissions.

We have asked the auto industry to look at that. We see that as the principal possible problem and clearly not a problem of the magnitude that ought to retard our trying to substitute alcohol for gasoline.

I think a more fundamental question in that arena is the agricultural food supply tradeoff with using agricultural commodities to produce fuel, particularly given the fact that so much of the world is agriculturally deficient.

Mrs. BOGGS. Thank you very much.

Thank you, Mr. Chairman.

60-531 O - 80 - 4

Mr. BOLAND. Mr. Sabo?

Mr. SABO. Thank you, Mr. Chairman. I have three questions.

On page 9 you have a request for some increased funds for what you call confirmatory testing for fuel economy. Last week in the Transportation Committee I heard similar requests. I think it was from the National Transportation Safety Board.

Mr. COSTLE. On fuel?

Mr. SABO. I assume this is confirming fuel economy of cars.

Mr. COSTLE. We have a legal responsibility under the Act which DOT basically administers to provide fuel economy testing in order to determine those fleet-wide averages.

Mr. SABO. We were told there that you had the authority for the original establishment but that you did not have the statutory authority for the confirmation tests and that rested with the National Transportation Safety Board.

Mr. HAWKINS. The National Highway Traffic Safety Administration is responsible for enforcing the fuel economy standards. The information on what the fuel economy performance of the manufacturers actually is is provided to National Transportation Safety Board by EPA.

The phrase "confirmatory testing" is what we do in our laboratories to confirm the information submitted by the manufacturers based on tests in their laboratories.

In order for NHTSA to have an adequate data base to go to court, they believe the government needs to have some government confirmed test results which is beyond what we do and this increase was an increase that was supported by the Department of Transportation to provide them with adequate evidence on what the actual performance of the manufacturers in the fuel economy area are.

I think the testimony that you received was that probably EPA is responsible for doing the testing and the Highway Traffic Safety Administration is responsible for the enforcement of those requirements. While I am not familiar with the precise request of the Department of Transportation in that area, I have had a number of discussions with Joan Claybrook and I suspect they probably have requested an increase in resources so they may have a program to actually increase the oil savings that the program is intended to receive.

Mr. SABO. I suggest you double-check with them because I understand they intend to contract with EPA for it.

Mr. HAWKINS. There is in the DOT request, as I recall, a specific dollar amount which would support this additional testing through a contract arrangement.

Mr. COSTLE. We now have money to test at a certain level. To the extent that we want to increase that level, we have been arguing for two or three years that since DOT is the enforcer of that statute they ought, to the extent they can, be putting up some money to help us pay for it, because all of the things being equal, we might want to put our money into something else. This is the first time I have heard of the DOT request. I am delighted to hear

DOT has money in their budget to help us pay for confirmatory testing.

Mr. SABO. It sure sounds that way.

Mr. COSTLE. That is an appropriate interagency transfer. A good part of our energy R&D budget actually passes through us into the hands of other departments and agencies to take advantage of expertise; they have to carry out certain studies or analyses. That is pretty routine, and it is usually accounted for in the agency that is putting up the money. So you would in this case expect to see it both in our budget in terms of the base program that we are carrying on, and then any increment above that. I am delighted to find out that this is showing up in the DOT budget.

Mr. HAWKINS. I suspect that it is a little hard to hone in on it based on just the oral reference, but I think what you may be referring to is an item in the DOT request which I remember discussing with Miss Claybrook last summer, which is subsequent to our providing DOT with the manufacturers' performance numbers based on our confirmatory tests, DOT would then identify the carlines that looked like they might be particular problems and the ones that they wanted to foist their enforcement effort on.

They would then want to do some additional testing to provide ample support for any kind of enforcement action they might want to take so that they would be sure that the government wouldn't wind up going to court with less than 100 percent certainty that they really were focusing on the problem cars, so that is the resource. From our point of view, that has a very cost-effective way of focusing the attention on the real problem area.

In other words, we do a broad screen to make sure that we have a comprehensive adequate understanding of how the manufacturers are performing with our confirmatory testing.

Then the DOT request would supplement that by really putting the high power lines on the microscope, if you will, for those carlines that appear to have a particular problem, and they would furnish additional resources to do additional testing to make sure the government had the facts right on what performance of those vehicles were.

Mr. COSTLE. What we will do on this is go back and just double check it and send a letter back to the Committee that clarifies exactly what is in DOT's budget, what is in ours and what each pays for so there is no misunderstanding.

SUITS AGAINST LOCAL GOVERNMENTS

Mr. SABO. I am curious. At what point in terms of your enforcement process do you make decisions on suing local units of government?

Mr. COSTLE. Local units of government?

Mr. SABO. Yes. Frankly, this relates to a situation we have currently in our area. The Metropolitan Sewer Commission, despite expenditure of millions in funds, apparently haven't met all standards yet, although I think it is clear that water standards have improved substantially. At any rate, they are still behind schedule, have gone through substantial negotiations with our state pollution

control agency, and come to some consensus, and now apparently are being threatened by an EPA suit.

Mr. MILLER. This is in Minneapolis?

Mr. SABO. Yes. I am not in a position to judge all the facts. I know the effort has been there. Where the fault lies I am not in a position to judge. How do you speed it up? It just strikes me that the whole process of suing is one of the poorest ways we have of resolving disputes in our society. It costs lots of money and makes attorneys rich, but I think quite often simply delays solving certain problems. This type of dispute, in spite of what has been a very, very major effort, ends up with the potential of them going into the courts for what I assume would be a substantial period of time.

Mr. MILLER. This case is in our office for review right now. I think you have described the process. Most of the dealings with specific plants takes place in our regional offices, and decisions are normally made there in the first instance to recommend that suit be brought. Then it is reviewed by our offices in Washington and then it is reviewed by the Justice Department in Washington, and then it is reviewed by the U.S. attorney, in this case probably in Minneapolis-St. Paul. So it goes through four screenings, and very few cases are filed. As a result of that, I think anybody would say it is inappropriate. There are a number of people in that process who take different views.

I think we also agreed particularly with the public sector, that suits are a remedy of last resort.

Mr. COSTLE. Clearly.

Mr. MILLER. I would have to say that in this particular case we have had a greater volume of interest and letters on both sides than I have ever seen before, but we will look at it very intensively before we do anything one way or the other.

Mr. SABO. I would appreciate it if you could keep me posted. I guess I am interested in both particulars and I am also interested in the general policy as to where we end up in the court system. I don't think that is a good way of resolving most disputes.

Mr. COSTLE. Our general policy is that you sue as a last resort, particularly in the case of municipalities. In a lot of instances, their ability to meet our standards is paced by availability of money under the construction grants program, and there may be disputes about operative procedures and things like that. We never sue and then go back and say, "Did we do the right thing?"

Mr. SABO. How many suits do you have pending currently?

Mr. COSTLE. Against municipalities?

Mr. SABO. Yes.

Mr. MILLER. Approximately 46 cases concluded and 18 pending.

NATIONAL MUNICIPAL ENFORCEMENT STRATEGY

Mr. BECK. This past year we signed a national municipal enforcement strategy which basically categorizes six categories of municipalities. That policy speaks, I think, to a very narrow class of municipalities that we really felt we should go forward within an enforcement mode. The worst case was where they have money. They had adequate time. They have got substantial violations and they have been substantially put on notice.

It is in those instances where in fact we are talking about enforcement. In all other instances, for all intents and purposes we were trying to find other administrative remedies to deal with it. This was signed in October.

It was an attempt to make sure that we were only focusing on the very bad cases, and all others were in fact dealt with in a more sensible administrative way. It is also tied to the question of funding, because we are very concerned about having municipalities, now with the delay in construction grant funds unable to have some recourse, and having to find some ways to deal with that.

Mr. COSTLE. In fact, that policy statement was the first time that EPA tried to put together the water program people and the enforcement people, and say we have got to make sure that when we are making a decision to take an action, administrative or legal, that it is a coordinated action within our program. Of the two people responsible for that sensible approach, the lead person was Jeff Miller.

Mr. SABO. As I understand it, this particular case involves some tradeoffs between air and water pollution, apparently, there are some air standards that they could meet, but the result of meeting those immediately would be to worsen the water emission standards?

Mr. MILLER. I think that is a small part of the problem.

Mr. SABO. Any information you have on that I would like to have.

[The information follows:]

METROPOLITAN SEWER COMMISSION

In specific reference to the Metropolitan Sewer Commission problem, the case is currently under review by my staff. This case does involve some trade off of water pollution problems against air pollution problems because the basic method of disposing of the sludge generated by the facility is through use of incineration. A possible inforcement action is among the various options being considered so further details are not now available.

TECHNICAL ASSISTANCE TO SMALL COMPANIES

Mr. SABO. The third question relates to toxic substances. I am curious in what degree you provide technical assistance to smaller and moderate-size businesses. I have had complaints from what I would call a moderate-sized business in our community that just simply says they are afraid they are going to become totally noncompetitive because of their inability, in spite of what might be their desire to comply with standards, to hire or even contract and get the technical assistance that they need to know whether they are in compliance. They are spending lots of money and the end result is they don't know where they are.

Mr. COSTLE. Is this a company that makes chemicals?

Mr. SABO. It makes paint.

Mr. COSTLE. So it is the hazardous chemicals.

Mr. SABO. Yes. I believe them when they say that they would like to comply, but they end up just simply very, very frustrated in terms of knowing where they are at. So they are fearful that the whole effort is going to leave them—while they are not a small company—totally noncompetitive with larger companies.

Mr. JELLINEK. Can I follow up on that? First of all, in terms of them knowing where they stand, on requirements under the Toxic Substances Control Act, we have an office that is specifically designed to assist industry in understanding their responsibilities and helping them figure out the bureaucracy. The Act established that office. We have a toll free "800" number. I don't have it with me right now, but I would be willing and happy to get it to you today to give to that company, so we can try to help them understand what we are doing by way of implementing the law.

That company, though, I am sure, and other smaller companies, probably does have potential problems in meeting the requirements that the law may make of them in terms of assessing the toxicity of their chemicals and in answering some of the kinds of basic information requirements that we will be making of them, particularly as they develop new chemicals.

Mr. COSTLE. Did you say they make paint? It is a paint manufacturer?

Mr. SABO. Yes.

Mr. COSTLE. It is probably more an effluent problem in their case.

Mr. JELLINEK. No, I think frankly the paint and coating industry is one of the major chemical manufacturing industries. We have had an awful lot of contact with them, and there are many medium and small-size paint and coating companies. We are sensitive to the needs of specialty chemical manufacturers in those different sectors of the chemical industry, and plan, after we get over the initial hump of putting out regulations that affect the chemical industry as a whole, to try to tailor our future activities toward the specific needs of specialty industries. I would be glad to follow up on this particular company and try to answer some of their questions.

Mr. BECK. Let me add just a couple of things that also relate to that industry category. Two areas are under my jurisdiction that have some impact on them. One is the effluent guidelines category. When we do effluent limitations we are always trying to segment, if you will, the population of industry in terms of size of the industry and so on and so forth, so there is a consideration at that point in terms of economic impact.

The other thing is, we are making available Small Business Administration information to each one of those industries on how to attain loans for pollution control equipment.

In the area of the Resource Conservation Recovery Act regulations, proposed but not finalized, there are some factors being taken into account in terms of small generator cutoffs. We propose 100 kilograms per month, for instance, and one of the factors behind it was a consideration with regard to economic impact as well as just impact on environment. We are very conscious of the small business problems, particularly in that area.

Mr. SABO. Thank you, Mr. Chairman.

Mr. BOLAND. Are there any additional general questions for the Administrator?

Mr. TRAXLER. Will you have someone here I can talk to further tomorrow on the question of your Resource Conservation and Recovery Act listing of foundry sludges?

Mr. COSTLE. Yes.

Mr. TRAXLER. You will make me very happy.

Mr. BOLAND. The Committee will stand adjourned until 10 o'clock tomorrow morning.

WEDNESDAY, MARCH 5, 1980.

AIR RESEARCH COMMITTEE

Mr. BOLAND. The Committee will come to order. We will turn to the air media, and we are pleased to have David Hawkins, who is the Assistant Administrator for Air, Noise and Radiation. On page A-1 of the justification for the air programs, the total 1981 request is $248,470,000. That is a decrease of $2,020,000 from 1980. The second paragraph on page A-8 indicates that the 1981 air research program is the first such program to be developed in conjunction with EPA's new Research Committee planning system. Can you describe the Research Committee?

Mr. HAWKINS. Yes, sir, Mr. Chairman, and Dr. Gage may want to add to it. Essentially, this was the structure that was developed by the Office of Research and Development staff with the other program office staffs as well. Essentially, the key to it is that the research agenda, which is carried out by Steve Gage's staff, is no longer unilaterally developed by the research office, but rather is a product of consultation betweeen the program offices and the research office. As a result, the tasks that are carried out in the research area are ones which have been the product of discussion between the program staff and the research staff. Thus, the research people know explicitly, and in an organized fashion, what it is that the program staff feels are the key unanswered questions in the research area, and we, on the other hand, have direct contact with the research program to know what the practicalities of doing research to try to answer those questions are, and it works quite well.

Dr. GAGE. We started off with this new research planning committee system two years ago, Mr. Chairman. We had five pilot studies going at that time, including one in the air mobile source pollution research area, and the experience based on our first year was so successful that we expanded the number of committees to twelve, which basically encompassed all of the major regulatory responsibilities.

This year we are adding one more, for the energy research area, so now we will be jointly planning with the regulatory offices over 95 percent of the research activities.

Mr. BOLAND. Who are the members?

Dr. GAGE. The members are representatives of both the Office of Research and Development and the responsible program office. We also include members from the regional offices, where they have a particular expertise.

Mr. BOLAND. All from within the Agency itself, I take it?

Dr. GAGE. Yes.

Mr. BOLAND. And how are they selected?

Dr. GAGE. These people are selected basically by consensus. I nominate a co-chairman from the Office of Research and Development, and then either the Assistant Administrator or the Deputy Assistant Administrator in the regulatory office nominates a co-chairman. We then involve the key experts from both of the offices and typically convene a panel of some eight to twelve people, who are the best people in the Agency to understand where the regulatory programs are going, and where the research can support these regulatory programs.

Mr. BOLAND. How many panels comprise the committee?

Dr. GAGE. We now have thirteen.

Mr. BOLAND. What part did the committee play in the formulation of this budget?

Dr. GAGE. It was very instrumental. For the 1981 budget, I think that probably every single one of the media research programs were very highly impacted by the joint planning efforts and, as I indicated earlier, the fiscal year 1982 budget will have an energy research committee as well, which will have a much stronger contingent of regional representatives on it, because so many of the problems associated with new energy facilities, such as the synthetic fuel plants, are very highly impacting our regional offices.

Mr. COSTLE. For me, the payoff of this approach has been that it gives me an independent way of insuring that the research that we are doing is that relevant, and that it is serving the program needs. It doesn't mean that the research arm is just doing only what the program says they want done, but it just gives us a much better way of evaluating the relevance of the overall research program, and the timeframes for these research projects. I think it has been a major breakthrough in trying to get the R&D arm of EPA tied in with the rest of us, which was, in fact, a trying problem in EPA's early years.

PRIOR YEAR FUNDS IN AIR PROGRAM

Mr. BOLAND. On page A-13, I note that $41,191,000 of estimated 1980 obligations will be from prior year funds. That is an increase of $11 million over the amount estimated in the January 1979 submission. What is the reason for the significant change?

Mr. HAWKINS. There is essentially one basic reason, Mr. Chairman, and that has to do with the metropolitan transportation and air quality planning function of the agency under Section 175. Under that section, in 1979 we started to, for the first time with EPA funds, fund air quality planning tasks at the transportation planning level in urban areas across the country.

We chose a deliberate strategy, Mr. Chairman, to not obligate large amounts of money to an individual metropolitan planning organization until they had formulated an adequate work plan. Our estimate in January of 1979 was based on an assumption that the planning organization would be able to develop those adequate work plans more promptly than they in fact were, and as a result we disbursed small amounts of money to give them enough resources to develop adequate work plans.

We are now disbursing the money much more rapidly, since they do have adequate work plans. Essentially, we didn't want to give them a lot of money for poorly formulated programs. Now they have a much more validly formulated program, and the money is being obligated. Since the end of fiscal year 1979, we have obligated another $5 million, and we have nearly completed our review of applications that would cover the remaining funds in the first year that is associated with this carryover.

DIESEL RESEARCH

Mr. BOLAND. On page A-17, the last half of the page indicates the accomplishments in the Health Effects Transportation Sources. The major thrust of this research is to determine the possible ill effects of diesel exhaust. Is that correct?

Mr. HAWKINS. Yes.

Mr. BOLAND. The EPA is not the only agency involved in diesel research. The National Aeronautics and Space Administration, the Department of Transportation, the Department of Energy, and the National Institute for Occupational Safety and Health are also performing diesel research. In addition, the National Academy of Sciences is looking at diesel exhaust problems. How does your research interface, complement or contrast with these other groups?

Mr. HAWKINS. Perhaps I would start, Mr. Chairman, and then let Dr. Gage continue. The research that EPA is undertaking covers several different types. The key feature that distinguishes it from the other activities, as you have indicated, is the fact that we are actually running test engines and collecting the material from those test engines, which is then used in animal exposure studies as well as in other kinds of laboratory screening studies, to determine the effects of the pollutants as collected from the kind of on-the-road motor vehicles that you see.

For example, the OSHA is working with motor vehicles that are the kind you see operating not on the roads but rather in mines and in warehouses. We are working with commercial production vehicles for trucks and light-duty passenger car automobile engine vehicles. I don't believe that work duplicates any other work that is going on in the government.

Mr. BOLAND. DOT does not duplicate that work in test vehicles?

Mr. HAWKINS. Not that I am aware of. In fact, we are doing work under contract for NIOSH at our laboratories in Cincinnati. We are not aware of DOT work on on-the-road engine types. The work of the National Academy of Sciences, Mr. Chairman, is essentially a review of studies already done rather than conducting studies. Perhaps Steve would like to add to that.

Dr. GAGE. The National Academy of Sciences' studies are funded jointly by the Department of Transportation, the Department of Energy, and EPA. We have looked very carefully at the studies going on in this area, Mr. Chairman, to make sure that we can use the federal money most effectively to get early answers. The major other departmental effort aimed at any area which would be close to those activities which we are involved in is the Department of Energy.

We have done a very detailed analysis of what the Department of Energy is doing. They are primarily emphasizing inhalation experiments using whole animals. This work is going on primarily at the Lovelace Foundation in New Mexico. We, on the other hand, are looking at a variety of other ways in which to determine the carcinogenic potential of diesel soot.

Mr. BOLAND. I take it that none of these other agencies are engaged in the same type of research that you are engaged in. Could you

detail for the record the amounts of money that are spent by other agencies in this area and what they actually do?

Dr. GAGE. I could submit this for the record, because the Department of Energy is the only other group working on health effects, and I think it gives a pretty clear distinction of the differences between the two.

[The information follows:]

DIESEL R. & D. IN OTHER AGENCIES

Other Agency allocations for diesel research and development for fiscal years 1979, 1980, and 1981 are as follows:

[In millions of dollars]

	Fiscal Year—		
	1979	1980	1981
DOT	1.195	.712	.462
DOE:			
Technology	2.0	2.0	2.0
Environmental	.64	2.125	2.3

The majority of the DOT program addresses engine development and assessment with a small contribution made to the interagency sponsored study being done by NAS.

DIESEL RESEARCH

Mr. BOLAND. The research performed in this area is the basis for one of the most complicated and important decisions that you have to make. Last year, the Agency proposed restricting diesel particulate emissions to 0.6 gram per mile for 1981 and 0.2 gram per mile in 1983. The technology has not yet been production tested which would enable manufacturers to comply with the proposed 1983 standard. In addition, the estimated cost of compliance could be $850 million according to the Council on Wage and Price Stability. The standards were recently finalized at 0.6 gram per mile in 1982, and 0.2 gram per mile in 1985. The effect of the regulations will be significant on the automakers which may rely on diesels to meet fleet fuel economy goals. As I understand it, the production of diesel-powered automobiles is increasing significantly. Is that so?

Mr. COSTLE. Yes. In fact, using the estimates of the auto industry, it is indicated that about one out of every twenty cars sold is diesel, and they expect that by the end of this decade that one out of every five will be diesel, so we are looking at a very significant increase in the diesel fleet on the road with passenger cars.

The diesel has a lot of advantages in terms of fuel economy and durability. I think it is inevitable that we are going to dieselize a substantial part of the American auto fleet. It is also a dirty power plant.

Mr. BOLAND. If you can see it and smell it, you get the feeling that it is highly potent.

Mr. COSTLE. I will give you the sense of that fact. If you travel behind an uncontrolled average size diesel automobile for one mile, and were able to check everything that came out of its exhaust,

you would have something on the order of two quadrillion individual particles. They are very small. Every one of them is respirable deep into the lungs, where they get down in the air sacs where the gas exchange takes place. They have a sticky surface characteristic, so they lodge in the lungs. They will stay in the lungs longer even than say cigarette smoking. They are not immediately exhaled, and the residence time can be quite extended.

There can be as many, believe it or not, as 10,000 different chemical constituents associated with that diesel exhaust. There are about 100 to 200 compounds, particularly the organic compounds, that are the ones we worry the most about.

The exhaust is emitted right at the ground level where people breathe, and in the larger cities you would be faced with a constant problem. If we didn't control this, we would see a very significant increase in fine particle matter that is, I think, potentially very dangerous, particulate matter, right where people actually live.

Quite independent of whether or not that is carcinogenic material, and we are still reserving judgment on that—preliminary screening studies suggest it is but all the evidence isn't in—but just on the grounds of controlling it as respirable particulate matter, we felt we had to set a standard that would essentially result in 74 percent reduction in the diesel emissions from this increasing fleet by 1985.

Mr. BOLAND. The research that you performed to date in this area apparently justifies the 0.6 and 0.2 standards. Is that correct?

Mr. COSTLE. We certainly feel that it has.

Mr. BOLAND. What specific research results can you cite in support of those standards?

Dr. GAGE. We had a major conference in Cincinnati in the early part of December reporting on results both from our research and research going on around the world. Basically, at this point we have a pretty strong indication that the diesel particulate is carcinogenic. This is on the basis of both the cellular bioassay screening test, and skin painting test. This is a standard whole animal bioassay approach used throughout toxicology testing. The diesel particulate seems to increase the number of skin tumors on test animals which have been subjected to painting relative to controls, but I guess the reassuring thing to date is that the diesel particulate does not appear to be a highly potent carcinogen, as many other chemicals are.

The whole animal test will not be completed until later this calendar year. They were started as far back as 19 months ago, but we really must wait for the entire life of the animal, because so many tumors will develop only in the last quarter of the life of the animal, so it is very critical we go for the full 24 to 30 months on these tests.

Mr. BOLAND. If the control technology cannot be implemented by 1985, would the standard be adjusted?

Mr. COSTLE. That would be the issue the Agency would have to face. We are pretty confident it can be developed. The smaller diesels are pretty close to meeting the 0.2 gram right now. The main concern and the crux of the issue is the big diesel of General Motors. They are going to have to do some engineering on the engine itself.

We think in moderate to smaller sized diesels that engine modification may solve the problem in many instances, but for the larger car, they are going to need what is being called a trap oxidizer, which essentially is just a canister with a wire mesh in it that collects the particulate and periodically burns that particulate off, so you get a higher combustion and less emissions.

There are a number of technical problems associated with that, with durability being, we think, the key one. The real judgment we had to make in finalizing that standard, Mr. Chairman, was whether we were giving adequate lead time to the industry. As you know, the law calls for technology for such a standard.

There are test units that have already been produced. We have seen some reductions accomplished in this last year on even larger engines that are as a result of a much quicker learning curve in the industry than even the industry thought possible years ago, so we think the standards are cost effective and we think they are reachable. The technology is reachable in that timeframe, and, in consideration of the industry's arguments on this, we did extend, as you noted from your original proposal, the 1983 deadline to 1985.

REQUEST FOR DIESEL RESEARCH

Mr. BOLAND. What is the total research request in 1981 devoted to diesel emissions?

Dr. GAGE. The total request is basically that associated with the health effects transportation source component, which would be roughly $3.2 million for salaries and expenses, and $3.4 million for the extramural research and development funding.

Mr. BOLAND. As I understand it, the decision to proceed in this area was made in 1980, and funds were included in the 1980 budget. Is that correct?

Dr. GAGE. That is right.

Mr. BOLAND. Why do you need additional funds in 1981?

Dr. GAGE. We are continuing the studies of whole animal exposure. These studies are quite expensive and will be continued into 1981. We have a number of studies which are time-phased, and will require support well into 1981 in order to make a realistic assessment of the health threat associated with diesel particulate. We anticipate that beyond 1981, that the budget in this area will be reduced. In fact, that is one of the areas of discussion that the mobile source research committee is undertaking right now.

Mr. COSTLE. Very fine particulate either causes or aggravates chronic lung disorders like emphysema, asthma, or bronchitis. I felt there was sufficient grounds for treating that as a particulate to justify regulations, but I don't think anybody is going to be satisfied until we pinpoint the cancer issue. In order to do that, you really need to follow through on these animal studies, and that is something that we really ought to know but I think—and I made it very clear when I set the standard—independent of whether or not this is a carcinogen, there are grounds to regulate this on the simple fact that it is very fine particles which people breathe.

PARTICULATE STANDARDS

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman. I am very interested in this subject too, because this does represent a real area of tradeoffs. We are trying to increase fuel efficiency and yet obviously don't want hazards to health. The standards that you have set of 0.6 gram per mile and going down to 0.2 gram per mile represents a 74 percent reduction?

Mr. COSTLE. Our estimates are that we will as a result of this have 74 percent less particulates than we would have without the standards.

Mr. COUGHLIN. And that is the 0.2 per gram per mile?

Mr. COSTLE. Yes

Mr. COUGHLIN. The 74 percent reduction, and the 0.6 gram per mile is what percentage reduction?

Mr. HAWKINS. Essentially capping.

Mr. COSTLE. It essentially freezes it at about where they are right now except for the very large engine. That is where the issue is, Congressman, that big engine in the big car. There is some question that has been raised by consultants as to whether the fuel efficiency gains assumed for diesels would occur.

Mr. COUGHLIN. Except for the big engines; is that right?

Mr. HAWKINS. Right, a modest reduction of about 25 to 30 percent for the big engines but for the others it is essentially a cap at the 0.6 level.

Mr. TRAXLER. If you would yield just on this point that they are raising, what was the position of Volkswagen relative to the 2-year delay?

Mr. HAWKINS. Volkswagen and General Motors, in their testimony at the public hearings, were asked questions about what model year might it be possible to comply with a 0.2 standard, and they both indicated that it might be possible in 1985.

Mr. TRAXLER. But they supported the delay?

Mr. COSTLE. Yes. They urged a delay.

Mr. TRAXLER. But they have a 4-cylinder, very small diesel. I am curious by the dichotomy of what you are telling us, that the problem consists primarily at the upper end, high-c.c. engine versus the small 4-cylinder light displacement.

Mr. HAWKINS. Yes. I don't think there is any necessary inconsistency. Their testimony, proper for this company, was one which wanted to maximize their flexibility and reflected conservative engineering judgments about being able to accomplish a task on each and every vehicle in a regulatory framework. That is quite different from having prototype engines now. The issue isn't whether they can meet the standards now. The issue is whether they can meet them in model year 1985; the small engines will have a relatively easy engineering task and the larger engines will have a more difficult engineering task.

Mr. TRAXLER. The tradeoffs here, as my colleague has stated, are very interesting. Volkswagen diesel does about 42 miles per gallon in the city, and over 55 on the highway, so it looks very attractive from that position?

Mr. HAWKINS. Yes. Well, actually, Mr. Traxler, it was nice to know that in this rulemaking we did not have to confront the issue of tradeoffs on fuel economy and energy security, because in fact this is a technologically based standard, and if we can't sustain

our finding in court on the record that this can be achieved, then in fact the courts would overturn it.

We think it can be achieved, and we are not going to be causing a reduction in the number of vehicles produced with diesel engines as a result of this regulation, to the extent that you have an issue, it is an issue associated with the size of the vehicle fleet and not with the amount of fuel that is used; that is, some manufacturers may choose to make decisions about emphasizing large car production versus smaller car production. So the tradeoff is not between the amount of gasoline or diesel fuel used, but rather the size of the car that the people will be riding in versus public health issues.

Mr. COUGHLIN. The 0.2 gram per mile 74 percent reduction, that standard is based on, as you indicated, strictly or pretty much anyway, particulate emission?

Mr. COSTLE. That is right.

Mr. COUGHLIN. As opposed to carcinogenic tendencies?

Mr. COSTLE. What I have said about the evidence on carcinogenicity was that we have the screening studies, that there was strongly suggestive evidence, but that we really needed to wait for the whole animal studies.

Mr. COUGHLIN. What research supports the 0.2 gram per mile standard on a particulate basis?

Mr. COSTLE. I suspect—and I will ask Steve to go into this a little bit—that if there is one pollutant standard that we have set on which I feel most comfortable with the overall accumulated data, it is in the area of particulates, and particularly fine particulates, where we know that they get into the portion of the lungs where they can really do the damage.

Common sense, in a way, also tells if you get a particle lodged down there that may have 10,000 different kinds of chemical constituents associated with it, and it is going to sit there for a while, some of it is going to leach into the lungs. You are at the most sensitive part of the lungs where the gas exchange takes place, and common sense tells you that that is probably not a good thing.

Mr. COUGHLIN. From the particulate standpoint you do have research supporting the 0.2 gram per mile as being adequate?

Mr. HAWKINS. Mr. Coughlin, maybe I could point out that this particular regulation was developed under a section of the law that requires the application of available technology in setting the standards, so the actual number 0.2 is driven more by technical considerations contrasting it to whether it should be 0.25 or 0.15 or 0.3. 0.2 was the number arrived at based on technical evaluations of what could be done in that timeframe. Whether it is sufficient from a particulate standpoint is really a question that the Agency isn't going to be able to answer definitively until we have completed the health criteria document on the overall particulate standard, which is underway in draft right at this moment.

Dr. GAGE. I might add, Mr. Coughlin, that among the things that we did look at was how much of an increase could be expected in particles, particularly the fine particles in cities, assuming a certain penetration of the diesel car into the automotive fleet, and we were very reassured to see that at 0.2 gram per mile emission limits, that there would be a very small increase in the total particulate.

Mr. COUGHLIN. Even if one in five cars used diesel?

Mr. GAGE. Yes, even if one in five cars would be in the fleet, and assuming a stable fleet in the year 1990. We were looking at fairly small increases in the fine particulate fraction of the total particulate mix, and thus we were quite reassured from that point of view, too, that we were at least not aggravating the general particulate pollution problem even in cities.

Mr. COUGHLIN. So it is encouraging at least to me.

Dr. GAGE. It is.

Mr. COUGHLIN. What I am getting here is 0.2 gram per mile particulate emission would not lead to substantial additional particulate pollution, and at least as of now the studies indicate that there is not a great carcinogenic risk at that level either?

Mr. HAWKINS. I think it is fair to say, Mr. Coughlin, that we feel that this regulation is a major step forward in making the planned expansion of diesel passenger cars consistent with public health.

Mr. COUGHLIN. Thank you, Mr. Chairman.

CERTIFICATION AND TESTING

Mr. BOLAND. Mr. Traxler.

Mr. TRAXLER. Thank you, Mr. Chairman.

Mr. Administrator, as you know, I have had a keen interest in your Ann Arbor testing facility because of the impact that it has upon production and sales of automobiles, and I want to talk to you for a minute about what is happening there.

As you know, last fall personnel were reassigned from the emissions testing aspect of the facility to the gasoline standards or efficiency part of the laboratory. I recognize that every agency has to make some choices these days in terms of the most efficient utilization of personnel.

However, what that causes is the possible endangerment of the timely certification of the emission devices on particular engines. Prior to the reassignment of the personnel, the turnaround time on certification decisions ran about nine days. Currently they are averaging a minimum of 26 days, and in fact on some very key decisions affecting industry, it took from sixty to 120 days.

The 1981 models are now being finalized. They are finalized in fact, and certification in terms of the emission controls is absolutely essential on those 1981 models. If that is not done, we could see some delays in the introduction of some of the 1981 models. I would hope that there would be a query made. It could really be a problem. If you don't have enough personnel there, you ought to tell us that.

Mr. COSTLE. Yes, I agree.

Mr. TRAXLER. And let the Committee work its will in that regard.

Mr. COSTLE. I was not aware of that change in processing time and maybe there is a reason. David?

Mr. HAWKINS. Yes.

Mr. Traxler, I think the critical feature of that statistic is that while the certification decisions that are made may on the average have increased, the important fact is that the number of certification decisions that are now being made by EPA have drastically decreased.

60-531 O - 80 - 5

Mr. TRAXLER. That is correct.

Mr. HAWKINS. We have in effect converted a wholesale operation into a selective operation. The things that we select, of their very nature, since we are focusing on the more difficult issues and the more relevant issues, take somewhat longer than the old average. The old average was based on our doing a lot of very unimportant decision-making, which cost the manufacturers money, and we have accomplished our estimate with a resource saving to the manufacturers of $8.5 million a year as a result of streamlining our process.

Now what is left over, Mr. Traxler, are the more complicated decisions. Those are the ones that we should appropriately be working on rather than the simple paper-pushing decisions.

Mr. TRAXLER. Right.

Mr. COSTLE. David, do you think there is a risk that we would slip on the certification schedule and run the risk of a late introduction of models?

Mr. HAWKINS. That is one of the things that my staff keeps me informed on, on a daily and weekly basis. I always get an early alert of any problems that are developing, and we have not gotten that alert. I just think the increase in the average time for the things that we are making decisions on really doesn't tell the whole story. I think that if you look at the kind of decisions that we are making in that area, the average for those decisions probably hasn't increased.

It is simply because you had a lot of redundant, not very worthwhile decision-making in the old process, which we have eliminated, and all you are left with are the more difficult ones, which historically took longer, and now take approximately the same time.

Mr. TRAXLER. I think you are dealing with some new technology here also, and that is the electronically controlled emissions.

Mr. HAWKINS. That is right, and we have been working for the last two years with the manufacturers on issues of how you map these electronic control devices, how you protect trade secrets, and also how you enable our engineers to be able to spot any game-playing that advertently or inadvertently might occur as a result of these black boxes.

Mr. TRAXLER. I think what I want to be sure of, and you have reassured me on this point, is that there is a sensitivity within the Agency and the testing facility, that to delay the new models is not a wise decision for all kinds of reasons, not the least of which there will be improvement in terms of gas and emissions over the previous model year. Second, obviously we don't want to compound the unemployment problems that the industry is now faced with and everyone is pinning great hopes on the 1981 models and I would like to see my constituents go back to work.

Mr. HAWKINS. We are very sensitive to that, and the environmental vice presidents of the companies all have my telephone number and don't hesitate to call me if they have a problem.

Mr. TRAXLER. Also your home number. Just keep in mind that one out of ten unemployed Americans now resides in the State of Michigan. Thank you, Mr. Chairman.

HUMAN VOLUNTEERS

Mr. BOLAND. Turn to the Health Effects-Non-criteria pollutants on the top of A-22. The top of A-24 indicates that human volunteers are being exposed to gases and particulates. Are the volunteers paid or unpaid?

Dr. GAGE. The volunteers are paid a nominal fee. They are recruited by the University of North Carolina, which operates this inhalation facility.

Mr. BOLAND. How long have you been using human volunteers?

Dr. GAGE. They have been used all along.

Mr. BOLAND. What is the total amount the Agency has planned for paying human volunteers in 1979, 1980, and 1981?

Dr. GAGE. May I submit that for the record?

Mr. BOLAND. Yes; you may do that for the record.

[The information follows:]

COST OF VOLUNTEERS

The human volunteers referred to on pages A-22 and A-24 relate to the air criteria and non-criteria programs. In fiscal year 1979, 393 volunteers were used at a cost of $16,600. We plan to use about 275 volunteers in fiscal year 1980 which will cost about $48,000. The fiscal year 1981 budget request allows for approximately 320 volunteers at a cost of $95,000. The costs are variable because the volunteers are paid $5 an hour, $10 for physical examinations, plus a small travel allowance.

The total of human volunteers for clinical studies in the Office of Research and Development in 1979 was $196,000. The 1980 total estimate is $191,000. The 1981 plan is $270,000.

HUMAN VOLUNTEERS

Mr. COSTLE. It would be important to point out, Steve, we only take healthy people who volunteer for this.

Mr. BOLAND. You only take healthy people?

Mr. COSTLE. That is right.

Mr. BOLAND. I would hope so.

Mr. COSTLE. They are exposed only to what they are exposed to on the street under various pollution conditions. The only thing we are doing is strapping them with instruments to try to get a better handle on what ambient conditions can do. We are not in the human guinea pig business.

Mr. BOLAND. Are there any other programs in which you are using human volunteers?

Dr. GAGE. Yes, there are several others in the health area where we do use volunteers to particularly measure, as the Administrator stated, physiological changes that may be an indicator of the development of an environmental disease.

One of the fundamental problems in doing environmental research is trying to get good human health data without endangering any of the patients or clinical subjects, but we are getting far enough along that we can begin to see some physiological changes such as a reduction in the lung volume when people are exposed to just ambient levels of ozone or nitrous oxide. These kinds of physiological changes then can be correlated with other biochemical changes in the system, so that we can begin to get a sense of what the environmental disease might be, if we allowed the air pollution to go up beyond the standard level.

REGIONAL CROP LOSS ASSESSMENT NETWORK

Mr. BOLAND. On page A-27, the top paragraph indicates "A regional crop loss assessment network is being established to determine the economic impact of photochemical oxidants and sulfur dioxide on commercially important crops." A National Atmospheric Deposition Program was begun by the Department of Agriculture as a cooperative effort by 26 State agricultural experimental stations, with assistance from the Forest Service, the U.S. Geological Survey, and the Department of Energy. The program is developing data on long-term atmospheric deposition over the United States. It also seeks to determine the relative importance of various forms of atmospheric deposition and to coordinate research on its effects on agricultural lands, forests, rangeland and surface waters. What is your crop loss assessment network going to do that the Department of Agriculture program is not already accomplishing?

Dr. GAGE. The national deposition program, which is being run primarily by the Department of Agriculture, is very closely coordinated with our efforts. In fact, the NADP, as it is called, is an outgrowth of an earlier acid rain monitoring network which had been established by the Department of Agriculture.

Working with agriculture and six other Federal agencies, we have now put together a Federal plan for acid rain research. This was called for by the President in his environmental message this past year, and the report is about to come out.

The deposition project that you described there, Mr. Chairman, is almost completely associated with the collection of data on the deposition of the acid rain.

Mr. BOLAND. Are you establishing a separate network?

Dr. GAGE. No. There were about six networks doing monitoring of acid rain; that is, the actual deposition. These are all now being merged into one, and that is called the NADP.

HOUSTON AIR QUALITY STUDY

Mr. BOLAND. On page A-28, the Transport and Fate justification begins. Last year's justification indicated 1980 would be the final year for the Houston air quality study. Page A-30 indicates 1981 will be the final year. What is the cost of the Houston study in 1980 and 1981?

Dr. GAGE. I believe the cost will run about $300,000 in 1981. The stretchout in that study has been primarily due to the fact that we have not been able to get adequate cooperation from the Texas Air Control Board, in providing us an emissions source for the Houston area. We have had numerous meetings with the Texas Air Control Board and a number of other groups in the Houston area, and the problem is primarily one of lack of adequate people in the Texas Air Control Board to actually put together this emissions source.

It is being delayed until this next year and, frankly, we are not going to be able to do the validation of field measurements that we took this past summer until we have that emissions source.

Mr. BOLAND. What are you doing with the 1980 money for Houston?

Dr. GAGE. The 1980 money is being spent primarily on the question of visibility, which is one of two major questions posed by the citizens of Houston. The other question relates to the effects of ozone. We are in the process of characterizing the particulate aerosols atmosphere in the Houston area, trying to understand why the visibility problems that the people in Houston observed are a lot more severe than just the normal measurements of air quality in that city would indicate.

Some of the information that we are getting indicates that probably because of the high emissions of hydrocarbons from the petrochemical plants in that area, there is a slightly different air chemistry going on there than may be going on even in places like Los Angeles.

We do see concentrations of these hydrocarbons attached to the particles that are in the air, and that combination seems to degrade the light scattering, cause additional light scattering in the Houston atmosphere, and hence degrade the visibility much more than you should expect just going to the air quality measurements and looking at the problem, just from that point of view.

We are also doing three health effects studies, epidemiology studies on the effects of air pollution on asthmatics; on the environmental influence on lung cancer distributions; and on the influence of short-term air pollution exposure to exercising athletes.

NORTHEAST REGIONAL OXIDANT STUDY

Mr. BOLAND. On page A-29, the third paragraph. What are the proposed time spans for the Sulfur Transport and Transportation in the Environment (State) Program and the Northeast Regional Oxidant study?

Dr. GAGE. By that do you mean how long will we be running?

Mr. BOLAND. Yes.

Dr. GAGE. The State program was, I believe, started this past year, and it is envisioned to probably run three to five years. There are several subprojects of it, including the PEPE project, which is named there in that second paragraph on page A-29. This is the field effort associated with the long-range sulfur transport and transportation effort, and is tied intimately with our analysis of the acid rain problem.

In central Ohio, this coming summer, we are going to be studying the merging plumes from a number of industries and power plants coming together in that general area, and try to measure the large clouds that are formed with these comingled pollutants, and track the movement of those clouds and the transportation of the sulfur oxides into sulfates in this large cloud. That happens to be the nature of the problem we are dealing with. That cloud can float on up to Canada and can float on up to New England.

Mr. COSTLE. It even floats over Georgia.

Mr. BOLAND. Have you finished that explanation, Dr. Gage?

Dr. GAGE. Yes.

Mr. COSTLE. As a result of a study that we did, we have some satellite photographs which show a 12 days' conversion. It actually shows the creation of that sulfate cloud in effect, mainly over the northeastern part of the United States, and we will send those

photos to you. They are really quite instructive. It suggests why this is a good part of the visibility problem in the East.

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. The studies that you are undertaking here are to try and determine the path of these sulfur dioxide clouds; is that correct?

Dr. GAGE. And really what happens in the clouds. We have a reasonably good understanding, Mr. Coughlin, of what is happening now in the sulfur chemistry, the sulfur oxides into sulfates. We have a very poor understanding of what is happening to the oxidation of the nitrogen oxides which are also there in very real abundance, and appear to be causing about half of the acid rain problems in the easten part of the United States. So it is the combination of the sulfuric and the nitric acid that is leading to the acid rain problem. We need to understand better how these chemicals interact in sunlight, and how far they are transported under the influences of different meteorological conditions.

Mr. COSTLE. We know what goes up, generally where it goes, and what comes down.

Mr. BOLAND. You know generally it goes from west to east?

Mr. COSTLE. We are trying to understand what happens in between. That atmospheric chemistry is complicated. Until three years ago, I had no notion how complicated atmospheric chemistry really could be.

Interestingly, we did one set of calculations recently in terms of locating all of the power plants right on the Atlantic Coast. We have this general sense that the movement is always west to east and wanted to see how much of it would blow out to sea and how much would come down on land. We discovered that fully two-thirds of it, even if you lined them right up on the coast, would come down on land, because along the Atlantic Coast you get variations in that wind pattern and there is much more north-south movement than I think people generally recognize.

Mr. HAWKINS. I think in their current configurations perhaps two-thirds of the emissions from the power plants in the Northeastern part of the United States would land on land, but as the Administrator is pointing out, even if you lined them up upon the coast, approximately 50 percent would still continue to hit land.

EXEX PLAN

Mr. COUGHLIN. This is probably the place to ask this, a little bit of a followup on the questions I asked yesterday concerning the sulfur dioxide transport. What is the status of the so-called EXEX plan?

Mr. HAWKINS. Basically, that EXEX title refers to an investigation of the Agency of a variety of topics, having to do with how we model the impacts of power plants and other major sources, and how we then go about writing guidelines for states to develop regulations. Essentially, we are exploring the use of a statistical approach that would try to evaluate the probability of violating the air quality standards based on certain information that would be fed into the model. This is a somewhat different approach than has

been used in the modeling endorsed by the Agency in the past, and so the status——

Mr. BOLAND. In the past you used a 25-hour model. Is that correct?

Mr. HAWKINS. We have used a model which has not taken explicit account of the variability in sulfur in fuel that goes into the power plant, and the question is how can one take that variability into account in a way that will achieve the objectives of the Clean Air Act. What we have done is to announce a policy review in this area, and to point out that we will be publishing specific proposals for public comment, and after public comment making some decisions on what, if any, modifications in the traditional approach the Agency has taken are appropriate.

We expect that that is going to take a number of months before that process is complete.

Mr. COUGHLIN. So the EXEX standard, so-called, has not yet been promulgated; that is still under review?

Mr. HAWKINS. It is going into a period now of public comment on specific proposals, which should be appearing in the Federal Register shortly.

Mr. COSTLE. I ordered that review mainly because I was concerned that there were good arguments being made really on both sides on the modeling, and they are very esoteric kind of modeling questions—we were unable to adequately answer the question of whether we would be able to hold total loadings constant, if we made that kind of a change.

There is some data that said we could. There were questions about that data, and I just said I think we have got to explore this more before we make that kind of a decision, because we could inadvertently wind up increasing the acid rain problem by making what on the face of it appear to be real legitimate changes in modeling technique. This is too complicated to resolve without some explicit public discussion on the thing, and so I ordered that review to take place.

Mr. COUGHLIN. Would that be likely to exacerbate the current problem with imported sulfur dioxide in Pennsylvania, New England, and places like that?

Mr COSTLE. That is one of the many questions that I specifically want an answer to from this review.

Mr. COUGHLIN. So you would not promulgate these standards until you had some answer as to whether that would exacerbate the problems?

Mr. COSTLE. At the same time we have got to deal with legitimate issues that are raised with the modeling. Part of the more general effort looking forward to 1981, when we think the Clean Air Act will again be debated by the Congress, is saying we have a national problem. If the present tools aren't going to allow us to deal effectively with it, then we are going to have to come up with new tools. That is sort of a massive evaluation.

Mr. COUGHLIN. States like Pennsylvania and the New England States are having difficulties as it is meeting their State standards, and anything that would exacerbate doing that causes problems in both converting to coal-fired boilers, industrial development, and so forth, which obviously means jobs.

Mr. COSTLE. Sure. Pennsylvania has very effectively advocated their concern, and made a very real impression on me, and I think they have raised a real problem. It is not a speculative problem; I think it is a real problem and I think there are real questions of equity. The current system does allow you to have higher sulfur in Ohio because you are measuring the air in Ohio that you have to breathe.

You are not effectively measuring that part of what is emitted that transports over long distance, but in effect eats into the increment of downwind states. I think it is a legitimate issue and it is one we have got to find a way to deal with.

Mr. COUGHLIN. You don't intend to implement the so-called EXEX plan until this has been reviewed and until you feel assured that it won't exacerbate the problem in other areas?

Mr. COSTLE. That is correct.

Mr. COUGHLIN. Thank you, Mr. Chairman.

VOLATILE ORGANIC CHEMICALS

Mr. BOLAND. The top of page A-33, under Industrial Processes R&D, indicates a volatile organic chemicals program will be initiated in 1980. Has that been started?

Dr. GAGE. Yes, it has been. We have been asked by the Office of Air Quality Planning and Standards, which is one of Mr. Hawkins' offices, to assist that office in the development of new source performance standards, and other housekeeping practices which can reduce the atmospheric loading of these volatile organic chemicals. This is turning out to be one of the most intractable air pollution control problems we have had to deal with, because we have volatile organic chemicals used in so many different ways.

They can come from painting operations or they can come from industrial cleaning operations. To come up with techniques which can reduce the atmospheric loading of these organic chemicals without costing small businesses an inordinate amount of money is really a tough problem.

I think we are finally reaching a point of maturity in the air pollution control program where we can now begin to look at more cost-effective measures, which can allow us to deal with these manifold aspects of the problem.

FUELS AND FUEL ADDITIVES

Mr. BOLAND. On page A-40, under Monitoring Methods and Systems, Registered Fuels and Fuel Additives. How many fuel additives were registered and how many were rejected in 1979?

Dr. GAGE. That program is in a state of suspense at this point. A successful lawsuit was lodged against the Agency on the basis that we were registering proprietary products which are not covered by the Clean Air Act. The 1977 amendments to the Clean Air Act established a new basis for that registration program, and we are in the process at this time of developing the testing guidelines which are called for under the 1977 Act. Once those testing procedures are published and approved, then a new registration program can be instituted.

Mr. BOLAND. Do you use industry-generated data or EPA-generated data on fuel additives?

Dr. GAGE. This program envisions, as in the mode of the Toxic Substances Control Act, the use of industry-generated data. That is why it is taking a long and difficult time to develop testing protocols for the industry to use, which would not introduce too much additional cost. Many of the additives, as you know, are in the nature of the magic dust that one puts in to improve performance, cut down on gasoline utilization, and the rest.

Some of those additives very possibly are not that worthwhile. Yet at the same time we don't want any of the testing rules that we do establish to be a complete barrier to innovation in this area, so we are working through this problem very carefully.

Mr. HAWKINS. Mr. Chairman, I might add that, in a related area, the Agency did focus at the end of fiscal year 1979 and in fiscal year 1980 to take action on manufacturer petitions for avoiding bans on additional additives, which all have alphabet-soup names such as TBA, MTBE, and gasohol, a more familiar one. We did allow various uses according to research we put on this based on the assessment of the impact on the emission control systems.

Mr. BOLAND. Off the top of your head, how many fuel additives are there on the market now?

Dr. GAGE. If I recall, the data base that we had before on fuel additives numbered well over 3,000, and that data base has been essentially put in suspense at this point, because of the lawsuit.

Mr. BOLAND. Mr. Coughlin?

WAIVER OF MMT BAN

Mr. COUGHLIN. On the fuel additive area, I have a couple of questions to ask at this time. For the last couple of years I have been asking questions on the ban of MMT, and I understand that a waiver of that ban was given by EPA. Am I correct?

Mr. HAWKINS. A 4 months waiver in the summer of 1979 was provided in order to make sure that we did not run out of adequate supplies of unleaded fuels during the summer.

Mr. COUGHLIN. Has that waiver been extended or not?

Mr. HAWKINS. No. It ended on October 1st.

Mr. COUGHLIN. Was there pressure to extend it?

Mr. HAWKINS. If there was, it wasn't sufficient to reach my ears, which means it wasn't very strong. It wasn't very strong because I hear a lot.

Mr. COUGHLIN. Did the use of MMT do significant harm to catalytic converters?

Mr. HAWKINS. We don't have any data to indicate that any significant effects occurred as a result of that four month suspension.

Mr. COUGHLIN. And did that use stretch fuel supplies?

Mr. HAWKINS. Yes. The waiver, in combination with regulatory changes implemented by the Department of Energy, did get us through the summer.

Mr. COUGHLIN. And were you aware of any detrimental effect on the environment as a result?

Mr. HAWKINS. No. We think that that was a temporary approach that was useful to give the country an insurance policy on fuel supplies during the summer. At the time we announced it, we indicated that we did not feel that this would be something that the country could afford to do on a recurrent basis, and we urged the industry therefore to make plans for 1980 that would avoid the need to have any reliance on MMT.

LEAD REGULATIONS FOR GASOLINE

Mr. COUGHLIN. It is my understanding that production of approximately 4 billion gallons of gasoline per year results by having the lead content at 1.2 grams per gallon as opposed to 0.8 gram per gallon. The 1.2 gram level is still below the EPA-reported average level of 1978 of 1.3 grams per gallon. What has EPA done this year in the way of regulation of lead content?

Mr. HAWKINS. There are two types of lead regulations for gasoline. We have a lead-free requirement that is based on avoiding damage to catalytic-equipped cars, and all stations must carry a brand of lead-free gasoline. Of course, over time we will see that it will be virtually the only kind of gasoline that will be marketed, because non-catalyst cars are gradually disappearing from the road.

However, in order to protect public health and avoid excessive ambient concentrations of lead damaging to human beings, not catalysts, we have a regulation limiting the amount of lead allowed in leaded grades of gasoline. That was originally scheduled to be reduced on a phased schedule to a level of 0.5 gram per gallon in the Fall of 1979.

A presidential review of the schedule was made along with other energy initiatives and the administration's decision was made to permit waivers, to extend the deadline for reducing the levels to 0.5 gram per gallon by one year, from October of 1979 to October of 1980, and to have levels remain at 0.8 gram per gallon between 1979 and 1980. That did enable the additional production of gasoline during that interim period, and is in effect right now.

Mr. COUGHLIN. If you increased the allowable amount of lead in gasoline, it would increase the production of gasoline; am I correct?

Mr. HAWKINS. Assuming adequate supplies of crude oil, increasing the lead level in gasoline is one way of increasing effective refinery capacity. It has a drawback—increased risk of permanent damage to children.

Mr. COUGHLIN. And your lead level of 0.54 gram per gallon is supported by research that indicates that that is the maximum level necessary to protect health?

Mr. HAWKINS. With the assistance of the Department of Housing and Urban Development, we have done surveys on children's blood-lead levels with average lead-level content of gasoline sold in major metropolitan areas. Those surveys do indicate that while the 0.8 level that we extended for a year's period between 1979 and 1980 will avoid a serious risk to health, that the 0.5 level is really what is appropriate to go to as a matter of prudent public policy, in order to avoid risks to the children in those areas.

Mr. DRAYTON. The study that Dave is referring to is based on hundreds of thousands of data points in New York City. It is one of the most extensive epidemiological studies that we have ever seen, that correlates changes in the amount of lead in gasoline sold in the area with blood-lead levels in various different groups of children in the city. The correlation is just extremely striking. It is one of our very strongest pieces of health evidence. Children, especially minority children, living in highly urbanized areas are the group most exposed and susceptible to high levels of lead.

Mr. COUGHLIN. Exposure to exhaust fuels containing lead?

Mr. DRAYTON. Right.

Mr. COUGHLIN. Thank you, Mr. Chairman.

REPROGRAMING ADJUSTMENTS

Mr. BOLAND. Can you explain the second sentence on the top of page A-43 concerning an incorrect transfer of interdisciplinary funds to the air media in the budget request for 1980?

Dr. GAGE. I believe that initially some of the quality assurance funding was carried in the interdisciplinary account and this reprograming just basically takes care of that mistake that we had made.

AIRPLANES IN AGENCY

Mr. BOLAND. How many airplanes does the EPA use in its air monitoring and technical support program? How many are owned by EPA and how many are contracted?

For the record provide the type of plane, the location and annual cost.

[The information follows:]

AIRCRAFT USED BY EPA

The Environmental Protection Agency operates five aircraft in its monitoring and technical support program. A B-26 and a Turbobeech are owned by EPA. A UH-1H is on loan from the U.S. Army and an OV-10 is on loan from the U.S. Navy. The fifth plane is on lease from a private contractor.

The five planes are located at the Environmental Monitoring systems Laboratory, Las Vegas, Nevada. The fiscal year 1979 cost involved in the operation of the aircraft was $498,700.

Fiscal year 1980 costs involved are $608,000; fiscal year 1981 costs are estimated to be $729,000. These figures do not include crew beyond the pilot, or per diem for persons involved in the program.

STATIONARY SOURCE PLANNING AND STANDARDS

Mr. BOLAND. Page A-46, contains a tabular summary of the Air Quality and Stationary Source Planning and Standards program. State Program Guidelines and Regulations Development is increasing $54,000 in the current 1980 estimate. However, there is a considerable shift from the abatement, control and compliance account to the salaries and expenses account. Although the dollars are shifting, the number of workyears remains constant. What accounts for the shift?

Mr. HAWKINS. On page A-49, we do discuss some of the reasons for the changes from the budget estimates, Mr. Chairman. There is a reprograming of some of the monies. In addition, we reduced

money in order to comply with the congressional reduction on travel costs. Finally, the pay raise of October 1979 probably accounts for the bulk of the increase.

SOURCE CATEGORIES

Mr. BOLAND. On page A-48, the justification for emission standards and technologies assessment begins. For the record provide a list of the 29 source categories for which standards have been promulgated and for the 69 categories underway.

Mr. HAWKINS. Yes, sir.

[The information follows:]

NEW SOURCE PERFORMANCE STANDARDS

The following 34 New Source Performance Standards have been promulgated. Five of these standards (indicated by asterisks) were previously combined with other standards making the original total 29.

NEW SOURCE PERFORMANCE STANDARDS THROUGH 1979

Steam generators (>250 MBtu/hr).
Municipal incinerators (>50 tons/day).
Portland cement plants.
Nitric acid plants.
Sulfuric acid plants.
Asphalt concrete plants.
Petroleum refineries, process gas combustion.
*Petroleum refineries, catalytic regenerators.
Petroleum storage.
Secondary lead smelters and refineries.
Secondary brass and bronze refining facilities.
Iron and steel mills: Basic oxygen furnaces (TSP).
Sewage treatment plants.
Phosphate fertilizer, wet process phosphoric.
Phosphate fertilizer, superphosphoric acid.
Phosphate fertilizer, diammonium phosphate.
Phosphate fertilizer, triple superphosphate products.
Phosphate fertilizer, triple superphosphate storage.
Iron and Steel Mills, electric arc furnaces.
Primary aluminum reduction plants.
Primary copper smelters.
Primary zinc smelters.
Primary lead smelters.
Coal cleaning plants.
Ferroalloy production.
Kraft pulp mills.
*Sulfur recovery in petroleum refineries.
*Lignite fired steam generators.
Lime plants.
Grain elevators.
*Iron and steel mills: BOF (opacity).
Revised steam generator.
Gas turbines.
*Kraft pulp mills 111(d).

NEW SOURCE PERFORMANCE STANDARDS UNDERWAY IN 1980

Automobile surface coating.
Hydrocarbon storage tank revision.
Glass manufacturing.
Stationary internal combustion engines.
Phosphate rock.
Metal furniture.
Organic solvent degreasing.
Graphic arts.

Paper coating.
Can coating.
Organic chemical fugitive emission.
Coil coating.
Industrial applicant coating.
Non-metallic minerals.
Ammonium sulfate.
Urea.
Sodium carbonate.
Steel foundry—electric arc furnaces.
Asphalt roofing.
Perchloroethylene dry cleaning.
Lead battery.
Volatile organic liquid storage.
Rubber tires.
SBR rubber products.
Vegetable oil.
Fabric printing.
Synthentic organic chemical processes: Air oxidation, vacuum production, inert gas product, upset losses, sulfur streams.
Petroleum solvent dry cleaning.
Synthetic fibers.
Gas distribution: Bulk terminals.
Industrial surface coating: Vinyl film.
Plywood manufacturing and veneer dryers.
Low BTU coal gas.
Refinery fugitive NSPS.
Waste fuel fired boilers.
Sewage sludge incinerator revision.
Industrial commercial boiler.
Nitrate fertilizer.
On-shore production.
Charcoal.
BOPF—revision.
Catalyst regenerator revision.
Secondry lead revision.
Sintering: Clay and flyash.
Gypsum.
Fiberglass.
Brick and related clay products.
Starch.
Detergent.
Secondary copper.
Secondary zinc.
Perlite.
Polymers and resins.
Secondary aluminum.
Ammonia.
Mineral wool.
Ceramic clay.
Castable refractories.
Borax and boric acid.
Phosphoric acid: Thermal process.
Uranium refining.
Animal feed defluorination.
Coke oven battery stacks.
Coke oven quenching.
Metallic minerals.

EMISSION STANDARDS

Mr. BOLAND. The total 1979 obligations were about $15.2 million. Is that correct?

Mr. HAWKINS. Yes, sir.

Mr. BOLAND. I realize that work was accomplished which doesn't yet appear in a final standard, but each year we seem to buy less

for more money in this program. The original plan was to have 44 standards established by the end of 1979. That was revised to 31 standards. Actually, it was 29 standards, only one more than 1978. The original 1980 estimate to have 40 standards has been revised downward to 36. What about that?

Mr. HAWKINS. The schedule, Mr. Chairman, that is in our operating plan will see the completion of action on 39 standards through 1980, 57 standards through 1981, and 93 standards through 1982. The entire program since fiscal year 1978, Mr. Chairman, has been attempting to focus on the end-year result of a phased program of accomplishing approximately 100 regulatory actions by the year 1982, which was the mandated date for completion of these actions. It has been a very heavy contract-dependent program in order to accomplish this massive action in, essentially, four fiscal years, and as a result we have had to adjust the schedules as we have gone along. But I can continue to assure the Committee that we are still on schedule with respect to completion of the bulk of these actions by 1982, as mandated by the Congress.

As you know, in our 1981 request we are trying to phase out the resources rather dramatically.

Mr. BOLAND. Which of the 29 promulgated new source performance standards will result in industry compliance costs exceeding $100 million?

Mr. HAWKINS. I would be glad to provide that for the record, Mr. Chairman, and of course we will be doing economic impact statements for those.

[The information follows:]

INDUSTRY COMPLIANCE COST OVER $100 MILLION

Revised Steam Generator is the only promulgated New Source Performance Standard which will result in industry compliance costs exceeding $100 million and will be subject to regulatory analysis.

ACID RAIN

Mr. BOLAND. Under the 1981 plan for energy and pollutant strategies development assessment, I note that you hope to determine the relationships between fine particulates visibility and sulfates acid rain so appropriate action might be recommended. These, of course, are two extremely complex issues. How high a priority do you consider this?

Mr. HAWKINS. This is a major priority, Mr. Chairman, and we did reprogram in order to try to accomplsh this in a more accelerated timeframe than we otherwise would have been able to do.

Mr. BOLAND. The reason I dwell on this is because the justifications don't attach much significance to these issues. It seems that they were added almost as an afterthought for 1981.

Mr. HAWKINS. I can assure you that that is not the case. During my spring review of the Air Quality Planning and Standards Office draft submissions, that was one of the changes that I personally directed. It would be almost eight months ago when preparing this budget.

Mr. BOLAND. Several people involved in air quality issues—including National Commission on Air Quality Chairman Senator

Gary Hart—have stated that acid rain is a dramatic example of a problem not addressed by the Clean Air Act.

Would you agree with that assessment?

Mr. HAWKINS. Yes, Mr. Chairman, we would agree that, as the Administrator pointed out yesterday, we have been effective in regulating sources for ground level sulfur concentrations in the vicinity of the sources themselves. But that program of regulation does not really address the interstate long-range transport of pollutants over hundreds of miles. That is the combined effect of creating an acid rain, or acid problem, especially in the northeastern region of the United States.

STATE IMPLEMENTATION PLANS

Mr. TRAXLER [presiding]. You have received the 49 State Implementation Plan revisions in 1979. Was any action taken against the States and Territories for late submission or failure to submit plans?

Mr. HAWKINS. I believe we have received plans in 51 States and Territories, and the effect of late submissions essentially occurred, as of July 1979. For those areas of the country that did not have approved plans as of July 1979, new source permit applications which came in after July 1979, could not legally be issued until EPA takes action to approve or conditionally approve those submissions.

In addition, under Section 176 of the Clean Air Act, the Administrator is required to initiate actions to withhold certain Federal funds if they make a finding that the State is not making a reasonable effort to submit a plan. On March 1, we did make that finding with respect to the State of Colorado, and Federal funds will be withheld for certain highway and waste water treatment projects in the State of Colorado, pending action on vehicle emission inspection legislation.

Mr. TRAXLER. In last year's Committee Report, we attempted to give you some guidance concerning the approval of SIP's containing implementation plans for lead?

Mr. HAWKINS. Yes.

Mr. TRAXLER. How did we work that out? Has the Agency complied with the guidance?

Mr. HAWKINS. The Agency has not acted inconsistently with that guidance——

Mr. TRAXLER. That is a fine answer. Stop there. We expect that when the issue does come up you will remember what was just discussed.

Mr. COUGHLIN. Could I ask a couple of questions? Just to clarify in my mind, have all the States filed SIP's now?

Mr. HAWKINS. All the States have filed complete or partial SIP's, yes. Some do not address all the pollutants, but we do have submissions from those who are required to submit.

Mr. TRAXLER. How many have been approved?

Mr. HAWKINS. I am able to give you a detailed breakdown of the various categories. The final actions have been taken on complete plans in ten States, final action has been taken on partial plans for nine States, and final rulemaking for eleven additional States are

in the process, and final rulemaking packages for nine additional States are expected to be received in Headquarters this month.

PENNSYLVANIA SIP

Mr. COUGHLIN. At the risk of being parochial, can I ask about Pennsylvania's plans?

Mr. HAWKINS. Pennsylvania is expected to be received in Headquarters this month.

JULY 1979 FREEZE ON STATE FUNDS

Mr. TRAXLER. There is a provision in the Clean Air Act that certain Federal funds be frozen at the end of June 1979 if the air quality violates Federal standards, and approved plans to clean up pollution are not in place.

Has this provision been invoked now?

Mr. HAWKINS. This provision has been in effect for at least a period of time in all 50 States, since July of 1979. It has had limited "real world" economic effect, because it applied to permits filed after July of 1979. There was advance notice given to the world on the effect of this provision, and many applicants filed their applications in advance, in July of 1979, for projects which they contemplated wanting to get approval of in the next six months.

As time continues, we expect this problem will be resolved by the completion of rulemaking actions, and the completion of State planning actions that we are seeing go forward right now.

Mr. TRAXLER. So at least as of this time, this has not had a significant effect on industrial development in the States?

Mr. HAWKINS. That is correct. Our judgment in this problem is this provision of law has had the effect that Congress sought in enacting it, which is to place high priority both at the Executive Branch and the Legislative Branch, in the State government for prompt action. Because of the way we implemented it, it has not had an adverse economic consequence, but rather it has been there as a very clear indicator of the need for prompt action. I think we have gotten more action, more quickly in finishing up these State regulatory programs than we would have in the absence of that provision, and we have done so without paralyzing any economy for any State, and without causing job losses.

Mr. TRAXLER. Mrs. Boggs, do you have anything at this time?

Mrs. BOGGS. No.

MOBILE SOURCE STANDARDS AND GUIDELINES

Mr. TRAXLER. I am going to go back to the mobile source standards and guidelines program on page A-54. We notice that there appears to be a change in the thrust of your mobile source in-use emission assessment category. For 1979, we see $1,930,000, nothing for 1980 budget estimates, and the current estimate in 1980 is 2,540,000, with an estimate of 2,369,000 in 1981. Which seems to be a change from a contracted effort in 1979 to in-house in the 1980 estimate, and then a shift back to a contract operation in the current 1980 estimate. What accounts for this flip-flop?

Mr. HAWKINS. The absence of a figure under the 1980 budget estimate simply reflects the fact that, in our submission, the number was just omitted. There has not been any change in 1980, the funds were inadvertently in the in-house activity.

Mr. TRAXLER. Does that indicate then that it is all contract?

Mr. HAWKINS. These resources are for contract support to carry out the in-use emission assessments, and what this submission indicates is that there was, from 1979 to 1980, an increase, and from 1980 to 1981 a slight decrease.

STATE INSPECTION AND MAINTENANCE

Mr. TRAXLER. Turning to page A-56, it indicates that of the 29 States required to establish I&M, 22 States have passed legislation and efforts to obtain legislation are continuing in the seven remaining States.

For the record, provide a list of the 29 States. Do the 22 States with enacted I&M plans have maximum dollar limits per inspection, or some other consumer protection device?

Mr. HAWKINS. A number of States that have enacted legislation do have some consumer protection provisions articulated in the authorizing legislation itself. In some cases, that takes the form of a maximum dollar limit, and in other cases, it takes the form of differing dollar limits, and we could provide that for the record.

Mr. TRAXLER. Please.

[The information follows:]

INSPECTION MAINTENANCE PROGRAM

Twenty-one States have I/M legislative authority. The following list indicates which of these have maximum dollar limits per inspection or some other consumer protection device. Eight States lack I/M legislative authority. Please note that Colorado no longer has acceptable authority and has been dropped from the original list of 22 States.

INSPECTION/MAINTENANCE PROGRAM STATUS

Legislative authority [1]	Inspection fee	Repair cost waiver
Connecticut	$10	$70.
Rhode Island	4	
New Jersey	[2] 2.50	
Delaware		
District of Columbia		
Maryland	7.50	10 percent. [3]
Pennsylvania		50 to 250. [3]
Georgia	3	50.
Tennessee		
New Mexico	7	200 or 15 percent.
Missouri	4.50	
North Carolina		
Massachusetts	10	100 or 10 percent. [3]
Illinois	6.50	
Arizona	5	75.
Nevada	[4] 12-17	75.
Texas		
Oregon	5	
Washington	10	50.

INSPECTION/MAINTENANCE PROGRAM STATUS—Continued

	Legislative authority [1]	Inspection fee	Repair cost waiver
Utah			
New York			

[1] Colorado no longer has acceptable authority and has been dropped from the original list of 22 States.
[2] Subsidized by State.
[3] Percentage of value of vehicle.
[4] Observed range; no limit has been specified.

LACK OF AUTHORITY

Wisconsin, Virginia, California, Kentucky, Michigan, Ohio, Indiana, and Colorado.

PORTLAND INSPECTION AND MAINTENANCE

Mr. TRAXLER. The Portland inspection and maintenance plan is mentioned on page A-60. Has the Agency provided financial support to Portland for this endeavor, and if so, how much?

Mr. HAWKINS. We are doing a very carefully controlled study, as close to a laboratory study that one can do of a real world activity as possible, I would say, and it has provided a great deal of useful information to us.

We are also providing support funds for inspection and maintenance programs in other metropolitan areas around the country. The Portland study is both an implementation program as well as a very carefully controlled research study.

[The information follows:]

PORTLAND INSPECTION AND MAINTENANCE

In response to your question about financial support for the Portland Inspection/Maintenance study, EPA has provided approximately $4,100,000 from initiation of the study in 1975 through fiscal year 1979. An additional $500,000 is being provided in 1980.

Mr. TRAXLER. Turn to State programs resource assistance on page A-61. The total 1981 request is $88,753,000, an increase of $4,406,000 above the 1980 current estimate. Page A-63 indicates "twelve States enacted legislation to implement an I&M program or committed to implement an I&M program based on existing legal authority."

How do you reconcile this statement with the one on page A-56 that 22 States enacted I&M plans?

Mr. HAWKINS. The statement on page A-63 refers to the number of States adopting legislation in 1979. 22 States now have adequate legislation authority.

Mr. TRAXLER. Would you provide for the record the 26 States which were granted attainment date extensions for ozone and carbon monoxide. Indicate if extension is for ozone, carbon monoxide or both.

Mr. HAWKINS. Yes, I will be glad to do that.

[The information follows:]

ATTAINMENT DATE EXTENSIONS

Twenty-nine states have received attainment date extensions to 1987. The following list identifies those 29 states and indicates whether the extension is for ozone, carbon monoxide, or both.

States receiving extensions to 1987:

1. Connecticut—O_3 and CO.
2. Massachusetts—CO and O_3.
3. Rhode Island—CO and O_3.

4. New York—CO and O_3.
5. New Jersey—CO and O_3.
6. Pennsylvania—CO and O_3.
7. Maryland—CO and O_3.
8. Delaware—O_3.
9. District of Columbia—CO and O_3.
10. Virginia—O_3 and CO.
11. Georgia—CO.
12. Tennessee—CO and O_3.
13. North Carolina—CO.
14. Kentucky—CO and O_3.
15. Ohio—CO and O_3.
16. Illinois—CO and O_3.
17. Indiana—O_3 and CO.
18. Michigan—CO and O_3.
19. Wisconsin—O_3.
20. New Mexico—CO.
21. Texas—O_3.
22. Missouri—CO and O_3.
23. Colorado—CO and O_3.
24. Utah—CO and O_3.
25. Arizona—CO.
26. California—CO and O_3.
27. Nevada—CO.
28. Washington—CO and O_3.
29. Oregon—CO and O_3.

TRANSPORTATION CONTROL MEASURES

Mr. TRAXLER. Provide for the Committee some examples of transportation control measures which might be required by State implementation plans.

Mr. HAWKINS. For the record?

Mr. TRAXLER. Yes.

Mr. HAWKINS. I would be happy to do so.

[The information follows:]

TRANSPORTATION CONTROL MEASURES

The following are examples of Transportation Control Measures which might be required by State Implementation Plans.

(1) Baltimore, Md., has committed to implement a wide range of transportation measures including: Park-and-Ride Lots, Improved Rail Transit, Preferential Parking for Ridesharing; Bus Service Improvements; Encouragement of Bicycling. Baltimore expects to annually save 21.7 million gallons of gasoline in implementation of these measures for air quality.

(2) Los Angeles has established an extensive program for inter-governmental consultation. Testimony at the public hearing on the Los Angeles plan indicated the effectiveness of the programs.

(3) Pittsburgh has developed a description of roles and responsibilities in transportation decision-making which is being used as an example for other cities.

(4) Philadelphia has developed an innovative public participation program for 1982 SIP development that implements EPA-DOT Expanded Guidelines and is being used as an example for other cities.

(5) Boston has submitted an extensive list of transportation measures.

(6) Generally, the measures we have been receiving from cities include: ridesharing; transit improvements; traffic engineering improvement; inspection and maintenance; parking restrictions.

SECTION 175 AIR GRANTS

Mr. TRAXLER. Page A–65 addresses the Section 175 program—grants for planning for control of carbon monoxide and photochemical oxidants in nonattainment areas. This program was funded with $50 million in 1979, $25 million of which was a congressional

add-on. The Agency requested an additional $25 million in 1980, but this was disallowed by the Office of Management and Budget. The 1980 budget indicated $25 million would be obligated in 1979 and $25 million in 1980. This year's justification indicates that $48,500,000 was transferred to the Department of Transportation so it could award the grants to the Metropolitan Planning Organizations. What were the total obligations through September of 1979?

Mr. HAWKINS. The total obligations through September of 1979, Mr. Traxler, were $9.7 million.

Mr. TRAXLER. And what were the obligations through February of this year?

Mr. HAWKINS. Through February 21, the obligations were $15 million.

Mr. TRAXLER. Will you also provide for the record a list of the cities that have received the grants in the first and second rounds and the amounts that they received?

Mr. HAWKINS. Yes.

[The information follows:]

The following list identifies cities which have received first round 175 grants.

Fiscal year 1979—Section 175 obligations by area

Area:	*Obligation*
Lewiston-Auburn, Maine	$8,000
Rochester, N.Y	136,000
NYC, N.Y	1,950,000
Buffalo, N.Y	336,000
Albany, N.Y	125,000
Washington, D.C	150,000
Pittsburgh, Pa	100,000
Philadelphia, Pa	138,000
Atlanta, Ga	149,188
Louisville, Ky	149,000
Memphis, Tenn	128,000
Nashville, Tenn	9,500
Peoria, Ill	75,000
Chicago, Ill	630,000
Springfield, Ill	10,000
Fort Wayne, Ind	85,000
Detroit, Mich	600,000
Minn./St. Paul, Minn	300,000
St. Cloud, Minn	13,689
Rochester, Minn	9,958
Duluth/Superior, Minn	10,000
Youngstown, Ohio	115,000
Cincinnati, Ohio	340,000
Akron, Ohio	112,000
Lima, Ohio	10,000
Toledo, Ohio	150,000
Steubenville, Ohio	10,000
Cleveland, Ohio	357,000
Columbus, Ohio	260,000
Dayton/Springfield, Ohio	412,000
Madison, Wis	70,000
Green Bay, Wis	10,000
Des Moines, Iowa	75,000
Wichita, Kans	92,615
St. Louis, Mo	109,550
Kansas City, Mo	280,538
Lincoln, Neb	21,975
Omaha, Neb	21,000
Colorado Springs, Colo	66,000
Denver, Colo	167,350

Area:	*Obligation*
Larimer-Weld, Colo	56,509
Billings, Mont	9,200
Salt Lake City, Utah	91,701
Los Angeles, Calif	193,300
San Diego, Calif	40,000
Sacramento, Calif	25,000
Los Angeles, Calif	776,000
Las Vegas, Nev	27,000
Portland, Oreg	129,050
Eugene, Oreg	21,600
Portland, Oreg	50,000
Seattle, Wash	323,384
Spokane, Wash	61,000
Grand total	$9,596,107

The following list identifies cities which have received second round 175 grants.

Section 175 awards—fiscal year 1980 Oct. 1, 1979, to Feb. 21, 1980

Urban Area:	*Award*
Boston, Mass	$308,121
Brockton, Mass	27,234
New Bedford-Fall River, Mass	40,351
Cape Cod, Mass	26,344
Fitchburg-Leominster, Mass	20,758
Lowell, Mass	29,233
Lawrence-Haverhill, Mass	22,473
Manchester, NH	25,000
Providence, RI	177,033
Hartford, Conn	175,000
Bristol, Conn	40,000
Waterbury, Conn	42,000
Essex, Conn	5,000
Bridgeport, Conn	58,000
Danbury, Conn	35,000
Middletown, Conn	33,000
Brooklyn, Conn	12,000
Warren, Conn	5,000
New Haven, Conn	100,000
Norwich, Conn	43,635
Rowayton, Conn	58,000
Derby, Conn	35,000
Williamantee, Conn	12,000
Syracuse, NY	101,000
Trenton-Camden, NJ	46,667
Washington, D.C	469,350
Philadelphia, Pa	535,000
Baltimore, Md	405,000
Allentown, Pa	153,000
Wilmington, Del	95,000
Wilkes-Barre, Pa	59,000
Scranton, Pa	55,000
Orlando, Fla	35,000
Columbia, Ohio	20,000
Tampa, Fla	25,000
Quad Cities, Ind	84,000
Indianapolis, Ind	200,000
South Bend, Ind	60,000
Northwest Ind	130,000
Flint, Mich	105,000
Lansing, Mich	100,000
Western Michigan (Grand Rapids)	110,000
Canton, Ohio	95,000
Mansfield, Ohio	10,000
Dallas, Tex	368,000
St. Louis, Mo	389,550

Urban Area:	*Award*
Lincoln, Neb.	22,600
Modesto-Stanislaus, Calif.	35,000
Total	$5,038,349

OBLIGATION OF SECTION 175 FUNDS

Mr. TRAXLER. Are you confident that the entire $50 million will be obligated by September 30?

Mr. HAWKINS. Yes, as I indicated earlier to the Chairman, Mr. Traxler, we had a strategy to avoid misallocation of these resources by requiring the metropolitan areas to develop adequate work plans. We now have adequate work plans developed and that we are confident we will be able to disperse the monies completely by the end of this fiscal year.

EMISSION INSPECTION PROGRAMS

Mr. TRAXLER. Page A-68 indicates one 1980 accomplishment is securing legislation for mandatory I&M Programs. Yet on page A-56, the same thing is indicated under Mobile Sources. Whose responsibility will this be?

Mr. HAWKINS. The responsibility for assuring that the States have adequate emission inspection programs is a joint responsibility between headquarters staff and the regional office staff. Essentially, the headquarters staff provides full technical support and national policy guidance and the regional office staff is responsible as they are in other State implementation plan matters, for implementing that national policy guidance in discussions with specific States.

FUEL ECONOMY PROGRAM

Mr. TRAXLER. A major thrust of the 1981 program is improved fuel economy values. Virtually the entire $712,000 and 12 position increase on page A-70 is for fuel economy. Is that correct?

Mr. HAWKINS. Yes, we have a substantial increase in our fuel economy efforts between 1980 and 1981.

I would like to confirm what I mentioned to Mr. Sabo yesterday regarding the Department of Transportation request for fuel economy resources. Their request does include a $500,000 contract program funding request. And as I explained yesterday, that is for the purpose of resolving apparent violations by the manufacturers developed from EPA's initial data set. The program will not be used at EPA facilities, but rather at contractor facilities in the private sector which have been approved and certified as adequate facilities by EPA. We regard that as a very appropriate complement to our activities and it is my understanding that the Department of Transportation views our activities as essential to support their efforts to carry out the law.

Mr. TRAXLER. In your justifications, you indicate that the 12 positions, about $300,000 of the $712,000, will be used for personnel costs. What will you utilize the other $412,000 for?

Mr. HAWKINS. I will have to provide that for the record.

[The information follows:]

EXPLANATION OF INCREASE

In Mobile Source Preproduction Compliance Verification, the Salaries and Expenses appropriation increases by $712,000 in 1981, but FTE only increase by 5. Additional in-house costs associated with increased confirmatory testing for fuel economy accounts for the large increase in the Salaries and Expenses appropriation. Greater ADP costs associated with increased computer capability, increased consumables such as fuel and other supplies, and requirements for more complicated equipment as well as replacement of old equipment, all contribute to these costs.

RESOURCES FOR FUEL ECONOMY

Mr. TRAXLER. Provide also for the record how many people and dollars are devoted to fuel economy in 1979 and 1980.

Mr. HAWKINS. I could do that right now if you would like.

Mr. TRAXLER. Please.

Mr. HAWKINS. In 1979, 22 full-time equivalent personnel and $686,000 were devoted to fuel economy: In 1980, 44 full-time equivalent personnel and $1.6 million will be devoted; in 1981, 52.9 full-time equivalent positions and $2.5 million.

EPA MILEAGE FIGURES

Mr. TRAXLER. There has been a great deal of publicity on the Agency's shift in emphasis in the public portion of the fuel economy program. Basically you now provide one figure. Is the public more accepting of that instead of seeing the city, highway and combined figures? How is that working out?

Mr. HAWKINS. In the past, we did give both city and highway average weighted numbers. There appears to be less dissatisfaction with provisions of the one number than in the past.

It is complicated by the fact that the label on the vehicle and the EPA mileage guide, which are available in all showrooms, only feature the one number that you have mentioned, while nearly all of the manufacturers' advertisements, both in print and in the visual media, have two numbers. This is because there is a highway number generated for the purpose of compliance with the fuel efficiency legislation and the Federal Trade Commission does not feel that the government has legal authority to prevent that number from appearing in advertisements, provided that there is an explanation that the EPA number is the one that is based on what was formerly the city test. But there are some rather unique ways that the manufacturers try to comply with the Federal Trade Commission guidelines and yet call attention to the highway number.

I saw a television ad the other day which had the highway number flashing on and off. It was in smaller print in accordance with the FTC directive, but it happened to be flashing on and off.

Mr. TRAXLER. Well, I would like to think that——

Mr. HAWKINS. That was not a domestic manufacturer, I might say.

Mr. TRAXLER. I was going to say that is the responsibility of the ad agency. Manufacturers do not take any credit for the ads, at least when it is improper.

I read somewhere that as a general rule it is more likely that the city figure or gasoline figures would be overstated, while diesel figures generally come out of the lab as an understatement of the

real efficiency of the engine. Does that sound accurate? Is that correct?

Mr. HAWKINS. There is some data to suggest that there is a difference between the average real world driving performance and the fuel company performance for gasoline engines, and that there is not the same difference in performance for diesel engines. There are different explanations for this. One of them is that the diesel engine performance appears to the less affected by other than optimal weather conditions. If it is cold and raining, you may get poorer fuel economy in a gasoline engine but the impact on a diesel engine is not so great.

STATIONARY SOURCE ENFORCEMENT

Mr. TRAXLER. Turn to page A-79, stationary source enforcement, the 1979 plan contained in the 1980 budget justifications was 471 permanent positions, 500 full-time equivalents and $24,362,000. Actual figures were considerably less: 406 positions, 439 full-time equivalency and $22,517,000. What accounts for these shortfalls?

Mr. MILLER. In 1979?

Mr. TRAXLER. Yes.

Mr. MILLER. Basically as we indicated the other day, we had a situation which made it very difficult for the program to get up to the increased levels. That has changed since.

Mr. TRAXLER. Is it your statement then that the entire shortfall in this area was due to the freeze?

Mr. MILLER. Not the entire shortfall. I think that was the main component. There was some reprogramming to augment the SIP program.

Mr. TRAXLER. The 1980 current estimate of positions has been revised down to 479. On that basis, and looking at the 1979 experience, why is supplemental funding needed for the October 1979 pay increase? Can you not absorb that?

Mr. MILLER. I can supply that for the record.

[The information follows:]

SUPPLEMENTAL PAY REQUIREMENT

The need for the supplemental funding was not based on the year-old estimate of 502 permanent positions. The supplemental request of $524,300 for this program is required to fund the pay raise costs related to the 522 workyears which are estimated for 1980.

ECONOMIC STUDIES

Mr. TRAXLER. Why do you need $740,000 for regional industrial, technical and economic studies in 1980, after receiving $750,000 and $1,157,000 for such studies in 1979 and 1980, respectively? How long are we going to go on with regional industrial, technical and economic studies?

Mr. MILLER. That is an ongoing effort. It is a basic complement of enforcement against specific industrial categories. We have to maintain an updated program of the industries that we are dealing with.

Mr. COSTLE. If we are going to do good economic studies, we have to stay current.

Mr. TRAXLER. So you see that as an ongoing program?
Mr. COSTLE. Yes.

MOBILE SOURCE ENFORCEMENT

Mr. TRAXLER. The mobile source enforcement program begins on page A–84. The program is basically steady, but again we notice that you fell short of position projections. Planned in 1979 was 138. Your original estimate was 158. The actual was 117. Does your same answer hold true in this category as in my earlier question?
Mr. MILLER. Yes, sir.
Mr. TRAXLER. Were there any other factors besides hiring difficulties?
Mr. MILLER. Regional reprogramming.
Mr. COSTLE. It is generally fair to say, I think, Mr. Chairman, that reprogramming actions are personnel actions that take the same amount of paperwork as new hires, and considering the level of reprogramming within EPA, there has not been a commensurate increase in management support.
While we had some substantial increases in productivity in our personnel processing, given the freeze and the amount of paperwork involved to reprogram one position from one office to another, the process is so much more drawn out. It is not a simple matter as you would find in private industry.

FUEL SWITCHING

Mr. TRAXLER. The justifications indicate that fuel switching, that is from unleaded to leaded, is occurring at, you estimate, a rate of 8 to 10 percent. Is there anything that could be done in this area to address this problem? It certainly defeats your best efforts at air emission controls.
Mr. MILLER. We have substantially redirected the emphasis of the mobile source enforcement program to emphasize the fuel switching and tampering problems.
We have created two field offices, one in Washington and one in Denver, which are directed at fleet and muffler shops and dealerships in the larger cities with the worst attainment problems. We go in and survey those areas to find violations, particularly in fleets. Our inspections have gone up between 1979 and 1980 about five to sixfold in these two areas. So we are putting emphasis here.
Mr. TRAXLER. Obviously considering the number of vehicles involved, it is extremely difficult?
Mr. MILLER. Yes.
Mr. COSTLE. It really is. We have a public education problem for the individual owner who tinkers. We can reach the large fleets and the dealers on a reasonably systematic basis. There are substantial penalties associated with switching. Bringing action against the Houston Police Department, who deliberately switched fuels, brought a lot of publicity last year. We hope it begins to register in the public mind. In addition there have to be training programs for mechanics so that they understand what the systems really looks like and, finally, the public hopefully will come to understand that you really do not gain anything by switching. In fact, you lose in terms of lifetime maintenance cost on the car.

We are still dealing with a perception that came about in the very early years of the emission control program that there was a direct tradeoff between fuel economy and emissions control, and if you disconnected the device you would improve fuel economy. With the early systems, that was true. With the catalyst it kind of works the other way around. There are other things that work that make it difficult. In a period of real gas shortage, particularly if there is a disproportionate shortage of unleaded gas, you have the anxiety type of switching that goes on. People are afraid they are not going to get fuel.

We have been told this year that there are adequate supplies of unleaded gas and even if we had an overall shortage of gasoline, the fact is we would not experience what we saw last summer. Some switching did occur, not only because unleaded gas was unavailable but because, for a period of time, the price differential between unleaded and leaded slipped to about five cents a gallon. That differential has since narrowed again, and our economic analysis suggests that if we get a price differential between four cents and five cents, people begin switching because they are trying to save money.

Mr. TRAXLER. You conducted almost 40,000 refueling observations in 1979 and you anticipate about 5,000 each in 1980 and 1981. What do you do if you observe a gas station attendant switching?

Mr. MILLER. We have two basic programs there. Our survey of refuelings does not have any enforcement implications at all. It is purely a research effort to determine how much fuel switching is going on and where so that we can understand the phenomenon better.

We are, in addition to that, conducting a number of inspections on fuel switching in which we do have enforcement follow-up. But that 39,500 is a conservative number.

Mr. TRAXLER. How effectively is your vapor recovery compliance operating? I guess what I really want to know is how effective is the recovery equipment? Is it really working? What do the operators think?

Mr. MILLER. There are basically two phases to that program.

The first phase is essentially bulk transfers and bulk storage. That is what is in effect now.

The second phase gets to the gasoline station. We believe that the controls of the requirement are very effective.

Mr. TRAXLER. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman.

I would like to follow up on this subject and then I have a couple of general questions, if I might.

Are the observations of fuel switching being done by private contractors or EPA personnel?

Mr. MILLER. The observations conducted for the purpose of doing research to figure out what the rate of switching is, is done by contractors.

Mr. COSTLE. The other is done by enforcement.

Mr. COUGHLIN. The enforcement is done by EPA?

Mr. MILLER. Yes.

Mr. COUGHLIN. What do you do when you observe this? Do you prosecute people?

Mr. MILLER. We assess administrative penalties.

Mr. COUGHLIN. How many penalties do you assess?

Mr. MILLER. I will supply that for the record.

[The information follows:]

ADMINISTRATIVE PENALTIES

Eight (8) fuel switching cases and 48 cases involving pump nozzle violations (which facilitate fuel switching) were brought during fiscal year 1979. These 56 cases involved potential penalties of $286,550. In addition, 129 other cases involving fuels violations with potential penalties of $660,590 were brought during fiscal year 1979.

Eleven (11) fuel switching cases and 16 cases involving pump nozzle violations (which facilitate fuel switching) have been brought as of March 6 during fiscal year 1980. These 27 cases involve potential penalties of $2,028,000. In addition, 10 other cases involving fuels violations with potential penalties of $53,050 have been brought this fiscal year.

Mr. HAWKINS. I think, as we mentioned, the bulk of the enforcement activities is directed at the fleet operators.

The observations are to provide us with an assessment of just what is happening out there and is not a basis for enforcement action. But we get a weekly report on different parts of the country which gives us an estimate of trends, and helps us spot problems and identify where to direct our resources.

Mr. MILLER. Concentrating on fleets is important because we get the biggest return for our money. If we take action against a fleet, we will have an effect on fleets all over the country.

Secondly, almost 60 percent of the new cars now are sold to people who use them commercially and they are not sold to you and me for our personal use.

Mr. COUGHLIN. What sort of administrative remedies do you have available?

Mr. MILLER. The assessment of a civil penalty.

Mr. COUGHLIN. Directly a civil penalty?

Mr. MILLER. Yes, sir.

Mr. COUGHLIN. Could you also furnish for the record the contracts of fuel switching?

Mr. MILLER. Yes.

[The information follows:]

FUEL SWITCHING CONTRACTS

In fiscal year 1979, $92,000 in contracts were devoted to fuel switching observations. In fiscal year 1980, $150,000 will be utilized.

MOTIVATION RESEARCH

Mr. COUGHLIN. Have your observations settled the disputes between DOE and EPA over the extent of this practice?

Mr. MILLER. I believe so.

Mr. HAWKINS. I am not sure that there is some dispute about the extent, as much as, different hypotheses about the motivation.

Mr. MILLER. We are also doing motivational research when switching occurs.

INSPECTION AND MAINTENANCE PROGRAMS

Mr. COUGHLIN. Now, you have indicated approximately 40 million automobiles will be subject to mandatory inspections annually. How does this work?

Mr. HAWKINS. This, Mr. Coughlin, would be in the State run or State supervised vehicle emissions programs that are being authorized by State Legislatures in a variety of States across the country.

Mr. COUGHLIN. How many States are there now?

Mr. HAWKINS. Twenty-nine States do require such programs in order to comply with the terms of the 1977 Clean Air Act Amendments. As of today, 22 States have adequate legal authority—Pennsylvania is one of the States which does have adequate legal authority and is moving forward to implement a program.

Mr. COUGHLIN. Now, some people maintain that this is maybe effective in some parts of the country but not effective in others. Is it effective in the reduction of ozone peaks?

Mr. HAWKINS. The program is highly effective in improving emissions performance in use both of hydrocarbons and carbon monoxides. Studies that we have done, both in one end of the country to the other, from New Jersey to Portland, have indicated substantial effectiveness. The reductions in hydrocarbons that can be accomplished with this program will in turn be effective in reducing the ozone concentrations in those areas that have serious ozone problems.

Mr. COUGHLIN. Do you have any alternatives to suggest to a mandatory inspection and maintenance program?

Mr. HAWKINS. This is one of the more cost effective programs, and when a State takes adequate care to run it well, it can be run with a minimum of inconvenience to the consumer. One of the very positive byproducts of such programs is that the service industry actually gets trained and motivated to learn about good emissions performance on vehicles.

In New Jersey, for example, service stations now advertise the fact that they have mechanics which are certified to do emissions repair work. They have been trained and they know how to do it and they know how to do it right. That is a service to the consumer which the industry has never provided before. It has come about because there is a market for this service given the necessity of the vehicle owner having to have his vehicle checked.

Mr. MILLER. Another byproduct is in the fuel economy area. In order to have a well-tuned car, you need fuel tuning.

COST OF CLEAN AIR ON ECONOMY

Mr. COUGHLIN. On another subject, in a report issued to Congress this past year, EPA estimated that the capital investment for implementing the Clean Air Act and Clean Water Act over the period 1977 to 1979, will require the steel industry to invest $3 billion to comply with these laws. It is estimated that the annual pollutant cost for coal and oil would cost $7 billion over this period.

What impact do you think this all has on the economy?

Mr. DRAYTON. There has been a small increase in inflation—roughly 0.2 to 0.3 of 1 percent more inflation than we would have had otherwise.

Mr. COSTLE. It should be pointed out that that 0.2 or 0.3 percent is measured in terms of consumer price index. No effort is made in trying to calculate any offset in benefits as a result of cleaner air or healthier communities with less work time lost on the job. You are looking strictly at the cost column and not the benefits column. The remarkable thing is that the figure is, in fact, at the level of only 0.2 of 1 percent. When you compare that to the housing costs, hospital costs, energy prices, and food costs, the cost of clean air is a pretty good buy.

Mr. COUGHLIN. For the record, has air quality improved significantly over the past ten years?

Mr. COSTLE. I think it has. I think clearly it has. I think only two cities in the country exceed health standards for sulfur. I think that we still have a particulate problem in our major cities. This is again another reason why I was specifically concerned with the impact that the diesel might have in aggravating that problem.

We also made progress in oxidant reductions. There has been a 33-percent increase in vehicle miles traveled over the last seven years. So we have capped the worst problem. We are gaining ground on them. We have not had to shut people down. We have not had to disrupt the economy.

We think the overall negative impact is minimal, and that there are some actual and positive impacts.

STATE IMPLEMENTATION PLANS

Mr. COUGHLIN. It is my understanding that EPA has adopted a policy specifically to the iron and steel industry, of issuing resumptive available technology control guidelines based on the most stringent provisions by steel companies anywhere in the country, and requiring inclusion of this in the implementation plans, is that correct?

Mr. COSTLE. That is correct.

Mr. HAWKINS. I think that articulation of it suggests an approach that is considerably harsher than in fact what our policy is.

Mr. MILLER. We have entered into consent decrees now with some 60 percent of the steel sources around the country. What we have done is to look at the particular kinds of controls that have been committed to their range, and indicated that the SIP should have special technologies in that range. It is not a matter of taking the most stringent condition out of any SIP and applying it across the board because each one is tailored to the specific configurations of that plant, and there is obviously variation in them.

Mr. COUGHLIN. Does the issuing of this kind of guideline run contrary to the Clean Air Act, that circumvents the proper regulatory procedures of public comment?

Mr. MILLER. There has been no guideline issued, as I indicated. It is an evaluation of the kinds of controls that have been permitted and how that fits in with the particular kind of plan that we are talking about.

Mr. COUGHLIN. So you have not issued guidelines?

Mr. COSTLE. In the sense that we have reasonably set controls in these cases there is a guideline. But there is a flexible ban in terms of how we define that, depending on technology applied, and the unique circumstances of individual plans. So in essence that is a guideline. It sets the boundaries.

Mr. HAWKINS. I think basically what we have done is provide some form of coherent, organized communication to the regional offices on what constitutes reasonable controls.

In other words, what we have, are a number of source specific judgments that must be made by the States, with prior review by the EPA Regional offices. In order to make those judgments in a consistent fashion, Headquarters has always provided, on an informal basis, responses to individual inquiries.

In addition to responding to individual inquiries, we have compiled information which we provided to the Regional Offices that does not wait for an inquiry but rather anticipates it. But we do not regard this as any kind of a building regulatory document. It is simply a resource tool that helps the State and Regional Offices make consistent decisions.

Mr. COSTLE. The crux of this matter is that in the meantime we negotiate mutual consent decrees, plant by plant. We want to be sure that the SIP's that come in, in fact reflect those consent decrees.

So the consent decrees amount to deficiency, plant-by-plant, the special circumstances that are found.

Mr. COUGHLIN. If you endorse that, it would seem to me it would avert a State implementation plan, because it would not allow for flexibility.

Mr. COSTLE. Well, most of the challenges that we have had, go to the issue of enforceability. I told the State Directors emphatically that there was no way that I could relinquish my legal responsibility and ensure that we had enforceable SIP's under the Federal government. We can provide some more information for the record, but some of SIP's that were proposed would simply take us out of the action. With a lot of these consent decrees, there has been boilerplate language.

For the steel industry, changing the SIP, is another way of changing that consent agreement, and we have acknowledged in some areas that that makes sense to do it. There are some boilerplate SIP requirements that were originated seven or eight years ago, and are unrealistic. We do not know how to measure it. For technical reasons, not substantive environmental reasons, we have been more than willing to recognize SIP changes, but in some instances States try to take it further than that.

Mr. MILLER. We are not subverting a SIP process by, in essence, coming out with a rulemaking that has not gone through formal procedures. We are working with the States, to try to make sure their SIP's reflect what we mutually think is the best that can be done in that area. To the extent that there is a problem, it will come out in the formal SIP approval process, and will go through rulemaking at that point. For a more parochial interest, there is not a problem in Pennsylvania. One of the things that we are trying to do is to make sure that the rest of the country measures up to Pennsylvania's standards.

MODIFICATIONS TO REVIEW RULES

Mr. COUGHLIN. On September 5, 1979, EPA proposed clean air regulations—modifications to new source review rules. Under the proposal, many of them would be reticent. This is only a small fraction of the criteria required for determining whether or not a new source is subject for review. What is the status of these regulations now?

Mr. HAWKINS. This proposal was proposed in response to the court's decision in the case of Alabama Power versus EPA, which has to do with our prevention of significant deterioration programs. Our regulations had incorporated into them a threshold for modifications, so that only sources with very large modifications would have been required to go through the review program. The court read the statute and said that our threshold was not authorized by Congress, and directed us to comply with the statute as written, which has no threshold in it.

Now, in fact, the impact should not be substantial, because of another change that we made in that proposal, which is to allow the emission increase to be assessed based on the plantwide net change in emissions.

Mr. COUGHLIN. The bubble plan?

Mr. HAWKINS. That is right. So a modification at the existing plant site can be compensated for by another one on site. If it is a minor increase in emissions, as indicated here, it is often very easy to find a minor reduction in an emission somewhere else.

So the result would be that the facility would not have to go through the review. The status of the regulations is that we have taken public comments, we have reopened the publications for additional comments, and we have sought a stay of the court order, so that we may put these regulations into effect in June of 1980.

Mr. COUGHLIN. It is my understanding that the court decision in the Alabama Power Company case only sets forth the appropriate legal standard under which EPA can administer the Act. It does not set forth absolute levels for review, as you seem to be indicating.

Actually, as I understand it, it said that EPA could eliminate, or defer modifications in which emissions could be considered de minimis.

Mr. HAWKINS. There is language in the ruling that authorizes a de minimis exemption, and our proposal does solicit comments on what would constitute a de minimis exemption. So the Agency's regulations will respond to the de minimis flexibility that is provided.

What the court seemed to indicate in its opinion was that our previous threshold of 100 and 250 tons could not be justified as de minimis.

Mr. COUGHLIN. Do you intend to ask Congress to modify the law to permit your threshold criteria to be regarded as de minimis?

Mr. HAWKINS. Well, as I indicated, we think that because of the other contemporaneous change we are making, in most cases in the real world you will not see a burdensome effect of the modification definition change. We are changing also the definition of what it is

to increase emissions at a source, so that you can compensate for those.

I think we should probably get some experience in trying to operate under the current law and combine the effects of the modification definition change before we make any decisions on whether to seek legislative changes. We would not have anything to tell you, except a theoretical concern at this point.

MEETING 1981 EMISSION STANDARDS

Mr. COUGHLIN. Finally, on another subject, let me ask, domestic and foreign auto makers received two year delays in meeting 1981 emission standards because they lacked effective technology. Will you be able to meet these standards in two years?

Mr. HAWKINS. I believe you are referring, Mr. Coughlin, to the carbon monoxide waivers which are authorized to go from the statutory 3.4 to 7.0 gram mile standard on a showing of the lead-time problems associated with complying with the standards in 1981. Yes, we do believe that both domestic and foreign manufacturers will be in a position to comply with the statutory standards at the expiration of those waivers.

Mr. COUGHLIN. Do those waivers really have a significant effect on air quality?

Mr. HAWKINS. No, because the difference in having the standards apply one year or two years later than they would ordinarily apply, does not show up on a national level as an enormous environmental difference in any out year projection of air quality.

Mr. COUGHLIN. Was that stringent standard necessary in the first place?

Mr. HAWKINS. We think it is, and this was deliberated in 1977 in this Congress. If the carbon monoxide levels were continued at seven grams on a permanent basis, you would see areas of the country continuing to experience carbon monoxide attainment problems that they would otherwise be able to avoid with the tighter statutory emission standards.

Mr. COUGHLIN. And these are the result of effects on health?

Mr. HAWKINS. Yes, carbon monoxide is one of the areas where we are just completing our review of the health effects document, and in fact, we have just received word of a new study which has been conducted, which shows effects on lower levels than had previously been demonstrated in laboratory experiments, and these effects have to do with risk to cardiovascular patients which, of course, is one of the major causes of death in the United States.

Mr. COUGHLIN. Thank you, Mr. Chairman.

AIR POLLUTION CONTROL TRAINING

Mr. TRAXLER. Mrs. Boggs?

Mrs. BOGGS. Thank you, Mr. Chairman.

Mr. Administrator, we have talked about the training of people as auto mechanics who may specialize, for instance, in auto emissions. The whole question of training is something that has always been very interesting to me.

I notice in the State program resource assistance request, that there was a small increase in the training program.

What type of training programs are available to the States in their resource assistance program?

Mr. HAWKINS. The training that is done, Mrs. Boggs, has to deal with courses that the Agency conducts, both directly and through contractor assistance. Courses to train air pollution control officials in a wide variety of subjects having to do with air pollution control, and abatement, and I do have some specific figures on a number of courses that were conducted, and the number of individuals that received training in those courses, and I could provide that for the record, if you would like.

Mrs. BOGGS. That would be splendid.

[The information follows:]

AIR POLLUTION DIRECT TRAINING PROGRAM [1]

[By fiscal year]

	1977	1978	1979	1980	1981
Funds	$1,400,000	$1,245,000	$1,431,000	$1,547,000	[2] $1,080,000
Number of courses conducted	80	82	87	[3] 80	[4] 72
Number of students in courses	1,963	2,138	2,290	[3] 2,100	[4] 1,900
Number of workshops conducted	12	14	9	[3] 8	[4] 8
Number of workshop attendees	295	811	288	[3] 250	[4] 250

[1] Most activities are by contract and are "forward funded," thus, activities shown for fiscal year 1980 are mostly funded with fiscal year 1979 money.
[2] Assumed funds the same as fiscal year 1980 but no funds for "academic training."
[3] Estimated numbers.
[4] Estimates.

FELLOWSHIPS FOR AIR POLLUTION TRAINING—FUNDS AND NUMBER OF STUDENTS SUPPORTED [1]

[By fiscal year]

	1977	1978	[2] 1979	1980	1981
Funds	$570,000	$500,000	0	0	0
Full-time students	40	41	0	0	0
Part-time students	10	15	0	0	0
Subtotal: New students	50	56	0	0	0
Continuations [3]	76	40	26	7	0
Total students	126	96	26	7	0

[1] Data for number of students is tallied for years from which funds were derived. The activity takes place in the following year because of "forward funding."
[2] No new funds in administration's budget.
[3] Part-time, previously funded.

AIR POLLUTION GRADUATE TRAINEESHIPS [1]

[By fiscal year]

	1977	1978	1979	1980	[2] 1981
Number of schools supported [4]	13	11	8	8	8
Number of students supported [2]	54	38	39	43	25
Funds	$350,000	$350,000	$475,000	$450,000	0

[1] Data for number of students is tallied for years from which funds were derived. The activity takes place in the following year because of "forward funding."
[2] Since 1977, students are required to agree to serve in a government agency or repay the support money—a "forgivable loan" approach.
[3] No funds in the Administration's budget.
[4] The 8 schools supported are: Harvard, Rutgers, University of California-Davis, University of Cincinnati, University of Florida, University of Texas-Austin, Illinois Institute of Technology, University of Washington.

Mrs. BOGGS. You know, it has also been my hope that they would, in turn, work with the school systems, because oftentimes there are jobs available for almost minimal type training, if within the school system the training had been geared towards this type of job opportunity. I was present on Monday at the first announcement of the initial demonstration project for the President's rural initiatives program. Surely we are going to include, within the training programs that are assigned with this new program, some people to monitor air quality, water quality and the like.

Mr. COSTLE. Yes, I think there is an enormous opportunity in the President's rural initiatives program. In the state program, Chris and I observed that our State engineers and inspectors spent a disproportionate amount of their time monitoring data. I continue to see the potential for paraprofessional type programs in the environmental area, as well as for programs training people in higher technology.

Mrs. BOGGS. It would seem that EPA could interact with the Department of Labor and the new Department of Education in this great training program, in order to benefit 18- to 22-year-olds.

Mr. COSTLE. It is a natural fit. We tried to put one together under CETA in Connecticut, and got it going.

Mrs. BOGGS. But the representative of the Department of Labor indicated to us this morning that perhaps we could gear some of the CETA training programs to this type of activity, and I simply want to make that point.

AGENCY HIRING PROFILE

Mr. Costle, I should have asked this when Barbara Blum was here, I guess, but in his memorandum to the head of departments and agencies in November of 1978, President Carter stated that he expected to see "significant improvement made in your Agency as a result of your personal initiatives about women in the agencies."

What have you personally done to improve women's employment in your Agency?

Mr. COSTLE. I would like to submit for the Committee because, it is of concern to a cross range of minority groups, an update of our agencywide hiring profile.

[The information follows:]

EMPLOYMENT PROFILE BY GRADE, SEX, AND GROUP—ENVIRONMENTAL PROTECTION AGENCY [1]

[Change in Distribution of Permanent Full-time Employees from Dec. 31, 1977, to Dec. 29, 1979]

	All PFT's		PFT women				PFT minorities			
	1977	1979	1977	Percent	1979	Percent	1977	Percent	1979	Percent
Total number	9,471	9,810	3,429	36	3,678	37	1,529	16	1,692	17
Grade distribution:										
GS 1–10	4,140	3,789	2,802	68	2,772	73	1,126	27	1,194	32
GS 11–15	5,190	5,803	618	12	883	15	401	7.8	489	8.5
GS 16–18, ES	141	218	9	6	23	11	2	1	9	4

[1] Data provided from the DIPS Personnel Master Files.

EMPLOYMENT OF MINORITIES

My Deputy, of course, is a woman. I was delighted to have Inez Reid join the Agency as the new Inspector General. I recently appointed a woman Regional Administrator. Out of ten Regional Administrators three are women.

I think most people in the Agency understand my attitude to be that I want to hear people say that this is a good Regional Administrator who just happens to be a woman rather than this is a woman who happens to be a Regional Administrator.

I think we have made dramatic progress. We still have problems in the Agency at the middle management level. But, even there, I think we have made substantial progress. I have forgotten at this moment how many Deputy Assistant Administrators are women or minorities, but there has been steady improvement. I think we have also made improvements in other areas of minority employment. We developed a number of outreach programs that reach minority colleges in order to bring people into the Agency at the entry level.

This is, in a sense, connected to interests that you just made about training.

I think there are enormous employment opportunities in this field for people at all levels of skills training—it just takes affirmative action to reach out and get them into the system.

Mr. DRAYTON. I would like to add a few employment statistics.

At the GS-16 to 18 levels, we had 6 percent women in 1977; it is now 11 percent. Our employment of minorities at this level has risen from 1 to 4 percent but is still much too low. We are however, moving in the right direction.

The proportion of women at the GS-11 to 15 levels has increased from 12 percent in 1977 to 15 percent in 1979. Minorities employment at this level has increased slightly, from 7.8 percent in 1977 to 8.5 in 1979.

When you look at the new hires and promotions, the figures are even more encouraging. For GS-11 through 15 new hires, the proportion of women in 1977 was 19 percent. This increased to 27 percent in 1979. The proportion of GS-11 to 15 new hires who are minorities has risen from 7 to 11 percent during this time. Promotions from GS-7 and 8 to GS-9 was 34 percent for women in 1978 and rose to 46 percent in 1979. Promotion of minorities increased from 12 to 18 percent during this time. We are still far away from where we would like to be, but I think we are finally beginning to see some results.

WOMEN IN BUSINESS

Mrs. BOGGS. I compliment you on your steady improvement and, of course, on your own initiatives, Mr. Costle.

Also, last May, the President issued an Executive Order about women in business and charged each of the agencies in the department of the government with cooperating with this effort, and I wondered if you had any reports on any progress in that area?

Mr. DRAYTON. I do not have it. I will have to provide it for the record.

[The information follows:]

Women Business Enterprise

The EPA has developed a Women Business Enterprise (WBE) Program designed to achieve the goals set forth in Presidential Executive Order 12138. In pursuing the goals, EPA let some $2.1 million in contract awards to WBE's in fiscal year 1979 through its direct contracting program. For fiscal year 1980, the EPA has established a direct WBE contracting goal of $5.0 million.

Mrs. Boggs. Thank you very much. Thank you, Mr. Chairman.

VAPOR RECOVERY

Mr. Traxler. We will have some additional questions concerning vapor recovery and we will submit those to you for the record.

[The questions follow:]

Stage II Vapor Recovery

Question. EPA has indicated on numerous occasions that a decision on the choice of technology for Stage II vapor recovery would be forthcoming. Are you any closer to making a decision in this area?

Answer. A decision on the choice of technology for Stage II vapor recovery is forthcoming. EPA staff is putting together a decision paper for the Administrator on this issue and is putting the finishing touches on a thorough technical analysis of the costs and benefits of alternative regulatory options.

Question. I understand that if Stage II vapor recovery is implemented by EPA it will impose extremely large cost burdens on either independent gasoline marketers or automobile manufacturers. (See p. 2 of the Health and Environment Subcommittee letter for costs). Does EPA have evidence from jurisdictions where stationary Stage II equipment is currently in place (Washington, D.C. and California) that it has made any improvement in air quality?

Answer. The cost burden of a vapor recovery program is very small. An Arthur D. Little, Inc., study furnished in July of 1978 found that, "the unit cost impact of vapor recovery to the economy for the expected 1981 population would range from $0.0022 to $0.0033 per gallon, depending upon the type of system adopted and the extent to which station operators can pass through their costs." EPA estimates show that a well operated Stage II system can remove about 65 percent of refueling vapors which represent 4.5 percent to 7.4 percent of all stationary source hydrocarbons in areas like Washington, D.C. and California. Programs that remove that quantity of hydrocarbon emissions are major programs because of the multitude of hydrocarbon sources in our urban areas.

Question. I understand there have been severe maintenance problems with stationary Stage II equipment in California. Do you have any indication of the cost of enforcing this program in California?

What would you expect to be the cost of enforcing a nationwide inspection and maintenance program of 40,000 retail gasoline outlets or onboard automotive systems?

Answer. The following information provides an indication of the cost of enforcing Stage II in California. EPA's Office of Enforcement has been in contact with enforcement personnel in the South Coast (Los Angeles) and San Diego areas where Stage II is in the process of being implemented. At the present time, the enforcement staff in San Diego believes that a quarterly inspection of each service station is advisable. Five field inspectors and one in-house supervisor have been allocated to do this work. San Diego's Stage II regulation covers 1400 outlets. Thus, the man-years (inspection and supervision) required to cover 40,000 outlets around the country on a quarterly basis, using San Diego's estimate of the required resources, would be approximately 170.

San Diego district personnel indicate that the total cost, including salary and overhead, to support their enforcement effort comes to approximately $160,000 annually. If San Diego costs were representative, the cost to enforce Stage II at 40,000 outlets around the country on a quarterly basis would be approximately $4,600,000.

In the South Coast area, the enforcement division has decided to make one inspection per year of each outlet. This initial target is subject to change should experience indicate such change is advisable. Six inspectors and one supervisor have been set aside to perform these annual inspections at the 8,000 outlets covered by South Coast's Stage II regulation. The number of man-years (inspection/supervision)

necessary to enforce Stage II at 40,000 stations around the country on an annual basis, using South Coast's estimate of the required resources, would be roughly 35. (This figure is less than 25 percent of the estimate based on the San Diego projections. The San Diego plans call for one of the quarterly inspections to be more elaborate and time-consuming than the remaining three and the annual inspection planned in the South Coast.)

South Coast district personnel estimate inspection/supervision salary costs alone at $210,000 annually. (No estimate of additional overhead costs was readily available.) Accordingly, assuming South Coast's costs were representative, the cost of performing an annual inspection at 40,000 outlets around the country would be at least $1,050,000.

Several points concerning the foregoing resource estimates need to be made. Regarding the frequency of inspections, it is well-established that stationary Stage II control systems require maintenance in order to maintain their effectiveness. The information currently available to EPA concerning the rapidity with which system deficiencies can develop indicates that a quarterly inspection frequency is highly preferable. Even with such a frequency, assuring that control systems are functioning properly depends upon whether system malfunctions can be detected during an inspection. While a number of Stage II system deficiencies are visually detectable, it has not yet been determined whether all significant deficiencies can be detected through visual inspections supplemented by parameter tests—the type of enforcement planned in the San Diego and South Coast areas. If on-site emissions testing is needed to detect such maintenance deficiencies, enforcement resources would increase substantially above the estimate given above.

It should be noted that 40,000 represents a reasonable estimate of the number of outlets which would be covered by stationary Stage II control programs in nonattainment areas needing extensions beyond 1982 to attain the Ozone NAAQS only if the states exempt "Independent Small Business Marketers" as defined by Congress in Section 325 of the Clean Air Act. States are not required to exempt such outlets, however, and if, in an effort to obtain greater emission reduction credits, states do not exempt some or all of such outlets, the number of sources covered by Stage II controls could rise to as high as 65,000. In that event, the enforcement resource estimates would increase to 280 man-years and $7,430,000 for a quarterly inspection program such as San Diego's or to 55 man-years and $1,700,000 for an annual inspection program as in the South Coast.

The level of resources needed to enforce onboard controls would depend upon which form those controls took. If the controls employed conventional nozzles and a seal in the vehicle fillpipe, no inspections of service stations would be required. Enforcement of the vapor recovery function could be incorporated into existing Federal programs for enforcing motor vehicle exhaust and evaporative emissions standards. This would require the addition of about one half a man-year and modest additions to equipment and vehicle-testing budgets. The overall cost of incorporating vapor recovery into existing enforcement programs is estimated at $175,000 per year.

Should onboard control systems need to employ special nozzles for capturing vapors, service station inspections would be necessitated, as in the case of service station controls. The time needed to be spent at each station would be cut roughly in half, however, as the special nozzles would be the only equipment to be checked.

RULEMAKING PROCESS—UTILITY STEAM GENERATING UNITS

Mr. TRAXLER. Two last matters before we recess for lunch.

Going to the Clean Air Act. What I am concerned about is the shutoff point in communication between the regulated and the regulators. By way of illustration, I am concerned with your New Source Performance Standards for the electric utility steam generating units. You had proposed the rulemaking in September of 1978, the public hearings in November, the docket closure in January of 1979. There was an inability on the part of the industry to provide hard data during that time frame. Respected consultants were employed and their reports contradicted the kinds of information you had and the foundation for the rule dealing with the 90 percent removal of sulfur dioxide emissions. The question arises whether, as a matter of scientific fact, that can be achieved under

real live conditions. There are profound implications whether you are hard, soft, low sulfur, Eastern, Western, Midwestern.

What I am concerned about here though is how do the regulated, once the window closes, the docket is closed, how do they then come to you with this additional information which you would have wanted before the window closed. But the window is closed so how do they then get it in?

Now, you are very familiar with the situation. The lawsuit has arisen out of it which, possibly, could have been avoided if there had been a mechanism which allowed a better dialogue to take place. They had to file a petition for reconsideration. Your position was—and I do not want to misstate it—what was your position?

Mr. HAWKINS. This particular rulemaking, I think, is an excellent example of the fact that there is an opportunity to continue to bring new information to the attention of the Agency and to have the Agency respond to that information on the merits, because I think that is exactly what has occurred in this instance.

This rulemaking has been one where the industry and the public at large have had probably one of the most ample opportunities to interact with the Agency and, in fact, we were meeting with industrial and public interest representatives up to within weeks of the final rulemaking and were still considering the information, even though the docket was technically closed.

Subsequent to the rulemaking, the utility industry did file a petition that raised questions of the statistical analysis technique that we had employed. We reviewed that material in taking action on the petition and gave a full substantive review to the material and did, in fact, respond to those points that were raised in that submission in the Administrator's disposition of the petition.

We reassessed our evalution based on their points and found that the regulatory decision was still appropriate even after taking their points into consideration.

So, in fact, their arguments were reviewed by the Administrator, even though they were made after the docket was closed.

Mr. COSTLE. If I can add.

Mr. TRAXLER. Let me ask this question before we get to your addendum.

But once the docket is closed, under your procedures and your internal rules, does that not preclude the face to face meetings on the part of technical people to really thrash out the respective positions relative to this technical data?

You may have taken into account the written communication, but does not your internal position, following the docket closing, preclude people to people meetings?

Mr. HAWKINS. No, we still meet in this rulemaking, and in this particular rulemaking, we did meet with various groups of individuals.

The only thing that we require is a memorandum of the meeting, and the points made in that meeting will be in the file.

Mr. TRAXLER. But that took place after the petition for reconsideration was filed?

Mr. HAWKINS. On this particular point, it took place because the contractors who produced the material did not produce it until

after the rulemaking had finished. But we met on other points in the context of this rulemaking prior to.

Mr. TRAXLER. Then if I understand you correctly, it is possible, following the docket closure, for technicians on the industry side of the table to meet with technicians on the regulatory side?

Mr. HAWKINS. That is right, as long as the record is kept.

Mr. TRAXLER. That is a good answer.

Mr. COSTLE. If I could add one addendum there.

A number of things that are now a part of the rulemaking process, if anything, have really extended the length of time it takes to promulgate a final rule, and basically it has been our feeling that this was justified in order to insure that we did have adequate opportunity for comment.

We now publish a regulatory calendar saying in essence that in the next twelve months, here are the issues we expect to go to rulemaking on. We keep that current, and we require that we identify the kinds of analysis that we are going to be undertaking to promulgate a specific rule, the relative or alternative approaches to the problem that the rule is seeking to address, that we are going to analyze the kind of economic studies and we are going to be doing our best estimating there as to what the cost and benefits of such a rule might be, and, the reason why we are asking for that rule, either the statutory or problem basis for that. We have gotten good feedback from industries with whom we deal, that this is really an advanced, useful notice for them.

We then put out what amounts to, in lay language, notice of intention to promulgate. It says, here is what we are thinking, what does everybody else think. This here is preliminary data, and analysis. Help us focus on the issues. Then we get around to proposing a rule, and of course, we have been very liberal in extending the comment period. We extend the general Agency comment period in a minimum of 20 to 60 days, and I suspect if we went back to look at the rules that we promulgated over the last three years, we will find the comment period is even longer. Then the record closes, and at that point there is also the opportunity for the petitioner to reopen, and there is also the opportunity to meet after the record closes. But in order to legally protect whatever decision emerges, those meetings have to be recorded, and have to deal basically in an open way, so that one does not feel that the other party received extra consideration. That is the whole purpose of that procedure.

Then we finally promulgate a rule, in the course of which we have to explain our resolution of all the public comments we received during the public comment period. In addition, we have to state very clearly and thoroughly, the basis for our rule, because that in turn, is the rationale for where we are. That in turn becomes the basis of any subsequent litigation.

There is still then an opportunity to reopen for additional evidence, and new evidence, and then finally there is the litigation. In the case of power plants, there was a two-year process to promulgate that rule. The utilities had ample time. It was inevitable that they took the time because the stakes were so great.

We developed models with the Council of Economic Advisors and the Department of Energy, to give us the factual basis for the set of

policy choices that we have to make. Every time we made a model run, the industry had it within 24 hours. Not only from us, but from their own sources. It was the most open air decisionmaking process that EPA had.

I do not know how much we ultimately spent—somewhere between $4 million and $10 million—to get that rule out. I am sure the industry spent that much. I just want to avoid any impression that our rulemaking process is closed. I do not think that is the case.

Mr. TRAXLER. What kind of a dialogue, if any, is taking place now? Is there a dialogue going on that could see the resolution of this problem simply by stipulation of the parties? Are there conversations taking place between the representatives of the Agency and the industry in connection with this sulfur dioxide decision?

Mr. HAWKINS. The particular aspects covered by the petition, essentially the substantive argument made was that our statistical analytical technique failed to account for a complicated phenomenon associated with the operation of these control devices. We redid our statistical evaluation making use of the complicated phenomenon which is called auto correlation.

Mr. TRAXLER. Thank you.

Mr. HAWKINS. We came to the same conclusion as the administrative decision, that, in fact, these decisions could be operated on a 30-day average at the control level we had set in the regulation. The basic point of difference is one that we have not been able to understand but the petitioner's submission ignored the fact that our regulations give credit for coal washing, ash disposal, and sulfur removal. They failed to take that into account in their conclusion that we had not shown that they could get the kinds of sulfur removal that our regulation required.

Their submission raised one valid statistical point, but ignored an offsetting feature of the regulation which invalidated their conclusion. We made that point clear in the Administrator's response to the petition, and I am not aware of a subsequent argument being raised by the industry, other than filing the litigation, which could conceivably be to protect their interest while they evaluate whether they agree with us or not. But I think it is fair to say that there is expectation on the part of the Agency that whatever the arguments are on the merits, that a great deal of legal time has gone into creating a record of possible procedural issues in this, and there are a large number of lawyers who probably hate to see all that effort wasted.

STATUS OF DOW CASE IN MIDLAND, MICH.

Mr. TRAXLER. In closing, how are we doing in Midland, Michigan?

Mr. COSTLE. This is the Dow facility you are talking about?

Mr. TRAXLER. You remember Dow?

Mr. MILLER. That is now in litigation. There are ongoing negotiations.

Mr. COSTLE. We can find out.

Mr. TRAXLER. There may be something pending in your Chicago office also. You may have seen The Wall Street Journal yesterday

which indicates there is considerable slippage on when the nuclear plant will be coming on line. Dow is faced with some hard choices. They may have something pending in your regional office. If you can find that out, I would appreciate it.

AFTERNOON SESSION

WATER QUALITY

Mr. TRAXLER. The Committee will come to order.

All of our distinguished guests are back in their corners. We are going to continue the justification hearings, and go to water quality.

This medium is still your largest program, although its relative share of the budget is shrinking. For example, in fiscal year 1979, water quality comprised 26 percent of the Agency's operating budget. In fiscal year 1981, water quality comprises 24 percent. The total 1981 request is $335,088,000, a decrease of $2,348,000 from the 1980 current estimate. Permanent workyears decline by 56 to 3,032. Full-time equivalency decreases from 3,747 to 3,676. Turning to page WQ-1, I notice that permanent workyears also decrease 85 in the current 1980 estimate. What is the reason for this decrease?

Mr. BECK. There are some cuts in a variety of programs. I can only speak to abatement and control, and then the others are going to have to speak to research and development and enforcement.

Mr. TRAXLER. We are looking at permanent workyears in the 1980 estimate, and we see that decreasing 85. We notice on page WQ–1 under your budget estimates for 1980, permanent workyears are 3,175.

Mr. BECK. You subtracted. Those are basically regional reorganization positions into other activities.

Mr. TRAXLER. Where are they going if they are going out of water?

Mr. BECK. It goes to a variety of places. Some of it will probably go into some RCRA growth. It is pretty hard to trace any cut when in fact it encompasses a lot of different program elements. We can give you the specifics for the record, if you would like.

Mr. TRAXLER. Please.

[The information follows:]

WATER QUALITY WORKYEARS

When EPA converted from an end-of-year position ceiling to a workyear ceiling, we found that some of our programs had an imbalance between workyears and positions. For example, in the regional administrative management program, there were insufficient workyears to cover authorized positions. We shifted excess workyears found in the water quality program to cover this shortfall. Also, we shifted additional excess from the water program to programs which the Agency had identified as being high priority. To reflect such changing priorities, we moved workyears into our Air Fuel Economy program, Hazardous Waste Implementation Program, and Assumption of Drinking Water Additives program.

REPROGRAMING FROM DRINKING WATER PROGRAM

Mr. TRAXLER. Page WQ–15 highlights the changes in the 1980 program. Would you elaborate for us on the $2,677,500 reprogramming from the drinking water program and the $808,500 transferred to management and support?

Mr. DRAYTON. If I recall the drinking water transfer, is an organizational transfer, not a substantive transfer. This is the potable water reuse issue, which was originally in drinking water but was shifted to water quality. That is where it is being managed, if I am following the same issue that you are.

Mr. TRAXLER. Yes, page WQ-15, we notice in the third paragraph, miscellaneous reprogramming resulted in the following changes—a decrease to the air media; then you talk about an increase of $2,677,500 from the drinking water media.

Mr. BECK. $1.25 million of that goes from drinking water to water quality monitoring in this account. The purpose of that reprogramming was simply to switch resources to the account that would manage the equipment, which was primarily regional laboratory equipment such as GC mass spectrometers which are traditionally procured by and run in our regional labs.

The rest of the reprogramming was in part responsive to personnel costing shifts. There was an increase in salaries in 1980 and 1981 that needed to be covered from a variety of accounts. In 1980 we have funded personnel at 98 percent, and so we had to make up a certain percentage from a variety of other cuts. This incidentally will follow not only this budget all the way through, but all the other media as well.

The letter that we sent you last month just highlighted how we apportion those cuts to the different media, to make up for the lack of full funding for our personnel.

Mr. DRAYTON. The big item there is this $2.5 million. The two big pieces are potable water reuse work and monitoring equipment for drinking water. The latter is actually run by the water quality monitoring program, so for management purposes it is in water quality although it was originally budgeted under drinking water.

The $808,000 reprogrammed for salary is not only a reprogramming issue of the water program, but if I remember correctly it was one of the programs which was able to deal with a shortfall by some internal reprogramming. It had the ability to do that, which other offices did not have.

FISCAL YEAR 1979 PLANNED VERSUS ACTUAL OBLIGATIONS

Mr. TRAXLER. Continuing on the same page and looking at the tables at the bottom of WQ-15, the 1980 justifications reflected 1979 planned obligations of $371 million and 1980 obligations of $336 million. Actual 1979 obligations were $387 million and planned 1980 obligations are now $326 million. The question is why were 1979 obligations so much higher than anticipated?

Mr. BECK. I think I can answer that. We were able, through better grants management, to move some of the grant programs, and the 208 grant program was one of the keys here.

That, in essence, increased the amount that was obligated in 1980, thus reducing our carryover.

WATER QUALITY PROGRAM LEVELS

Mr. TRAXLER. Turn to page WQ-17. It contains your water quality program levels and the Section 208 program has shown marked improvement. The original 1979 estimate had been zero. That was

later revised to 210—the number of Section 208 plans actually approved in 1979. The Clean Lakes Projects awarded and completed also exceeded estimates. The Committee notes that state program approvals under the NPDES system has slowed down. In 1978, 32 states had program approvals and only one was added in 1979. The 1980 estimate of 37 states has been scaled back to 36. Which States have been most recalcitrant in this program?

Mr. MILLER. I can give you for the record the States that are approved, and can tell you that the ones that are on the horizon this year are Texas and Maine, and next year Florida, West Virginia and Kentucky. The remaining States for a variety of reasons have not made significant progress.

Mr. COSTLE. Some of them just plain don't want the delegation.

Mr. MILLER. That is right. It is a financial obligation to take a program. There is not sufficient funding to provide an incentive, and some basically disagree with the permitting and technology basis approach.

[The information follows:]

APPROVED STATE NPDES PERMIT PROGRAM

1. Alabama, October 19, 1979.
2. California, May 14, 1973.
3. Colorado, March 27, 1975.
4. Connecticut, September 26, 1973.
5. Delaware, April 1, 1974.
6. Georgia, June 28, 1974.
7. Hawaii, November 28, 1974.
8. Illinois,[1] October 23, 1977.
9. Indiana, January 1, 1975.
10. Iowa, August 10, 1978.
11. Kansas, June 28, 1974.
12. Maryland, September 5, 1974.
13. Michigan, October 17, 1973.
14. Minnesota, June 30, 1974.
15. Mississippi, May 1, 1974.
16. Missouri, October 30, 1974.
17. Montana, June 10, 1974.
18. Nebraska, June 12, 1974.
19. Nevada, September 19, 1975.
20. New York, October 28, 1975.
21. North Carolina, October 19, 1975.
22. North Dakota, June 13, 1975.
23. Ohio, March 11, 1974.
24. Oregon, September 26, 1973.
25. Pennsylvania, June 30, 1978.
26. South Carolina, June 10, 1975.
27. Tennessee, December 28, 1977.
28. Vermont, March 11, 1974.
29. Virgin Island, June 30, 1976.
30. Virginia, March 31, 1975.
31. Washington,[2] November 14, 1973.
32. Wisconsin, February 4, 1974.
33. Wyoming, January 30, 1975.

[1] On January 26, 1979, the United States Court of Appeals for the Seventh Circuit invalidated the Agency's approval of the Illinois NPDES program in *Citizens for a Better Environment* v. *Environmental Protection Agency* (No. 78-1042; Petition for rehearing denied May 16, 1979). However, on May 30, 1979, the Court stayed the enforcement of its Order until February 23, 1980, in order to provide EPA an opportunity to revise its regulations governing public participation in enforcement. In the interim, the State of Illinois is operating an approved program. For further information on the *Citizens for a Better Environment* case and the Agency's response thereto, see the public participation in enforcement regulations that were recently proposed in the Federal Register (44 FR 49275, August 22, 1979).

[2] On August 15, 1979, EPA approved a modification to Washington's NPDES program to allow the State Energy Facility Site Evaluation Council to issue and enforce permits.

PROBABLE APPROVAL IN FISCAL YEAR 1980

Maine and Texas.

PROBABLE APPROVAL IN FISCAL YEAR 1981

Florida, Kentucky, and West Virginia.

LOCAL INVOLVEMENT IN AREAWIDE PLANNING

Mrs. BOGGS. Mr. Chairman, excuse me.

Mr. TRAXLER. Yes, Mrs. Boggs.

Mrs. BOGGS. I apologize to all of you. I have to catch a plane, unfortunately. I do have some questions that I have prepared to be submitted for the record, particularly on Sections 208 and 404. I would just like to ask a policy statement before I leave.

There is some apprehension on the part of the local group entities that there has been some policy emphasis on taking away the local involvement and increasing areawide and regional type development.

Is that a valid assessment on the part of the local group?

Mr. COSTLE. No.

Mr. BECK. No. As a matter of fact, initially the program was very heavily loaded to areawide agencies back in 1975. In fact, all of them were basically areawide agencies.

The areawides could not fulfill some of the responsibilities that needed to be done at the state level in terms of the total coordinated planning effort, so there was a period of time when we worked with the states and areawides to carry out the missions associated with the objectives of the authorizing legislation which sets up what 208 needs to do.

What has happened in the last few years is that we have a very wide distribution of grants going to both states and areawide agencies. We have targeted towards areas where they have definable problems so that they can go ahead and implement programs. The agency is in no way discriminating in one way or the other between states or areawide agencies or locals in terms of what we are trying to see accomplished.

I can get for the record what our anticipated grants are in 1981 as they relate to areawide local government, and I think that you will see there is a good distribution of investments in terms of programs to solve problems.

Mr. COSTLE. There has been an increasing emphasis on 208 planning, one, to get implementable plans and, two, to focus on best management practices in terms of rural run-off, and urban run-off, to begin to try to get some sense of how you handle that.

Mr. BECK. And groundwater.

Mr. COSTLE. That has somewhat changed who are grant recipients, but not in the sense of local versus regional versus state, but just which people have the best applications.

Mr. BECK. In fact, in the process of making the grants to either the States or the areawide local governments, the Environmental Protection Agency has almost become the honest broker between the various parties, working with them to sort out who best——

Mr. COSTLE. It is often not a happy role, I might add.

Mrs. BOGGS. I might add that some people probably think it is remarkable that you are the honest broker. I think you are.

Mr. BECK. Thank you.

Mrs. BOGGS. I will submit my specific questions in these areas for the record. Thank you.

[The questions follow:]

REPROGRAMMING OF WATER QUALITY ENFORCEMENT FUNDS

Question. On page WQ-8, there is mention of reprogramming of resources within headquarters and regional enforcement decision units in the protection of wetlands. Evidently this re-structuring "will allow for an enforcement response to unauthorized activities in the regions in double the number of cases as in the past."

On pages 3 and 4 of Mr. Costle's opening statement, he admitted that EPA "has reprogrammed to the point of inefficiency."

What leads you to believe that reprogramming in the wetlands protection program will increase efficiency there? Why is such reprogramming of personnel and funds needed at this time?

Answer. The proposed 1981 water quality enforcement budget contains an increase of 100 percent in the regional positions allocated to Section 404 enforcement activities (+10). Due to an increased emphasis on identification of illegal dredge and fill activities, and a doubling of enforcement resources assigned to this activity, EPA believes that a substantial increase in enforcement actions will occur in this area. This is not a matter of increased efficiency on the part of our staff causing an increase in the production of enforcement actions. We plan to double our workforce in this area in 1981 and anticipate a doubling of our output commitments.

Under the 1977 Amendments to Section 404 of the Clean Water Act (CWA), EPA and the Corps of Engineers share enforcement responsibility for violation of dredge and fill permit requirements (Sections 404(n) and (a)). However, the Administrator of EPA has the sole authority to take a Section 301 enforcement action whenever he finds a violation of Section 301 by virtue of an unpermitted discharge contrary to Section 404. Several cases and a September 5, 1979, letter by the Attorney General support this interpretation and the Agency feels that this is the appropriate time to exercise its authority in this area.

REVIEW OF SECTION 404 PERMITS

Question. Page WQ-8 of the budget justification says in part that "additional regional resources provided in this submission will give EPA the capacity to review about 75 percent of all the permits (required in the Section 404 program) at a minimal level." How many permits does EPA now review in Section 404? How many will EPA plan to review under this new intitiative? How deeply will the States be involved? How much of the workload of the U.S. Army Corps of Engineers will be affected by an increase in EPA reviews?

Answer. EPA now reviews less than 10 percent of all permits, and roughly 50 percent of those considered "major", totalling about 1,000 permits. With the resources requested, the Agency will be able to increase the review to 75 percent of majors or 1,500 permits. States are not yet directly involved in the process except to the extent that they elect to provide comment to the Corps of Engineers District Engineer on a permit application. As States assume responsibility for administering the Section 404 permit program in non-navigable waters, they will become directly involved in review and decision-making on each application, with EPA reviewing State as well as Corps permits. The Corps workload is not likely to be affected by small changes in EPA resources although any increase in EPA staff may serve to facilitate expeditious permit processing by providing more complete environmental comments to the Corps decision making process.

MAJOR OR CONTROVERSIAL PERMITS

Question. How many of the permits that EPA reviews in the Section 404 program can be termed "controversial"? Please give several examples of a typical "controversial" permit application, and demonstrate how your proposed streamlining will affect such an application.

Answer. As indicated with regard to the above question, EPA now receives roughly 50 percent of all "major" or "controversial" permits, which equates to slightly more than 1,000 such permits per year. The terms "major" and "controversial" are terms that are used internally in the Agency and refer to large scale discharges,

toxic materials, particularly senstive ecosystems, or projects of significant economic and political interest. Cases of lesser magnitude may also be considered "controversial" if they involve significantly greater staff and management time than more routine cases; for example, open water discharge of moderate quantities of low-toxicity dredged material or shoreline stabilization work.

Assuming that the "streamlining" referred to here relates to the new Memorandum of Agreement with the Corps, the critical point is that such cases—which are normally those over which conflicts arise—will be handled more expeditiously under the new procedures. The Agreement serves to clearly establish criteria for escalation of conflicts from the field and responsibilities for decisionmaking. Of equal importance is that the Agreement specifies time limits for permit processing consistent with the law. Similar agreements between the Corps and the Departments of Interior, Commerce, Agriculture, and Transportation are being executed.

Reduction of Delays in Permit Program

Question. We in Louisiana are particularly sensitive to the issue of wetlands protection, since so much of our state is designated as wetlands. There are fundamental conflicts throughout the state between environmentalists who want to preserve the wetlands, and those who urge greater growth and development—either through building or further expansion of farm land.

The permitting procedure is already quite drawn out; now EPA's fiscal year 1981 budget request calls for an increase of $812,000 for "full review of major/controversial dredge and fill permits."

How will efforts to streamline the permitting procedure reduce these time delays? won't expanding "adequate environmental review" of controversial permit applications—and spending more of the taxpayers' money in the process—only serve to delay necessary permits even further?

Answer. We in EPA expect that increasing Section 404 staff for permit review will serve to reduce delays rather than exacerbate them, since much delay stems from confusion and lack of adequate information when resources are inadequate. In the past—and at the current resource levels—EPA staff often request extensions of the review period since they cannot keep up with the volume of permits. These extensions are normally granted by the District Engineers. Additional resources can also facilitate expeditious permit review by making possible greater use of joint processing (regular multi-agency meetings on current permit applications), pre-application consultation with applicants, and the development of supporting data systems such as computerized permit data files.

Definition of Wetlands

Question. A recent development affecting the Section 404 program is the *Avoyelles Sportsmen's League* v. *Clifford* case. The decision of a federal judge last June in this case requires that anyone owning land technically classified as wetlands would be required to obtain a 404 permit from the U.S. Army Corps of Engineers in order to fell a tree or even cut a limb of a tree, if the tree were growing in a wetlands area.

The EPA and the Corps may maintain different critieria by which "wetlands" areas are defined. Because the varying definitions directly affect the necessity for the obtaining of permits by wetlands owners, would you comment on how your revised permit procedure and review processes may be affected?

Answer. Our understanding of the ruling in the *Avoyelles* case was slightly different. The judge held that largescale clearing of wetlands was an activity requiring a permit. The ruling does not apply to silviculture or to clearing using only power saws or axes.

The EPA and the Corps do not maintain different criteria by which wetlands areas are defined. The two agencies have used a common definition in the 404 program since its publication in the Interim Final 404(b)(1) Guidelines in 1975. In probably 99 percent of all permit cases since that time there has been no significant disagreement on wetland jurisdiction issues. The few problems which have arisen relate to the interpretation of field data, not the basic definition of wetlands. Obviously, the most visible conflict has arisen in the case of bottomland hardwood forests, but even there the two agencies often agree. We are working closely with the Corps to establish procedures for conflict resolution, field methodologies for determining wetland boundaries, and conductiong research which will further reduce some of the scientific problems inherent in the demarcation of natural communities in the field.

Agricultural Nonpoint Source Research

Question. The section 208 is the only program with legislative authority to address nonpoint sources of pollution. Two years ago you noted in a letter to this subcommittee that over one-fourth (27 percent) of the initial 208 plans address agricultural problems. Why is there such a dramatic cutback in research for agricultural activities?

Answer. A basic policy decision was made not to continue agricultural nonpoint source research at past levels. The research which sustained cuts was the development of Best Management Practices for agricultural management source control. Rationale for the cut include: (1) the widespread availability of previously developed Best Management Practices; (2) the difficulty EPA has had in implementing Best Management Practices already available; and (3) continued EPA work in this area would duplicate U.S. Department of Agriculture research. The reduction in EPA funding for Best Management Practice research will not curtail our efforts in this area. EPA and USDA will coordinate the testing of Best Management Practices through USDA's Rural Clean Water Program. EPA's agricultural nonpoint will concentrate on the ecological impacts of nonpoint source pollutants, particularly the physical, chemical, and biological characteristics of these contaminants.

Five-Year Strategy

Question. Was EPA's new "Five Year Strategy" developed with the knowledge and input of local 208 agencies, and with public participation? If not, why not?

Answer. The 1980 Water Quality Management (WQM) Five Year Strategy was the first developed under the annual WQM policy development process. This initial strategy was transitional in many respects. Although no public meetings or hearings were conducted, public involvement was sought out and obtained. The WQM Ad Hoc Advisors, composed of representatives from State legislatures, conservation districts, cities, regional councils, environmental, public interest, business and industrial groups, were involved at every stage of the strategy development.

In developing the 1981 Five Year Strategy, we achieved greater public input and responsiveness. The number of WQM Ad Hoc Advisors was expanded to better reflect the WQM participants and their concerns. In addition to circulating our strategy to the Ad Hoc Advisors, everyone who expressed interest or concern over our 1980 strategy was sent a draft 1981 strategy. We feel we have established open and responsive communication lines and have made great progress at achieving public input into our policy development process.

Public Involvement

Question. How will EPA successfully implement its redirected water quality management program at local levels if the participation of the public sector and 208 agencies has been cut back?

Answer. EPA has not limited public involvement in developing its redirected water quality management program.

The demonstration projects, which are the focus of the redirected WQM program, are initiated at the local level, and thus involve local participation. EPA provides technical and financial assistance to the local jurisdictions.

EPA has an obligation to continue to encourage input into the restructured program from States, area-wides, local agencies and the public. To initiate the collection of ideas from these sources, EPA will provide several opportunities in fiscal year 1980 and beyond for such participation through national meetings of WQM participants and such Agency tools as the State/EPA Agreement.

Demonstration Projects

Question. Under Section 208 of Public Law 92-500 Congress directed that area-wide planning be conducted to obtain optimum plans for dealing with nonpoint source, as well as point source, pollution. Why is EPA so severely reducing the planning elements of the program, and placing so much money and effort behind demonstration projects?

Answer. Although our demonstration projects require a significant investment of management and funding support they represent only 20-25 percent of the total funds available. The remaining funds are being provided to successful agencies to complete remaining portions of the initial plans needed to move them to full implementation; from a funding standpoint, this represents a very substantial amount of dollars still available to planning agencies in addition to the demonstration project funds which also are managed by State and area-wide agencies.

Through carefully selected and managed projects, we are developing real world examples of approaches to solving urban and agriculture runoff, ground water protection, and institutional/financing problems. These projects are selected as representative of a range of common problems and solutions and receive intensive technical assistance, monitoring and evaluation by EPA headquarters, regional staff and consultants, as well as State and other involved Federal agencies. The results of these projects will be documented and transferred to other agencies with similar problems for their use.

We expect that these projects, recognizing the complexity of nonpoint control, will eliminate much duplication of effort and save considerable amounts of money and time.

We view the demonstration project approach as the most practical approach in view of the limited funding available to the program and our objectives to maximize resources and avoid overlap and duplication of effort.

Nationwide Urban Runoff Program

Question. EPA now conducts about 13 studies of the use of detention basins to control runoff pollution. Which funding approach has EPA considered to be most feasible for building additional basins? If funding is to be authorized by municipal or county ordinances, how will this be accomplished if existing cooperative machinery created under Section 208 is disbanded?

Answer. EPA's Nationwide Urban Runoff Program (NURP) is studying detention basins in 13 areas to evaluate the effectiveness of such facilities in controlling pollution from urban runoff. Until further study is made, it is not known how effective detention basins will be in treating the storm water that enters the basins or how effective detention basins will be on cleaning up or preventing pollution control as opposed to flow control.

The NURP effort is directed at providing answers to those issues. In addition to obtaining hydrologic, water quality, and economic information, NURP is also studying institutional factors that might affect implementation of various management practices. NURP plans to provide recommendations on a national strategy for urban runoff control at the end of the 3-year NURP studies.

EPA's financial management assistance program is designed to provide on-going local WQM planning efforts through specialized assistance on financial management issues. From these projects, a set of implementation techniques will be developed and disseminated to the broadest possible spectrum of local government officials.

Ocean Disposal Under London Dumping Convention

Question. Are any of the other signatories to the London Dumping Convention considering maintenance dredging of navigation channels as ocean disposal?

Answer. All dumping of dredged material in the ocean is considered ocean disposal under the London Dumping Convention whether it comes from maintenance dredging or not.

Permit Issuance Under London Dumping Convention

Question. Do other signatories to the London Dumping Convention which use bioassay, bioaccumulation and/or biomagnification testing use these test results as absolute criteria for permit denial; or do they take into consideration other factors?

Answer. Under the London Dumping Convention, signatories may use many different factors in reaching a decision on permit issuance. These may include the condition of the dumpsite as well as the results of laboratory testing.

Field Testing versus Laboratory Testing

Question. Does the Implementation Manual for the testing of dredged material (published jointly by the U.S. Army Corps of Engineers and EPA) recommend the use of field testing rather than (or in preference to) testing under laboratory conditions?

Answer. The results of field testing are generally preferred to the results of laboratory tests where field data are available. This is because the field data, when collected properly, can integrate all the many variables involved in a disposal operation so that actual impacts are measured. When laboratory tests are used the actual impacts on dumping must be inferred.

TESTING OF DREDGED MATERIAL

Question. Does EPA recommend or support the use of laboratory testing of dredged material for bioaccumulation and/or biomagnification in place of, or in preference to, field testing? If so, why?

Answer. Once enough data are available to be able to correlate laboratory results with actual impacts at dumpsites, then laboratory testing would be better because it is less expensive and easier to control. However, at the present time we do not have enough data on actual impacts at dumpsites to be able to predict impacts accurately from laboratory testing, so field testing is preferred at the present time.

CHANGES IN HEALTH AND ECOLOGICAL EFFECTS

Mr. TRAXLER. The health and ecological effects program, on page WQ-18, is decreasing $1,719,000 in 1981 to a requested $21,884,000. The health effects activity appears to be shifting to more reliance on EPA personnel in 1980. We note that positions increase from 25 to 32. Is that correct? What is the reason for the increase?

Dr. GAGE. Could you repeat the last part of the question?

Mr. TRAXLER. Sure. We note that you are shifting to more reliance on EPA personnel in this function in 1980. Your positions increase from 23 to 32.

Dr. GAGE. I guess I will have to supply that for the record. I believe that was a reprogramming in one of our laboratories out of related accounts, and we did not have a net growth in that area.

Mr. TRAXLER. Also, tell us where they were reprogrammed from?

Dr. GAGE. Yes, we will.

[The information follows:]

HEALTH AND ECOLOGICAL EFFECTS POSITIONS

The position increase in fiscal year 1980 resulted from an effort to charge personnel against the programs they were actually supporting. An incorrect accounting occasionally occurs when people with multi-disciplines work in more than one area. In this case, we found personnel charged against the air health effects transportation sources program when they were actually performing health effects work which supported the water quality program. Therefore, the change does not reflect a shift in reliance in EPA personnel.

DEVELOPMENT OF WATER QUALITY CRITERIA STANDARDS

Mr. TRAXLER. Page WQ-23 contains an interesting commentary on environmental protection in this country. The middle paragraph indicates the effort to repair data gaps for the 65 criteria pollutants will continue in 1981. In the meantime, of course, criteria are being established based on less than complete data. The costs of the actions required to attain compliance with standards based on the inadequately developed criteria will be enormous.

The last paragraph on the page explains the Agency's efforts "to seek improved toxicological methods for predicting the impact of water contaminants on human health." The conclusion in the last sentence is "regulating pollutants at higher levels than is actually needed to protect human health is then less likely to occur."

We know that all too often the Agency is forced to make decisions without adequate information available. The sentence indicates a bias within the Agency to err on the conservative side. How do you address yourselves to the question of this balance on those

occasions when you don't have precisely the necessary technological information to make a sound, scientific decision?

Mr. BECK. I think the best document that one can go to, which emphasizes our policies in terms of how criteria should be used, is written in the last crtieria document that we put out in 1976, which was the Red Book.

We made it clear that a criteria document as, we envisioned it for water quality, was a statement of knowledge about what we knew at any given time associated with the pollutant. Also there needed to be a cautious evaluation of how criteria were translated into standards at the state level, and thus where they begin to get their regulatory bite.

I think the Agency's perception is that we are constantly going to be learning about these 65 pollutants, as well as others, and that we have a responsibility to put out criteria documents which state what we know about that particular pollutant at any given time. That should be read by those people who are taking the criteria and applying it to a stream segment with some sense of how much we knew, and also how much we didn't know.

I think that one of the things we are trying to do in the management of the water quality standards revisions this next time around is to make sure there is a more cautious application of those criteria.

I think this budget item reflects Steve Gage's perception that he needs to do more research in this area.

Mr. MILLER. I think there is a furtherance to that question; that is, that there will be a substantial lag between the states picking up the water quality standards for these new priority pollutants, particularly the organics, and, added to that, the lag which occurs in adopting such standards. There would be additional lag in picking those requirements up in permanent conditions.

I don't suspect that you are going to find these water quality standards driving the expenditure of funds for some time. Hopefully by the time that happens we will have better data.

Mr. TRAXLER. The red book has a policy of presumptive applicability, is that correct?

Mr. BECK. No. In fact, the letter was signed by me when I was Deputy Assistant Administrator, and I know it very well. The Red Book says—just as I think I have accurately characterized this—that this is a statement of what we know about a pollutant at any given time, and that there should be some careful thought as one takes the criteria and applies it to a standard. This was something that, at the time I wrote it, I gave a lot of thought to. As we republish the 65 priority pollutants which we will be doing in a final form this spring and summer, it is important that we emphasize how those standards should be used, or how those criteria should be used in the standard setting policy.

I think it is important that the Agency be explicit in terms of where our confidence lies as to what we are saying, where we think we are dealing with a lack of knowledge, and or where we are dealing with information that could be refined over time with more data.

Mr. COSTLE. The implications of a lack of knowledge on standard setting is really nothing new. I think you put your finger on it.

When push comes to shove you finally have to make the best judgment you can, based on what you do know.

Dr. GAGE. It should be borne in mind, too, that the earlier efforts of water quality criteria embodied in the blue book and the more recent book were literally overtaken by the necessary commitment to publish new water quality criteria pursuant to the consent decree that was signed in 1978, and the 65 is just on the face of it not a large jump from the say roughly two dozen elements of compounds which have been covered in the Red Book, but the fact of the matter is that it is much more of a shift than that.

There are some 14 metals among the 65 pollutants which have been covered reasonably well by the Red Book effort. However, all of a sudden we have over 50 organic chemicals which, when you break them down into the classes they represent, and you start looking at them more closely, you find you have 115 different chemical classes. To prepare adequate toxicity and human health effects criteria information on those 115 organic chemicals—for which there were, in some instances, no reasonable toxicological data existing anywhere in the world—really stressed the system more than we could possibly handle in one year.

That is the reason for the stretch-out through 1980 and 1981. We are actually in the laboratory running adequate toxicity tests on those organics. We are having a much more extensive review on the human health data by looking at occupational health data and other sources of data to fill in additional information on the potential human health threat of some of these organic chemicals.

Mr. JELLINEK. If the crux of your question was do we deal with uncertainty in terms of human quality, then the answer is yes. We deal with uncertainty in every one of our programs. There are exceptions and things can and do get very complicated as we make our decisions, but as a general rule we do resolve uncertainty with a tilt toward environmental protection.

Mr. COSTLE. Indeed, we are really driven in that direction by the statutes themselves—the air statute probably being the most obvious example, where it almost literally doesn't understate the evidence.

To resolve uncertainty in terms of susceptible populations, we define a band of potential exposure that is a sensitive segment of society and apply the general. In other words, this isn't a policy in the sense that it is something we just decided to do, it is really fundamentally a reflection of the statute and the presumptions are buried in those statutes.

Obviously when you get into areas of uncertainty, just as you can't understate the evidence, you can't afford to overstate it, either, so you wind up in a bind. The Agency really helps fill in that gap with economic analysis, given the range of uncertainties, in trying to find what the economic impacts of alternative levels are within that band of uncertainty.

Again, this too often constrained by the statute in terms of just how you go about doing it. I wouldn't want you to get the impression from what we have said that we approach our work in some sort of an emotionally driven biased way. This is really not the case.

Mr. BECK. If I might just elaborate, because this is a point that I think is going to thread through everything that we are doing in effluent guidelines. The strategy that the Agency undertook with regard to pollutants back in 1976 when we signed a consent decree, and which then became embraced conceptually in the amendments in 1977, that we were going to study the 21 industry categories that we knew were putting out 65 of the most likely toxic pollutants and the PCBs, a lot of the synthetic organics and other pollutants.

In doing that, we were going to look at a standard in those 21 industries which would define best available technology. In other words, we were going to be looking for the best available control technology, but in doing that we were going to be taking into account economics, and also what we had learned with regard to the pollutants that we were studying in this process.

Now, the first wave of standard writing that we are getting out of this program is best available control technology for the 21 industries. At the same time the criteria documents are being written for the 65 pollutants, and in each one of these instances, as Mr. Costle has said, we are doing economic studies associated with those industries.

The thing that we need to be cautious of as we move into the next generation of this program, as we have now written standards for the 21 industries, is that where we have written criteria documents, that now can have other applications as they apply to standards on different stream segments that we give some guidance in terms of what we have learned about it or what we haven't learned, and how one should try to interpret that data in terms of its applicability.

An example of that may be that we have written maybe a criteria document for PCBs and in fact that is one that is done. People may have a lot of confidence in taking the document on PCBs and making a judgment on what they should do to control sources other than those 21 industries I have mentioned contributing to a stream segment, but there may be other documents that we have come to feel we need some more data on.

I think the Agency is going to try to be up front on what we do and don't know and how those standards should be used and how they should be applied.

The first, most driving principle, was that we knew the 21 industries had 65 pollutants and if we were going to increase capital we had better go after those pollutants in those 21 industries because that would give us the best return on investment.

That was a very balanced public type of decision. In the 1977 amendments, that was embraced by the House Public Works Committee—and the full Congress for that matter—as a concept that made sense.

Mr. DRAYTON. We have been talking about individual cases. We are also developing for the first time a series of tools which allow us to make comparisons, taking each case in the context of the whole array of other cases.

We can ask in each case, what is the marginal cost per pound of pollutant removal compared to what we are requiring under other regulations. We can lay out a table showing the typical costs in various industries for removing pollutants, so we can begin to

evaluate any particular decision in a broader comparative setting of incremental costs of removal.

Mr. COSTLE. It is a very useful device, actually. What you find is that when you are looking at a particular industry subcategory and suppose it is a conventional pollutant problem like biochemical oxygen demand, you find the cost per pound of BOD is at one level and then you look at another industry, say the paper industry, and the cost per pound is quite a bit less.

You do get a sense that is very important in making determinations of where you get the most pollutant removal for your money. Also, we try to work an equitable distribution across industrial categories so we are not asking one industry to bear a disproportionate share of the cost of reducing a pollution problem of which they are but one industrial contributor.

It is a means of comparative analysis that I think lends much more rationality to the decisions that we are trying to make.

Mr. TRAXLER. Not wishing to beat a dead horse, but wanting to get in the last kick, referring to last year's record of this Committee, page 319, the Chairman said, "At this point in the record we will insert the advanced notice of proposed rulemaking from the July 10, 1978 Federal Register. The information follows." This was 40 CFR part 130 FRL 905-8 water quality standards, Environmental Protection Agency. "For further information contact Kenneth Machenthun."

Turning to page 322 of the hearings, which carries the proposed rulemaking, in the center column under 2 it says, among other things—this is part of your rule—"Nevertheless, EPA feels that the data base for the Red Book numbers is sufficiently broad for the numbers to have presumptive applicability."

Mr. BECK. The numbers in the Red Book is a policy statement which specifically states what our policy is on that. We are revising the 65 priorities as a result of public comments that occurred this fall.

We have to finalize those priorities and there also needs to be a restatement of our policies associated with it based on what confidence we feel we have in those criteria documents. In many of the criteria documents that we proposed, we didn't even have a number in them. We had no number. We just had discussions of health data, and so it is hard to translate what is a discussion of kind of health data in terms of a water quality standard, and there is a difference between a water quality standard and criteria.

A water quality standard is something that is defined by use that a state draws for drinking water, for fishable-swimable and then they take a criteria document and make some interpretations of what is an adequate number associated in that area to meet that standard.

CHESAPEAKE BAY PROGRAM

Mr. TRAXLER. I think the record speaks for itself. Moving on to page WQ-26, Chesapeake Bay program. Provide for the record the amount of funding devoted to citizen participation programs in the Chesapeake Bay program for the years 1979, 1980 and 1981.

Mr. COSTLE. Yes, sir.

[The information follows:]

CITIZEN PARTICIPATION—CHESAPEAKE BAY

The amount of funding for citizen participation portions of the Chesapeake Bay program for 1979 was $383,000; for 1980 was $265,000 and for 1981 will be $270,000.

Mr. TRAXLER. In 1981 the salaries and expenses account is decreasing. Abatement, control and compliance is increasing by a similar amount. There is, however, no change in positions or full-time equivalency. What exactly does this shift represent?

Dr. GAGE. This is for the Chesapeake Bay?

Mr. TRAXLER. Yes, in 1981.

Dr. GAGE. This will be a shift in the program support contracts, which are part of the expenses in setting up a new office in Annapolis, as directed by the Congress, and providing the necessary support facilities and equipment there during a transition period until we could get staff, who are trained to actually operate as a workable unit, moved there.

In other words, we really had to have contract support for a while as we moved from a program which had been operated out of a regional office in Philadelphia to a field office in Annapolis.

OCEAN OUTFALL PROGRAM

Mr. TRAXLER. Turning to page WQ-29, marine ecological effects activity. The paragraph which addresses the Section 301(H) ocean outfall program appears optimistic that waivers will be granted. What has been the result of your research in this area?

Dr. GAGE. We are at the point now of having regulations—and I would like to ask Mr. Beck to speak to that—to implement Section 301(H).

The development of those regulations, in fact, did require some very fast research to provide a basis for the regulations. The regulations really embodied, at least in part, the procedures by which municipal waste treatment systems could qualify for the waiver provided in 301(H).

We are continuing an associated research program to answer a number of outstanding questions we still have about the deep ocean impacts of ocean outfalls, and, in fact, have a team of the regional office, the water program office and the staff working together to review the applications coming in from the West Coast municipalities.

Mr. BECK. The regulations were finalized on June 15 of this past year, and the regulations required that we receive applications by September 13, 1979. We received, at that time, 70 applications. The contractor has been grouping those applicants based on the size, cost of the project, the construction schedule, and the state priority list—all the factors associated with the timing of the project.

We envision processing 12 or 13 of those applicants either late summer or early fall, with another group being done by December.

The contract that you are making reference to, as Dr. Gage has indicated, is participating in the technical evaluation of the data that was submitted by the applicants with regard to the marine impact.

Mr. TRAXLER. What will be the thrust and cost of your 1981 research on municipal discharges?

Dr. GAGE. The basic thrust will be just along the lines that I described a few minutes ago, Mr. Traxler; that is, looking at the deep ocean or deep water impact of the municipal outfall. We are concerned not only about the effects of large quantities of nutrients going into the newer shore water, but also the effects of toxic materials coming from municipal waste treatment plants.

One of the projects that we have underway right now is actually one that is conducted in Hawaii at Kaneohe Bay, which had formerly been used as a dumping ground for municipal waste treatment and also some industrial treatment very high in nutrient content. That dumping has stopped, and now the bay is in the process of recovering.

Mr. TRAXLER. What island is that on? Is that on Oahu?

Dr. GAGE. Yes, I think so. The relaxation of the environmental stress has given us a pretty good idea of what can happen in fairly deep Pacific waters that have noticeably been impacted in the past by wastewater.

I cannot provide the precise funding for the work going on that. The $3.6 million in 1980 would include the ocean outfalls and the small amount of work we have done on dredge materials. We have just a very small amount of follow up on work which had previously been done to develop tests to help us determine whether or not sludge could safely be dumped primarily in the Atlantic dump sites. That work is pretty well wound down now so most of the $3.6 million in 1980 would be going to the ocean outfall studies on the West Coast.

Mr. COSTLE. We have got some big ones out there. San Francisco is proposing under their application a very major outfall for the primary waste in the ocean about four miles off the coast of the peninsula that San Francisco is located on.

Of course, you have Los Angeles, Half Moon Bay, the Carmel area and Seattle. We have about 50 or 60 applications from the West Coast. We have quite a number of 301(h) applications. The key issues are if they put it out in the ocean at that level of treatment, "so what". They have submitted some data. My hunch is in many instances there wasn't a lot of data to submit, but it will have to be resolved in some way because of the costs involved.

The alternative cost, could be a $600 million difference in the cost of waste treatment projects in San Francisco, which is already a multi-billion dollar program. In effect, it always comes down to the question why can't you put it out there or what is going to happen if you do.

FRESHWATER ECOLOGICAL EFFECTS

Mr. TRAXLER. The freshwater ecological effects justifications begins on page WQ-32, but let's turn back to page WQ-18 for a minute. This activity seems to be vacillating all over the landscape, from $7.2 million in 1979 to $5.0 million in 1980 current, to $5.6 million in 1981. What is happening here and why is it happening?

Dr. GAGE. Those changes are occurring primarily in the salary and expense line, Mr. Traxler, and are the result of our carrying

out two major reorganizations and reductions in force at our laboratories.

As a result of reductions made in the R&D personnel ceilings, in last year's budget we had to reorganize both the Corvallis and Las Vegas laboratories, and we tried to make the reorganizations as much in line with the budget decisions that we had made as an Agency and gotten approval for in the Congress as we possibly could.

But once you put an organization into place and start the mechanical rules of the government reduction in force operation, you cannot always come up with the same balance that you set out for.

In other words, we had people who had scientific skills of a broad enough nature bouncing from one division to another division before the final organization and staffing of the laboratory was worked out.

What has happened here, as you will find in the notes, is that we had to change from our original plan for fiscal year 1980 to accommodate movement of positions within these reorganizations and RIFs at those two laboratories at Corvallis and Las Vegas.

Mr. TRAXLER. Detail for the record why the $600,000 increase is necessary in 1981.

Dr. GAGE. I will do that.

[The information follows:]

INCREASE FOR FRESHWATER ECOLOGICAL EFFECTS

The increase of $614,000 in the 1981 budget of the Freshwater-Ecological Effects program will be used in part to fund in-house and extramural aquatic toxicology research which will provide the information necessary for the minimum data sets required for some 40 priority pollutants from the Consent Decree list of 65 substances which lack the necessary data foundation upon which the water quality criteria documents are built. The additional resources above the 1980 budget level reflect a change in the policy of the Research and Development office towards supplying most of these needs through extramural contracts and cooperative agreements. There is a corresponding increase in expenditures when the results required are developed in the private sector at established testing laboratories because of the higher overhead and administrative costs associated with these operations.

The Freshwater-Ecological Effects program will direct the use of the remainder of the additional 1981 resources towards the field environmental exposure assessment and validation of the bioassay results previously developed in the laboratory. This research will be conducted to assess the biological effects and fate of priority pollutants in freshwater streams, impoundments, and natural lake systems. Simultaneously, the effect of various experimental on-land controls and in-lake renovation practices will be assessed in response to the immediate and increased needs of the expanded Clean Lakes/Nonpoint Source Watershed Management implementation program of the Agency. This Research and Development program is designed to better understand the structure and function of freshwater and wetland systems, and the effects of priority pollutants, singly and in complex mixtures on individual species, populations and on aquatic communities within designated watershed areas.

RENEWABLE RESOURCES ACTIVITY

Mr. TRAXLER. The renewable resources activities of the industrial processes program is being phased out in 1981. The justification on page WQ-44 makes me wonder why the Agency ever bothered with this program in the first place. Were any worthwhile research results achieved?

Dr. GAGE. Very much so. The contributions the Ada laboratory and the Athens laboratory have made in developing best manage-

ment practices and in understanding the environmental benefits of those best management practices have been quite considerable.

I think frankly in the area of irrigated agriculture, particularly, we have really helped farming practices throughout the western part of the country through this program. By showing the farmers that, in fact, as they practice better irrigation they are not only saving a lot of their topsoil, keeping it from running off as a result of irrigation, but they are also getting maximum use out of the water. They are able to use much less water and get it to the crops at the right time.

The work in nonirrigated agriculture I believe has also been very important. It has shown that you can basically affect the same level of crop tillage and the rest with much lower energy cost, and hence much lower runoff at the same time.

Mr. COSTLE. Our main concern here is that these plans, from the research that has been done and the management practices that have been developed, begin to get utilized. There is a need to market that, which is fundamentally, I think, the U.S. Department of Agriculture's role.

We think there is a sufficient coincidence of interest between farmers who want to save topsoil and make maximum use of water in these set of plans that have been developed, and we are at this point not sure of the wisdom of developing many more plans.

Dr. GAGE. With the rural clean water program voted by the Congress I believe two years ago and funded this past year, there will be $50 million in the Department of Agriculture's budget to begin giving assistance to farmers to actually apply these new best management practices.

Mr. BECK. We are working with the Department of Agriculture right now on the selecton of about 13 projects to go ahead under that program, and a lot of it will be applying what we got out of the research.

There is probably one other area that I should emphasize, that Steve didn't. In 1978 and 1979, when we had a large amount of planning money for some of the best management practices undertaken by the areawide agencies, it was this group of people who were able to apply it in the sense of working with the grant agencies who began to get some real live experience in terms of how they could convert their knowledge into programs.

Frankly, this was one of the things that helped a lot of the earlier grantees move some of the programs along.

DENVER WATER REVIEW PROJECT

Mr. TRAXLER. What is the status of the Denver potable water reuse project, the result of a $8 million Congressional increase in the 1979 Act?

Dr. GAGE. We have signed a cooperative agreement with the Denver Water Board. It is going to be a very expensive facility, with our contribution of over $7 million, and a contribution of up to $14 million from the Denver Water Board. It is going to be one of the most major facilities that we have undertaken.

Along with the environmental benefits that we wanted to seek, in developing new water review technology, we also wanted to

make sure that the results from five to ten years of research—and it could well stretch out that long—are in fact going to have a payback in terms of increased reuse.

We have designed this, along with the technology program, as a very sophisticated health research program. We will be doing long-term animal studies, feeding studies using water coming from the water treatment plant in various stages using various alternative treatments.

These studies could then be used as a basis for making toxicological determinations some years hence, possibly as early as the latter part of the eighties, for increased water reuse.

We hope we will be able to use the data from the Denver project in several other advanced water treatment projects around the country to develop a suggested criteria for judging whether water could be reused on an emergency basis say during the times of drought, such as the kind that northern California experienced a few years ago. We are aiming for 1985 to have those emergency conditions developed.

LUBBOCK CHRISTIAN COLLEGE, LUBBOCK, TEXAS

Mr. TRAXLER. What is happening with the Lubbock project?

Dr. GAGE. That is also coming along quite well. We have a cooperative agreement in place with the Lubbock Christian College. That took a little more time to develop, too, Mr. Chairman, because of the relatively technical inexperience in the college. We have moved to shore up those technical skills, and to put on site there in Lubbock an EPA project officer, a person very experienced in waste treatment, to work very closely with the experts there at the college.

I believe all the hardware will be in place during this coming year, and the actual use of the facility, the treatment of municipal waste through land application, will begin. Then the longer term phase of the study looking at how that water does affect the soil, whether there is filtration through the soil into the underlying ground waters, and where there is any residual environmental problems such as pathogens or viruses building up in the soils will begin. So it is very much on track.

AQUATIC WEED RESEARCH

Mr. TRAXLER. Congess added $600,000 to the 1979 appropriation bill specifically for aquatic weed research. For the record, give us the status of that program. How much you have obligated to date and who has received the research grants.

Dr. GAGE. For the record, yes, sir.

[The information follows:]

AQUATIC WEED RESEARCH

Of the $600,000 earmarked for aquatic weed research approximately $165,000 has been obligated. Of these funds, $153,000 went to fund the second year of a grant to the University of Florida to determine the impact of integrated chemical/biological weed control on the fishery environment and water quality in a Florida Lake. A summary document describing the current state-of-the-art of aquatic weed control was prepared by the University of Florida at a cost of $8,000. About $3,000 was used to support an aquatic weed control workshop February 25-26, 1980 at our Gulf

Breeze laboratory. The purpose of this workshop was to aid EPA in formulating an aquatic weed research program which would be responsible to Congressional and Agency needs and would not overlap aquatic weed research programs of other agencies.

The uncommitted portion of the $600,000 will be used to fund the third year of the University of Florida grant and to fund projects in other high priority research areas identified at the workshop. It should be noted that some of the remaining resources are in the new competitive grants program which has a strong peer review component.

COMPOSITE CORRECTION PROGRAM—CCP

Mr. TRAXLER. The improperly operating, municipally-owned sewage treatment facilities have given this Committee cause for concern. Yet there are many examples of plants not operating up to design specifications.

I am from Michigan, so you see I am very familiar with this kind of an issue. Detroit has to be the horror story of the century in this area.

A 3½-year study on operation and maintenance problems was completed in 1979. The result of that study was a new approach called the Composite Correction Program. Has the CCP been implemented in any municipal plant in the country?

Dr. GAGE. We have carried out a very vigorous technology transfer effort going around to a number of parts of the country giving dissertations on this approach and encouraging municipal waste treatment operators to begin to use the approach, but I would have to check on the follow-up to that, since the seminars have only been held in the past year.

Mr. BECK. In 1981 in the municipal point source category we have a $500,000 add-on to the grant, which is for the purpose of picking out a project to go forward with, with regard to imposing a program of this type.

The other thing is that in every one of the 205(g) delegations that have been written—there are now 32 of them—we have encouraged in every instance that states in accepting delegation define a role for themselves in terms of getting in and giving better operation and management oversight in the program.

Thirdly, I don't know whether Bill is going to talk about this or not, but we are presently working in headquarters with a program that would define activities that we would want to be doing in the out years, with regard to where we find municipalities not in compliance, how we would move in from an enforcement standpoint, and with our grant programs, to be able to do a diagnostic for different municipalities, potentially using some 201 money or, for that matter, municipal monies to go in and make certain remedies in it.

That is a third area we are presently exploring at this point, to get at what we see as the major problem with our construction program.

Mr. DRAYTON. Our program evaluation office has looked very intensively at this as part of a broader review of operations and maintenance. We found that the biggest problem is poor design to begin with. Poor operating and maintenance practices is a second major problem.

As Chris said, we have decided, I think, on a very simple, economic way that we can use to help these communities. We would start with a diagnosis of the problems using outside private sector resources, which is relatively inexpensive. Once we have an accurate diagnosis of what the problem of a particular plant is then it becomes relatively easy for us to ask the town, or the court to ask the town, to use those same private people to actually help fix the problem. I just mention quickly that the operating and maintenance problem is one that affects more than municipal waste treatment facilities.

For example, air stationary sources have some of the same problems. Even when our usual inspections show they are in compliance, fuller investigation may find them emitting on an average 25 percent more pollution than they should be, chiefly because of poor operations and maintenance.

So the whole question of how we deal with operations and maintenance, now that we have the first generation of control equipment, is one of the essential problems that we are struggling with at the moment. It varies from sector to sector.

The problems in waste treatment facilities are different and have to be approached differently than stationary source air problems.

Mr. COSTLE. It is going to be, I think, one of the biggest enforcement problems that we are going to face over the next several years. The traditional approach of finding a violation, citing the violation, having administrative hearings and then going back and winding up in court is just not going to be efficient, given the number of private and public treatment plants that are operating.

One of the things that we are trying to do is figure out if there are not some innovative ways to deal with that problem and the use of environmental auditors, that is, people who would operate like certified accountants who would essentially perform private audits under the contract from the companies trying to take a hard look at the reporting relationships within corporations.

There may be some mechanism there that you can use to bring operation and maintenance problems to higher attention where the problems become chronic.

In short, the government cannot be everywhere at once and it is probably not desirable. We need to find more innovative ways to make sure that the investment put into treatment works has been protected by proper operation and maintenance. It is a fascinating set of problems and obviously the analogy between this set of problems and what you find in a whole range of other Federal programs in terms of performance I think will probably break some new ground. And we will have some ideas that will have value elsewhere as well.

Mr. TRAXLER. What are your plans for the CCP in 1980 and 1981?

Mr. MILLER. Let me take a crack at that, at least in part. In the enforcement area, our approach to operations problems has been to issue an administrative order for the municipality to bring on a consultant and find out what is wrong and then take appropriate corrective actions.

The tool the R&D people have developed will enable us to do that on a much greater ground. As I recall, the cost is about $15,000 an evaluation and not too much to ask. So we should be able to use

this to accelerate the number of instances in which we can go in and require some corrective action to be taken.

URBAN TOXICS AND RESIDUALS MANAGEMENT

Mr. BOLAND. The urban toxics and residuals management program reflects a decrease of 17 in full-time equivalency, yet total program costs increase $473,000. What is the significance of the full-time equivalency decrease? Why do you need extra funds in 1981?

Dr. GAGE. The increases in this area are to provide additional protocols which are nothing more than procedures, methodologies for measuring these priority pollutants that we were talking about earlier in sludges and other materials which are produced in municipal waste treatment plants.

We are beginning to find that there is a 22nd industry that should get just as high a priority as the first 21 and that 22nd industry is the municipal waste treatment plant in almost every town. Because those plants collect such a variety of sewage flows from throughout the municipal area we are finding that there are fairly significant levels of toxic metals and a number of toxic organic chemicals in the sewage wastes and a good part of those toxic materials end up in the sludge that is produced, in the waste.

The other major increase is associated with the innovative and alternative construction grant provisions which were passed in the 1978 amendments to the Federal Water Pollution Control Act. We in the Office of Research and Development have taken a fairly major responsibility for pulling together all the information on the various innovative and alternative methods so that we have a ready source of information to give to municipalities that are coming in to attempt to qualify for the higher matching provisions which are in the Clean Water Act.

We are also having to take additional responsibilities to develop fairly rigorous criteria by which we are going to judge whether the municipalities get the extra 10 percent of matching provided under this program.

We have had to take some reductions in personnel in that program and the increased cost of doing these two new efforts are resulting in increased contract costs.

ADVANCED WASTEWATER TREATMENT PLANT—ELY, MINN.

Mr. TRAXLER. Page WQ-58 indicates that operation and maintenance costs for Ely, Minnesota, will be funded with $250,000 of the increase.

Ely was one of the projects that the Committee's investigative staff reviewed last year. The investigative staff reported that EPA awarded a $2.6 million grant to Ely in 1971. The purpose of the research and demonstration grant was to build an advanced wastewater treatment plant and provide for three years of operation.

The investigative report appears on page 571 of the 1980 hearing volume. It says, "after about three years of operating the AWT, the lake made a 'remarkable' recovery and once again was available for swimming and fishing. The project was deemed a huge success.

However, a severe summer storm hit Ely and churned up the waters in the bottom of the lake and, as a result, a serious algae bloom developed again." According to the Mayor, "the lake was not swimmable after early summer storms in 1977 and 1978 because of the return of algae bloom * * *" The success of the restoration project was therefore minimized.

Dr. GAGE. Would you like me to comment on that?

Mr. TRAXLER. Yes. What do you think of that statement from the investigative staff's report?

Dr. GAGE. Well, I think it is a fairly good and general comment on attempting to take ameliorative actions after severe environmental degradation. In the last few weeks we have had many discussions on acid precipitation and particularly the effects of acid precipitation on aquatic life in lakes. We have very good documentation that acid rain will kill the lakes or at least kill all the biological life in the lakes that we know.

What you may have replacing very complex and rich life forms is nothing more than a sphagnum moss that starts growing in from the shore and creeps across the lake. You have a nice blue lake with moss at the bottom, but that is all you have.

The question we keep getting is why don't you lime the lakes, return the pH back to normal. Unfortunately, when we insult a lake with something like nutrients or toxic metals for years and years, it is going to be very, very difficult to restore the lake. We are finding with very specific research now that most of the metals and organic chemicals get bound up in sediments at the bottom of the lake and it may be almost impossible to take those out. We have PCBs at the bottom of the Hudson, kepone at the bottom of the James River. God knows what we have at the bottom of the Detroit River. These water bodies, flowing or still, in the case of a lake, are very, very hard to bring back.

I think that you can take the materials out of the water itself, but any re-entrainment of the soils and sediments in the water through a storm, through dredge and fill operations, just puts the water body at least temporarily back in the same condition it was before you started a restoration project.

Mr. BECK. Let me amplify on that. I really don't know the specifics of what caused the problem in this particular project, but one of the things that we often find is that if you get discharges, as Steve says, into water bodies like the Hudson River of PCBs and a variety of other things and it gets bound up in the sediments, and when it is dredged later on it can get back in the water.

Mr. TRAXLER. What are we going to do about Ely? You have operating costs that are excessive for the community to handle. We are all familiar with the background of the program. What is the most graceful way out? What do we do? Do you think there is a problem there?

Dr. GAGE. Yes, I think there is a problem there.

Mr. TRAXLER. We don't want to go on forever providing O&M funds for that plant. I am sure the community's position is that you should not have given it to us in the first place because we cannot afford it. We cannot very well hold the previous Congressman responsible because he thought he was doing the right thing. How do we get ourselves out of this corner?

Dr. GAGE. I think the city has a plan to build a treatment plant there which will provide its own sources of water, and when that gets up on the priority list and gets funded, then we are off the hook at that point.

Very frankly, that may well be beyond the tenure that I have sitting here at this table, Mr. Chairman.

Mr. TRAXLER. Are we providing all the operating funds for that facility?

Dr. GAGE. No, we are supplementing the city's funding, I understand. We have fiscal year 1979, which we are still operating on, which was $208,000 and we have not yet received a request from the city as far as fiscal year 1980. They are probably waiting for this budget hearing to start. I don't mean to be facetious.

Mr. TRAXLER. Supply for the record the total annual operating cost of the plant.

[The information follows:]

OPERATING COST OF ELY PLANT

The annual operating cost for the Ely Wastewater Treatment Plant for fiscal year 1978 which was confirmed by audit, was $321,807; for fiscal year 1979 the cost is estimated at $354,000.

WATER QUALITY PLANNING AND STANDARDS

Mr. TRAXLER. Turn to water quality planning and standards on page WQ-71. In what appears more and more as a trend, I notice actual 1979 positions and full-time equivalency were below plan. Actual positions were 303 compared to 346 planned. The full-time equivalency was 387 with 438 planned. Why the differences?

Mr. BECK. In water planning and standards we transferred 50 people into the water quality strategies implementation account. I think that may account for part of it.

Then the second thing is a phenomena that many accounts have seen in each one of the budgets heretofore and that is in 1979 we just did not do a very good job at FTE management. If I can pick out those numbers for you, what was the page, 76?

Mr. TRAXLER. That was on page 71. The 1979 actual positions were 303 compared to 346 planned. Full-time equivalency was 387 compared to 438 planned.

Mr. BECK. We transferred 40 workyears from water quality planning and standards, which had a drop of 47 FTEs to water quality strategies implementation which shows an increase of 48 FTEs which accounts for the change. What we basically did here was not change any of the functions of the people but just change the accounting categories.

The reason we did that is that water quality strategies implementations is the section under the management of the division director who is in essence managing revision to water quality standards and the criteria work. It was more just a switch from category of positions than it was FTE utilization.

Mr. TRAXLER. Actual obligations were $31,400,000 compared with $39,800,000 estimated in the 1980 submission. Why was this shortfall experienced?

Mr. BECK. Again, I will have to submit for the record exactly what.

Mr. TRAXLER. Fine, and provide also what the carryover balance was into 1980.

[The information follows:]

WATER QUALITY STANDARDS CARRYOVER

The shortfall was due to carryover in the following programs: Clean lakes $5,387,000; Great Lakes $2,584,300; and State Program Regulations and Guidelines $478,600. In addition, the actual obligations for State Program Regulations and Guidelines do not include $1,447,200 for criteria and standards activities which now show under water quality strategies implementation, reflecting a budget structure change in 1980.

At the beginning of fiscal year 1979, the Clean Lakes Program had $14,573,000 available to obligate. At the close of fiscal year 1979, EPA had $5,387,000 of § 314 program funds remaining as carryover. EPA had requested the $14.6 million appropriations for fiscal year 1979 in the belief that this sum would be fully obligated in the 1979 fiscal year based on State and local needs. However, in fiscal year 1979, January 29, 1979, EPA proposed rules that would make the Clean Lakes Program fully operational and an integral part of State water quality management programs. Funding assistance under the new rule would be available only to State agencies. As a result of the proposed program changes many applicants did not apply for assistance in fiscal year 1979. States held applications for § 314 assistance in anticipation of the final regulation. This rule was published on February 5, 1980. The $5.4 million fiscal year 1979 carryover is being made available in fiscal year 1980 for § 314 cooperative agreements, Clean Lakes grants are now referred to as cooperative agreements, along with the fiscal year 1980 appropriation of $15 million. EPA does not perceive any problems in fully obligating these appropriations during the 1980 fiscal year.

CARRYOVER FUNDS FOR PLANNING AND STANDARDS

Mr. TRAXLER. Is the carryover balance to be applied to program requirements in this area in 1980?

Mr. BECK. Yes, the major area that we had carryover in was the clean lakes program and I think we are trying to have it back up to the full amount this year.

STATE PROGRAM REGULATIONS AND GUIDELINES

Mr. TRAXLER. Detail for the record the recipients of $690,000 in Financial Management Assistance and $543,300 in public involvement and technology transfer funds mentioned at the top of the page WQ–74.

[The information follows:]

FINANCIAL MANAGEMENT ASSISTANCE PROJECT

The $690,000 for financial management assistance support is a cooperative Agreement with the Municipal Finance Officers Association—Government Finance Research Center. The resources are being used to provide intensive technical assistance to 10 selected demonstration projects, to provide financial planning and management training to Regional, State and areawide agency personnel, and to develop and transfer financial tools and analytical techniques developed under project to other agencies with similar problems. The objectives of this Financial Managment Assistance Project, FMAP, are to help overcome fiscal and institutional obstacles to the implementation of point and nonpoint source control programs through clear identification of costs and benefits and to help develop self-supporting continuing planning programs at the State and areawide levels.

The $543,300 in public involvement and technological transfer funds support a variety of activities related to the implementation of State and local water quality management programs. The funds support first the training for Regional staff and State and local grantees, and citizens concerning public involvement concepts and requirements under our 40 CFR Part 25 regulations, and, for Advisory Committee members, information concerning the Agency's programs under the Clean Water

Act; second information transfer/technical assistance grants to the National Conference of State Legislatures, National Association of Counties, National Association of Conservation Districts, International City Management Association, and National Association of Regional Councils, and third transfers of funds to Regional Offices for small grants to State public interest groups for information dissemination and public involvement in State planning and implementation.

NATIONAL URBAN RUNOFF PROJECT

Mr. TRAXLER. What are some of the specific examples of actions taken in the National Urban Runoff Project mentioned on WQ-74?

Mr. BECK. One that I am familiar with is in the Lake George area where in essence we were looking at a variety of nonpoint source controls to limit the phosphates and the runoff contaminants to the Lake George area. There are 30 ongoing projects in that program. We are planning to continue that as one of the high priority areas to be funded in 1981 in the 208 program.

PUBLIC INVOLVEMENT

Mr. TRAXLER. Page WQ-77 indicates that $200,000 will be used in 1980 for public involvement. What is the comparable amount for 1981? How will these funds be distributed?

Mr. BECK. There are no funds in 1981 comparable to the 1980 public involvement funds on WQ-77. There is an increase in the overall area of technology transfer and public information, of which the 1980 public involvement funds are in part, for the purposes of providing the transfer technical information on nonpoint source control effectiveness financial, and institutional issues affecting both point and nonpoint source pollution, as demonstrated primarily by Section 208 prototype projects.

We have had some real life experience in terms of how a variety of programs have worked and how they can be carried out. This is a prime area for information transfer that we are planning to do. The technology transfer area increases by about $500 thousand to a total of $1 million.

STATISTICAL SUPPORT OF REGULATIONS

Mr. TRAXLER. Turn to WQ-79. Why do you need $1,154,000 for statistical support of regulations development in 1981?

Mr. BECK. A lot of what we are doing in our regulation development, and this is particularly true in the effluent guidelines area, is categorizing a variety of pollutants, statistical averaging, statistical evaluation, of what different standards will give you in terms of its average in different areas. This is an area that in fact that we have to do as a result of a variety of potential court challenges.

Mr. DRAYTON. Mr. Traxler, the Agency was severely criticized several years ago for weak statistical work in our regulations. We have since established a central statistical policy and consulting group and across the board in each of the programs we have tried to build up that capacity. Given the very large sums of money resting on statistical judgments and the accuracy of that work, this is a very good investment.

EFFLUENT STANDARDS AND GUIDELINES

Mr. TRAXLER. The effluent standards and guidelines justification begins on page WQ–87. The 1981 request is $30,045,000, an increase of $1,562,000 above 1980. The mission of this program is to establish effluent limitations for 34 industrial categories.

For the record, tell us for how many industries that you have proposed limitations. Also, provide the 18 or so industries for which you hope to have standards proposed by the end of 1980.

Mr. BECK. Is that all the industries we have heretofore proposed standards on or just the ones we envision doing in 1981?

Mr. TRAXLER. Do both.

[The information follows:]

LIMITATIONS TO INDUSTRIES

We have proposed limitations on seven industries: Leather Tanning and Finishing, Textile Mills, Timber Products Processing, Gum & Wood Chemical, Petroleum Refining, Paint Formulation, and Ink Formulation. We expect to propose limitations for the following 22 industries by the end of calendar year 1980: inorganic chemcials, steam electric, auto and other laundries, explosives manufacturing, pharmaceuticals, foundries, electroplating and mechanical products, ore mining, coal mining, nonferrous metals, pulp and paper, coil coating, pesticides, organic chemicals, plastics and synthetics, photographic equipment and supplies, aluminum forming, electrical and electronic products, porcelain enameling, iron and steel manufacturing, copper forming, and battery manufacturing. We expect to propose limitations for the following industries during calendar year 1981: smaller segments of organic chemicals, nonferrous metals and inorganic chemicals.

ECONOMIC ANALYSES FOR REGULATIONS

Mr. TRAXLER. For the record, explain the economic analyses required for the proposed regulations. How many of the analyses have been performed to date?

Mr. BECK. All right.

[The information follows:]

ECONOMIC ANALYSES

The economic analyses to support effluent guidelines are prepared not only so the Agency can make informed decisions, but to fulfill requirements of the Clean Water Act and Executive Order 12044. The BAT effluent guidelines are required by the Act to be economically achievable. These economic analyses provide the information on which we can base our decisions regarding economic achievability of the proposed regulations. Executive Order 12044 requires us to consider various regulatory options and their economic effects during the rulemaking process, and to prepare a formal "Regulatory Analysis" when a regulation is of sufficient importance. The economic analyses that we prepare for all effluent guidelines are exhaustive, and meet the requirements of a formal "Regulatory Analysis".

The economic analyses describe the affected industry and its economic and financial characteristics. The additional costs of achieving the effluent regulations are then imposed upon economic and financial models representing projected industry conditions. From these models we estimate the total cost of the regulations, likely price increases, plant closures and resulting unemployment, community effects, balance of trade impacts, and effects on industry growth.

Economic analyses have been completed for proposed regulations for paint and ink manufacturers; petroleum refiners; textile mills; leather tanners; gum and wood chemical producers; and, wood preservers. Work on these industries will continue until their promulgation. Economic studies for all the remaining industries are in progress.

TARGET DATES FOR REGULATIONS AND ANALYSES

Mr. TRAXLER. Also provide what the target dates are for completing final regulations and economic analyses for all 34 industries.

Mr. BECK. You are talking about the 34 on the consent decree now?

Mr. TRAXLER. That is right.

[The information follows:]

EFFLUENT GUIDELINE TARGET DATES

Our target date for the promulgation of regulations for the major portions of the 34 industries is July 1, 1981.

EFFLUENT GUIDELINES DIVISION, NRDC CONSENT DECREE INDUSTRIES PROPOSAL AND PROMULGATION SCHEDULE

Industry	Proposal dates	Promulgation dates [1]
Leather tanning and finishing	July 2, 1979	July 1, 1980.
Textile mills	Oct. 29, 1979	Apr. 29, 1980.
Timber products processing	Oct. 31, 1979	May 10, 1980.
Paint and ink formulation	Nov. 9, 1979	May 30, 1980.
Rubber [2]	Nov. 9, 1979	June 18, 1980.
Petroleum refining	Nov. 16, 1979	May 8, 1980.
Gum and wood chemicals	Nov. 16, 1979	May 31, 1980.
Inorganic chemicals (phase I)	Feb. 1, 1980	Aug. 15, 1980.
Steam electric	Feb. 13, 1980	July 30, 1980.
Auto and other laundries	Apr. 18, 1980	Oct. 31, 1980.
Pulp and paper	Apr. 25, 1980	Nov. 7, 1980.
Porcelain enameling	May 2, 1980	Nov. 14, 1980.
Pharmaceuticals	May 2, 1980	Nov. 14, 1980.
Soaps and detergents [3]		Dec. 6, 1980.
Explosives manufacturing	May 30, 1980	Dec. 12, 1980.
Coil coating	May 30, 1980	Dec. 20, 1980.
Coal mining	June 13, 1980	Dec. 5, 1980.
Foundries	June 13, 1980	Dec. 26, 1980.
Ore mining	June 20, 1980	Jan. 2, 1981.
Nonferrous metals (phase I)	June 20, 1980	Jan. 2, 1981.
Pesticides	June 20, 1980	Jan. 9, 1981.
Copper forming	July 4, 1980	Jan. 16, 1981.
Iron and steel manufacturing	Aug. 22, 1980	Mar. 6, 1981.
Aluminum forming	Aug. 22, 1980	Mar. 9, 1981.
Organic chemicals (phase I)	Aug. 29, 1980	Mar. 13, 1981.
Electroplating and mechanical products	Sept. 19, 1980	Apr. 3, 1981.
Plastics and synthetic materials	Oct. 3, 1980	Apr. 19, 1981.
Battery manufacturing	Oct. 10, 1980	Apr. 24, 1981.
Photographic supplies	Nov. 7, 1980	May 22, 1981.
Adhesives and sealants [3]		June 26, 1981.
Electrical products	Dec. 12, 1980	June 26, 1981.
Printing and publishing [3]		
Plastics processing [4]		

[1] Date signed by Administrator.
[2] Withdrawal of existing BATEA regulations on these dates.
[3] May be excluded under paragraph 8 of NRDC Consent Agreement.
[4] Low priority project. Deferred to later schedule.

GRANTS ASSISTANCE PROGRAMS

Mr. TRAXLER. Grants assistance programs are described beginning on page WQ-95. Why isn't the amount for clean lake grants included in this category instead of under water quality planning and standards?

Mr. BECK. I can't answer that. I don't think it makes much difference to us what category it gets accounted for.

AREAWIDE WASTE TREATMENT MANAGEMENT RESOURCES SECTION 208

Mr. SABO [presiding]. The 1981 request for Section 208 grants was $34 million, $6 million less than the 1980 request and $3.5 million less than the 1980 appropriation. What was the Agency's request to OMB?

Mr. BECK. The Agency requested $40.0 million.

The reason why it came out at a lower level was that one, the last $4 million increment of the $40.0 million was ranked low in the Agency's ZBB ranking due to higher priorities assigned to the integrated environmental assistance program and toxic-related water quality media needs, and, two, $2 million that was earmarked for construction-related 208 projects was not funded.

Mr. SABO. Obligations in the 208 program totaled $94.5 million in 1979, including nearly $54 million in carryover funds. Last year the Committee was somewhat skeptical of your ability to use all available funding. The obligations were estimated to be $52 million as of April, 1979. Actual was $20 million, indicating heavy obligations late in the year. Are you confident all funds were well used and will result in worthwhile plans able to be implemented?

Mr. BECK. I am more confident that the funds were well used as a result of them getting obligated late in the year because the delays in the last fiscal year were due to the regional administrators negotiating State-RA agreements, which was a process of setting out very firm and hard priorities for the investment of money, spending a lot of time negotiating with the States for good, hard outputs.

In essence, what happened was that the regions worked with each State during the fall, winter and spring of last year and that resulted in our ability to make good, solid grants in the late spring and summer.

So I think that (1) we were able to obligate all the money and (2) we were able to obligate it in what I think will be very good investments of dollars.

Mr. SABO. Will you tell the Committee how the Section 208 program is stressing plan implementation?

Mr. BECK. Basically the Agency two years ago came out with a five-year strategy. In that strategy it defined a variety of categories that we were going to give emphasis to in terms of targeting money because we felt that these were areas where we needed to make grant investments and they needed to be made in all States and all areawide agencies for all intents and purposes and needed to be done in such a way to get implementation.

We have the urban runoff program, the groundwater program, and a variety of activities in the agricultural area. Out of that we have been targeting the money to programs that will be run at State and areawide levels for the purposes of getting outputs in these particular situations.

PERMITS ISSUANCE

Mr. SABO. Mr. Coughlin?

Mr. COUGHLIN. Thank you very much, Mr. Chairman. I have some general questions, if I might.

According to EPA, the nation will spend $123 million on National Pollutant Discharge Elimination System Permit Applications and, for some small firms, the cost of filling out the applications will be 70 percent of their annual profit. These costs are only for gathering the information and completing the forms. Estimates do not include any charges for negotiating a permit, installing or operating control equipment, or monitoring or reporting of discharges, to say nothing about installing or operating equipment.

Hearing this, is it any wonder that 69 percent of the respondents to a survey, this one by the chemical industry, ranked EPA as the most difficult Federal agency and 96 percent ranked EPA among the top five most difficult regulatory agencies? Increased operating costs were the major concern. I might add that 71 percent felt that regulations produced no benefits for their firms or their products.

Since we are paying for all of this, are we getting our money's worth? Has water quality improved significantly over the past 10 years?

Mr. MILLER. I don't know where you got those particular figures. Our current estimate is that the new application form costs approximately $96 million over a five-year period. The main reason for that is with the 1977 amendments we are now dealing with toxic pollutants, primarily organics. The analytical costs for those are far higher than what we have been used to dealing with.

We have not gone final with our application form yet. We are in the process of doing that.

One of the things that we are trying very hard to do is to cut back to the barest minimum those industrial categories that will have to do this additional analysis. So we are not picking up people that don't have it and we are not picking up small industries that will be impacted the most.

Mr. COUGHLIN. You are making an active effort to cut down on the cost of the paperwork and the general aggravation involved in just simply filling out the forms and keeping the records?

Mr. MILLER. Let me tell you one thing we are doing in that regard that I think over a period of time will really help.

We have the NPDES program. We have the permitting program, an underground injection permitting program, a PSD permitting program in air, and we are trying to come up with one family of forms that will service all of those programs so that if you have to apply for a permit for more than one of them, you only have to give the common information once. You don't have to go back and do it again and again. Everything is in the same format so that once you have gone through one, it is familiar and much easier to deal with.

IMPROVEMENT IN WATER QUALITY

Mr. COUGHLIN. Has water quality significantly improved over the past ten years?

Mr. MILLER. Yes, it has, in many different places. In New England where I have spent the last part of my life you have salmon running in twelve rivers in Maine, again where they have not for 30 years. You find salmon spawning again in the Connecticut River and going way up the Hudson River. You have all kinds of fish returning in many places.

Mr. COUGHLIN. This is a fairly recent occurrence?

Mr. MILLER. I would say over the last two or three years.

Mr. BECK. There has been a substantial improvement with regard to the traditional pollutants and I think that is what Jeff is making reference to. One of the areas that we think is the greatest challenge for us in the next decade is to start to deal with the variety of toxic pollutants. I think our knowledge base which in part is a result of monitoring surface water drinking supplies and a lot of monitoring that we are doing with regard to different streams is suggesting to us that for a long time we have not dealt adequately with the discharges of toxics.

A good part of the regulatory development program that we are talking about here for effluent guidelines is to promulgate standards which will help us deal with those things which are toxic in origin and getting into our waters.

MONITORING OF POLLUTANTS

Mr. COUGHLIN. Monitoring by EPA and the United States Geological Survey "shows no substantial changes in the concentration of conventional pollutants in our water for the nation as a whole between 1974 and 1978." I take it that you are saying that monitored between 1978 and 1980 it would show a substantial change?

Mr. BECK. Yes. I think there are some reasons for that. One of them has to do with what we have seen with regard to conversion of our construction grant monies. A good part of the nation's cleanup will be as a result of going to secondary treatment.

There have been trends in pockets of areas where, in fact, we have had substantial cleanup. There have been trends which dealt with such traditional parameters as oxygen demand, and we have seen improvement there. The area where we are forecasting a great challenge ahead is in toxics. We put together a list of success stories based on different stream segments, because it is there that it becomes real, where you can see changes.

I don't know what the exact number is, but we have many dozens of them right now. We would be happy to make them available to you, because a lot of those are clearly the result of the efforts that we have had with regard to our regulatory program to date.

INDUSTRIAL COST RECOVERY SYSTEM—ICR

Mr. COUGHLIN. The 1972 amendments to the Federal Water Pollution Control Act mandated the establishment of an industrial cost recovery system for industrial discharges to publicly owned treatment works. In 1977 Congress provided an 18-month moratorium on the imposition of the system. The study which was directed concluded that ICR does not substantially satisfy any of three purposes set forth in the legislative history to maintain parity

between users in payment of sewage treatment costs, to control the design and construction of excess future capacity, and to encourage water conservation.

In December, 1979, Congress extended the ICR moratorium to July 1, 1980, directing EPA to devise new recommendations. Preliminary indications are that EPA intends to recommend the ICR be retained as necessary to achieve parity, with the possibility of further recommending that all ICR revenues be retained by municipalities, and that ICR be selectively applied where administrative costs will not outweigh revenues. Is this accurate?

Mr. BECK. Basically. We need to testify next week on our reauthorization and the Administration will be speaking to its position.

One thing has been concerning the Agency with regard to the removal of industrial cost recovery. If you take away a revenue system in any municipality, and the industrial cost recovery is a revenue system, that no matter whether it served any of those other three purposes, it may exacerbate the problems that we are having with regard to operation and maintenance unless there is a way to supplant those revenues to make sure the plants are operated and maintained adequately.

So presently we are making some final determinations within the Agency with regard to industrial cost recovery and we will be talking with the authorizing committee, the House Public Works Committee, next week and the Senate Public Works Committee the following week with regard to their position on this.

Mr. COUGHLIN. And you will be making formal recommendations at that time?

Mr. BECK. Yes, we will.

COOPERS AND LYBRAND STUDY

Mr. COUGHLIN. How much money did you spend on the Coopers and Lybrand study? Will you supply that for the record?

Mr. BECK. Yes.

[The information follows:]

COOPER AND LYBRAND STUDY

The cost of the Coopers and Lybrand study is $499,200.

INDUSTRIAL COST RECOVERY SYSTEM—ICR

Mr. COUGHLIN. Since the imposition of ICR will create disparity rather than parity between direct and indirect industrial dischargers, why can't the requirement be eliminated?

Mr. BECK. Again, as I said, the central issue that the Agency is concerned about is that if a municipality designs a system and apportions cost to industrial users as well as non-industrial users and you take out those revenues that are associated with the industry users, then there needs to be a way that you replace it. If it is not replaced, if the municipality does not replace it, it means that the plant that we designed may in fact not be operated and maintained adequately.

That is the issue which is of central concern right now to the Agency because many of the municipalities were envisaging having

to impose industrial cost recovery as the Act indicated that they needed to do in 1972 and made their economic decisions based on that.

Our concern now is if you remove that, what will happen to the adequate finances for those facilities?

Mr. COSTLE. There are a variety of circumstances, too. There are some communities where industrial discharge may be 80 percent of the treatment plant. It is certainly fair, I think, in those circumstances to have a formula by which that share is fairly apportioned. But you do get a tremendous variety.

Frankly, the Congress has several minds on this. There are strong feelings on both ends of that issue. Congress, itself, has gone to the point of wanting to have a moratorium to think it through. We have been trying to do analyses and studies, but I think Chris put his finger on the dilemma, if not ICR, what then, how do you finance the continued operation and maintenance and replacement cost?

AREAWIDE WASTE TREATMENT—SECTION 208

Mr. COUGHLIN. Turning to some questions that I know have been asked in the past on the Section 208 program, I guess this program is about as broad as it is wide. Where do you see it going?

Mr. BECK. We have picked a variety of categories that we think are central to national priorities. We think that the 208 money needs to be focused at groundwater problems. We think that this is an area that is coming to our attention and that really needs to be dealt with adequately. We think that the 208 program needs to be focused at the agricultural runoff and nonpoint source discharges which are not in the traditional sense dealt with with some of our regulatory authorities under the Clean Water Act.

There needs to be a focus with regard to urban runoff, because that is contributing to a variety of pollution problems, and we need to focus some of the money there. With regard to off-site disposal, septic tanks, in municipalities, there have been some problems with septic tank discharges into the ground water in Pennsylvania with which you are familiar.

The program needs to be directed into that area, and we have picked out some high priority areas. We have tried to make it a little narrower and less wide and tried to focus on some areas where we think there is an impending national need. We have tried to get that money down to State and local governments where they see that need and need to develop the programs to carry it out.

Mr. COUGHLIN. I take it with all the problems in EPA this has to be pretty far down on your priority list, isn't it?

Mr. BECK. Actually it is not.

Mr. COUGHLIN. Where does it stand on your priority list?

Mr. BECK. I think the 208 grant program is filling what we perceive in the water program as a great big hole right now. We have a lot of authority and a lot of our programs are directed at surface water protection from point sources, i.e., industry discharging into rivers and streams.

I think we are coming to be very much aware that there are a whole lot of other sources that have not been regulated, with little jurisdiction under the Act to deal with them and that are in fact contributing substantially to water quality problems.

I think we feel that the investment of $34 million is a very high priority investment and we are pretty confident that it will return pretty good dollar for dollar pollution protection at this point.

Mr. COSTLE. The main characteristic of those problems is that they are not problems that you can put technology on. In the case of runoff, if it is rural runoff, you are talking about managing the agriculture, et cetera.

Mr. COUGHLIN. It must be involved.

Mr. COSTLE. Certainly. In the case of groundwater, that is one area we are just beginning to try to understand. What I am afraid of is that we have managed to contaminate a lot of our groundwater at a time when the demand for that groundwater has grown. That is a result of deprivation on the land.

In the case of urban runoff, it is primarily a planning and zoning problem. We have suddenly discovered that, having paved over so much of our cities, we in effect have created an areawide pollution problem that there is no way to apply technology to, at least not any simple, straightforward way.

GOVERNMENTWIDE BUDGET REDUCTION

Mr. COUGHLIN. If you had to reduce this portion of your budget by your proportion of the deficit in the budget, where would you go, and I suspect you have not concluded that re-evaluation that we had asked of other agencies in other areas. We certainly would like to have that information when that does come down.

Mr. Chairman, just let me say that I have felt that the quality of the testimony both this morning and this afternoon has been outstanding.

Mr. COSTLE. Thank you. We appreciate that.

Mr. COUGHLIN. It is heartening in terms of trying to rationalize our environmental effort and we all have the same objectives in trying to provide the best possible environment that can be had in a rational way and trying to cut down on government intrusion to the extent that we can.

I think the testimony has been outstanding. Thank you, Mr. Chairman.

GRANTS ASSISTANCE PROGRAM—SECTION 106

Mr. SABO. For the record, would you provide the amount each State will receive in 1980 and 1981 under the Section 106 grant program?

Mr. BECK. Surely.

[The information follows:]

State 106 targets for fiscal year 1980 and fiscal year 1981 based on total appropriation of $48.73 million

Region I:	
Connecticut	$750,000
Maine	540,000
Massachusetts	1,160,000

New Hampshire	330,000
Rhode Island	510,000
Vermont	240,000
New England Interstate Water Pollution Control Commission (NEIWPCC)	220,000
Total	3,740,000
Region II:	
New Jersey	1,330,000
New York	2,680,000
Puerto Rico	790,000
Virginia	360,000
Interstate Sanitary Commission (ISC)	260,000
Total	5,430,000
Region III:	
Delaware	410,000
Washington, D.C.	410,000
Maryland	820,000
Pennsylvania	2,180,000
Virginia	1,230,000
West Virginia	620,000
Delaware River Basin Commission (DRBC)	220,00
Interstate Commission on the Potomac (INCOPOT)	140,000
Susquehanna River Basin Commission (SRBC)	80,000
Total	6,100,000
Region IV:	
Alabama	1,300,000
Florida	1,260,000
Georgia	1,520,000
Kentucky	720,000
Mississippi	730,000
North Carolina	1,800,000
South Carolina	970,000
Tennessee	880,000
Ohio River Sanitary Commission (ORSANCO)	330,000
Total	9,480,000
Region V:	
Illinois	1,820,000
Indiana	1,020,000
Michigan	1,740,000
Minnesota	910,000
Ohio	1,860,000
Wisconsin	1,380,00
Total	8,740,000
Region VI:	
Arizona	720,000
Louisiana	820,000
New Mexico	280,000
Oklahoma	540,000
Texas	1,800,000
Total	4,160,000
Region VII:	
Iowa	710,000
Kansas	510,000

Missouri	860,000
Nebraska	560,000
Total	2,640,000
Region VIII:	
Colorado	460,000
Montana	330,000
North Dakota	210,000
South Dakota	220,000
Utah	300,000
Wyoming	160,000
Total	1,680,000
Region IX:	
Arizona	400,000
California	2,870,000
Hawaii	340,000
Nevada	170,000
American Samoa	80,000
Guam	360,000
Trust Territories of the Pacific [1]	160,000
Total	4,380,000
Region X:	
Alaska	150,000
Idaho	380,000
Oregon	800,000
Washington	1,040,000
Total	2,370,000
Grand total	$48,730,000

[1] Includes Northern Mariana Islands.

Note.—Columns may not sum exactly due to rounding.

GRANTS ASSISTANCE FUNDING BY STATES

Mr. SABO. Also, provide the amount of funding expected to be provided by the States in support of their water programs. Do you have access to that?

Mr. BECK. We sure do.

[The information follows:]

FISCAL YEAR 1980 STATE AND FEDERAL CONTRIBUTIONS IN THE 106 PROGRAM

States contribute approximately twice as much to water quality management under 106 as the Federal Government. In fiscal year 1980, State contributions totaled $86 million, and $48.7 million in Federal 106 funds were obligated. The level of contribution varies among States. Some States maintain the required 1971 level while other States have steadily increased their support. Total State contributions appear to have leveled off in fiscal year 1979 with fiscal year 1979 levels being maintained in fiscal year 1980. Levels may be higher due to unreported funding sources.

In fiscal year 1981 State contributions are expected to remain equal or decline slightly due to inflation and generally tightened State budgets. Some States have abolished agency positions or experienced environmental budget cuts. A breakout by State of actual or anticipated contributions for fiscal year 1980 follows.

FISCAL YEAR 1980 STATE AND FEDERAL CONTRIBUTIONS IN THE 106 PROGRAM

	State	Federal
Region I:		
Connecticut	$811,000	$750,000
Maine	781,000	540,000
Massachusetts	1,010,000	1,160,000
New Hampshire	1,784,000	330,000
Rhode Island	311,000	510,000
Vermont	604,000	240,000
Region II:		
New Jersey	5,487,000	1,330,000
New York	4,290,000	2,680,000
Puerto Rico	474,000	790,000
Virgin Islands	167,000	360,000
Region III:		
Delaware	398,000	410,000
District of Columbia	298,000	410,000
Maryland	3,467,000	820,000
Pennsylvania	1,975,000	2,180,000
Virgina	1,691,000	1,230,000
West Virginia	862,000	620,000
Region IV:		
Alabama	482,000	1,300,000
Florida	6,481,000	1,260,000
Georgia	1,157,000	1,520,000
Kentucky	1,730,000	720,000
Mississippi	419,000	730,000
North Carolina	2,734,000	1,800,000
South Carolina	2,181,000	970,000
Tennessee	1,615,000	880,000
Region V:		
Illinois	3,823,000	1,820,000
Indiana	2,288,000	1,020,000
Michigan	3,221,000	1,710,000
Minnesota	2,246,000	910,000
Ohio	3,031,000	1,860,000
Wisconsin	2,865,000	1,380,000
Region VI:		
Arkansas	623,000	720,000
Louisiana	1,140,000	820,000
New Mexico	283,000	280,000
Oklahoma	284,000	540,000
Texas	3,890,000	1,800,000
Region VII:		
Iowa	440,000	710,000
Kansas	1,338,000	510,000
Missouri	551,000	860,000
Nebraska	547,000	560,000
Region VIII:		
Colorado	619,000	460,000
Montana	72,000	330,000
North Dakota	65,000	210,000
South Dakota	70,000	220,000
Utah	400,000	300,000
Wyoming	406,000	160,000
Region IX:		
Arizona	200,000	400,000
California	12,213,000	2,870,000
Guam	133,000	360,000
Hawaii	443,000	340,000
Nevada	234,000	170,000
TTPI	(2)	(2)
Region X:		
Alaska	104,000	150,000
Idaho	650,000	380,000

FISCAL YEAR 1980 STATE AND FEDERAL CONTRIBUTIONS IN THE 106 PROGRAM—Continued

	State	Federal
Oregon	980,000	800,000
Washington	1,737,000	1,040,000
Total [1]	86,105,000	47,230,000

[1] Additional funding occurs with interstate agencies, trust territories, and American Samoa.
[2] Waived.

WATER QUALITY STRATEGIES IMPLEMENTATION

Mr. SABO. Turn to page WQ-100, water quality strategies implementation. The first activity, environmental emergency response and prevention, reflects a dramatic change in 1980. The salaries and expenses part drops from $8,118,000 to $4,229,000. Abatement, control and compliance increases from zero to $5,536,000. I know that $1,250,000 was added by Congress last year. What accounts for the remainder of the increase?

Mr. BECK. This is a program that really is starting to get going in this fiscal year. This fall we finalized the regulations listing the chemicals that need to be regulated under Section 311. In essence, the increases in this are for the purposes of trying to go far more aggressively into the area of emergency responses.

It is just simply a function of having finished our regulations and beginning to now start to make the program operational.

A lot of the dollar investments that we are going to be doing there are going to be on spill responses and emergency responses. I should emphasize at this point that these are for discharges into the waters of the United States, rivers, if you will.

The Act provides us with the ability to go out with emergency response teams to get on scene, to evaluate what the problems are, to work with the Coast Guard with regard to making certain decisions of what can be paid for out of their revolving fund account for remedies.

I should also say that this is an area in which the Agency feels a great deal of need to be responsive. The reason for that is that when in fact you have carbon tetrachloride in the Ohio River and it is upstream from a drinking water supply, the Agency has to be able to respond very quickly.

Now you made reference to a Congressional add-on of $1.25 million. That is not being carried over and that accounts for the decrease in 1981. The reason why that is not being carried over is that the Agency has some money which I guess we will talk about later in our abandoned sites program under the solid waste management program which will fill in part of the void as well as now being able to effectuate the program under Section 311, giving us access to the revolving fund which the Coast Guard implements.

Mr. SABO. The following statement appears on page WQ-104, "With the exception of the one-time Congressional add-on in 1980 of $1.25 million, the 1981 resource levels will increase slightly from the 1980 levels for both personnel and contract dollars." Subtracting $1,250,000 from the 1980 current estimate of $14,997,000 results in $13,747,000. The 1981 request of $15,809,000 is $2,062,000, or 15

percent, above the 1980 program adjusted for the add-on. That is a lot more than a "slight" increase. It appears that the Agency just included the one-time add-on in the budget base, doesn't it?

Mr. BECK. Can I submit that for the record? That was a pretty good question.

Mr. SABO. Fine.

[The information follows:]

WATER QUALITY REPROGRAMINGS

The statement on WQ-104 refers specifically to the environmental emergency response and prevention program element, which increases $750,000 in 1981 when the 1980 Congressional add-on of $1,250,000 is not considered. The increase is due to full funding of the 1980 pay raise and salaries for a small increase in workyears, and increases in the technical assistance team contract.

The remainder of the $2,062,000 increase in the subactivity is an increase of $1,617,000 in the standards and regulations program element offset by a decrease of $305,000 in the ocean disposal permits program element. The increase under standards and regulations includes $119,800 increase for criteria and standards activities, primarily for the full cost of workyears, and $1,497,500 increase for dredge and fill activities which covers 13 additional workyears and additional contract support. The increased dredge and fill resources will provide increased assistance to state program development; full review of state program submissions; assistance in specifying areawide disposal sites; increased attention to technical implications of the program in such areas as energy development, waterways and agriculture; and an increase in pre-permit and illegal activity review with a strong emphasis on pre-permit consultation and technical assistance.

CRITERIA AND STANDARDS

Mr. SABO. The criteria standards division is addressed on page WQ-106. Last year's justifications included this activity under water quality planning and standards. Why was that changed?

Mr. BECK. The reason for it is that the manager for most of these accounts which include the dredge and fill, and a variety of other things, also does the criteria work. Therefore, we made a transfer out of water quality planning and standards of about 50 people and the associated money to be managed under one program manager. It was done to provide a discreet decision unit in which the division director who has jurisdiction over this would have one budget area under which to account for his money.

There is a second reason and that is that the water planning account is primarily the account that gives the oversight management to the 106 program, the 208 program, and the 314 program which are primarily grant management accounts.

Mr. TRAXLER [presiding]. The criteria and standards division makes decisions with multi-million dollar impacts. This division is working on criteria revisions for conventional pollutants published in the Red Book and on initial criteria for the 65 toxic pollutants, isn't that correct?

Mr. BECK. Yes, it is.

Mr. TRAXLER. What is the status of the project and have criteria for both conventional and toxic pollutants been published for comment?

Mr. BECK. We are presently reviewing the comments. As I indicated to you earlier, we will be finalizing them this spring. It is not a rulemaking process. They are primarily documents which are statements of the state of the art along with a restatement of what will be the impact of how the criteria should be taken into account.

That means that we are going to have to re-examine the statements that were in the Red Book in 1976 and make a determination of whether we want to continue that policy.

Mr. TRAXLER. When is it likely that EPA will publish a revision of the Red Book, expanded to include the toxic pollutants? Will it be this spring?

Mr. BECK. That is right. Some of the pollutants in the 65 that we have done, that is the criteria documents, are already in the Red Book. So we will have updated those that are already in the Red Book with what we have learned since the last time we published it, as well as expanding criteria documents for pollutants that we have yet to put statements on.

Mr. TRAXLER. We had an interesting conversation earlier today in response to some questions as to the basis for criteria in the Red Book and its applicability. I assume the same kinds of things that were said earlier would apply for the new Red Book?

Mr. BECK. Well, as I said, the old Red Book had a statement of policy in it. When we finalize these criteria documents, we need to make a restatement of our policy. As I indicated to you, there was a policy statement that was in that Red Book in 1976 with regard to how criteria should be taken into account when they are translated into standards. There needs to be an update of that policy statement.

Mr. TRAXLER. I guess we come back to the problem of the inadequacy of information in many instances. After all, isn't the R&D program requesting millions to study the criteria and fill some of the data gaps?

Mr. BECK. There is a difference in my mind between criteria that you are writing under the Water Act from criteria envisioned in the Clean Air Act. The Clean Air Act has criteria for six or seven pollutants and out of that you are deriving a whole regulatory program and out of that you begin to impose standards which derive cost.

The criteria program under the water program, as I have said earlier, includes statements of what we know about any particular pollutant at a given point in time. There is no requirement to do it by rulemaking. Where criteria begin to have an effect is when a State takes that criteria and applies it to some standard and begins to make a choice in terms of the number that it wants to pick to describe the use that it has written a standard for.

So my feeling is that the process under the water program of writing criteria documents is an important one. The Agency always has the responsibility to find some vehicle to tell the world, and all those people who participate in the regulations of water quality, what we know about any particular pollutant at any given time.

The area we have to be cautious about is how one takes those criteria and makes determinations in terms of standards, because once they become standards and once you affix numbers on them is when you begin to derive a whole bunch of regulatory costs. That is an important choice and ought to be done very consciously.

Mr. TRAXLER. Last year Mr. Jorling stated, "We do not think that in the toxic area our efforts will lead to artificially stringent levels of water quality standards in the States as was, Mr. Chair-

man, the pattern with some of the conventional pollutants. That is an action that we are now going to repair."

This Committee shares Mr. Jorling's concern that some earlier criteria led to artificially stringent water quality standards, but frankly, I don't share his optimism that the toxic criteria or conventional revisions won't lead to more of the same. How do we protect ourselves against this situation, Mr. Beck?

Mr. BECK. I think the answer to that is really found in the budget document. The Agency has made an investment of resources in the standard and regulation account for the purpose of trying to more carefully review the State standards that are derived in part by reading the criteria documents.

I have a sense that this is an important role for the Environmental Protection Agency to play as it relates to its State counterparts.

AMMONIA AS A POLLUTANT

Mr. TRAXLER. Let's look at one specific pollutant for a moment—ammonia. Ammonia is currently included in the Red Book as a conventional pollutant. But I understand the EPA is proposing a revision to the criteria on ammonia that would have far-reaching effects. The revised criteria would treat ammonia as a toxic pollutant. One very possible effect of this would be the requirement for many many more advanced wastewater treatment facilities to remove the ammonia. On the surface of it, this action might have significant effects on the Administrator's AWT review. What is happening with ammonia?

Mr. BECK. Again, ammonia already has a criteria document written on it. We are presently considering updating the criteria document associated with ammonia. Ammonia does have, and can have, significant aquatic impact. I think the more relevant question is: What is it the Agency is going to do when it finalizes its statement on criteria documents, encourages the States to adopt those criteria documents or those pollutant standards in some shape or form with regard to the choices it is going to make with regard to additional treatment.

The Agency has provided a revision in policy which was done this fall which allows for the municipalities to do wasteload allocations in a more cautious and precise way to make determinations of what is needed to meet standards and at the same time to give us a better indication of what will be the cost implication of those new standards.

Mr. TRAXLER. Well, what is going to happen with ammonia? Are you going to establish new criteria that would treat it as a toxic pollutant? Have you made that determination?

Mr. BECK. That is a determination that is presently pending before us.

Mr. TRAXLER. That is a possibility?

Mr. BECK. It is a possibility that it could go on a section 307–A list.

WATER QUALITY MONITORING AND ANALYSIS REDUCTION

Mr. TRAXLER. Page WQ–116 indicates that the water quality monitoring and analysis program decreased $1,030,000 in 1980 due

to Congressional reductions in travel and supplies. That amounts to 25 percent of the total reduction, an amount far greater than a proportional reduction. The clear implication is that the 1980 request for this program was greatly overstated, wouldn't you agree?

Mr. BECK. No, but I can't answer you with regard to the reprogramming. Can you?

Mr. DRAYTON. I don't know the specific item. We will have to provide that for the record.

[The information follows:]

WATER QUALITY MONITORING AND ANALYSIS REDUCTION

During the development of the 1980 operating plans, a workload analysis disclosed that there would be some savings in this program in 1980, especially in the area of travel and supplies. The Congressional reductions were applied proportionately after the Water Quality monitoring and analysis savings were applied.

PERMITS ISSUANCE

Mr. TRAXLER. The permits issuance activities, page WQ-129, is requesting a 40 percent increase in 1981, to a total of $13,876,000. I realize that the emphasis on toxic pollutants has changed the thrust of the permitting program, but the justification material certainly does not adequately support an increase of this magnitude.

You may expand upon it now or for the record.

Mr. MILLER. Let me give you the basics and I will expand on it for the record.

This is an increase primarily in contract dollars. During the next two to three years we will be in the process of implementing our pretreatment program and in order to do that we have to insert requirements and permits for municipalities to develop pretreatment programs.

We have to assist them in designing pretreatment programs and we have to approve pretreatment programs that they submit. This is a one-shot problem. We have chosen to deal with it by contract dollars rather than increasing the Federal workload. I will provide more for the record.

[The information follows:]

EXPLANATION OF INCREASE

The fiscal year 1981 budget appropriations for Permit Issuance (WQ-129) has increased 40 percent over the fiscal year 1980 figure. In fiscal year 1980, the Abatement, Control and Compliance allocation was approximately 44 percent of the total appropriation. In fiscal year 1981, this proportion increased to 75 percent because of pretreatment contract funds increasing from $2 million (fiscal year 1980) to $4.5 million (fiscal year 1981). The chart below presents a distribution of the $4.5 million in the fiscal year 1981 pretreatment program.

TOTAL CONTRACT FUND EXPENDITURES FOR PRETREATMENT IN FISCAL YEAR 1981

This chart describes a number of pretreatment activities which may be amenable to contractor substitution.

Activity:	*Contractors*
1. Overview of State pretreatment programs: Review local approvals, review removal credit determinations, veto/reissue permits where necessary	N/A
2. Technical assistance:	
Local program development	450,000

Removal credits	450,000
3. Development pretreatment compliance schedules	100,000
4. Reissuance and modification of permit	N/A
5. Local program approval	1,400,000
6. Removal credit approval	450,000
7. Categorical determination (§ 403.6)	100,000
8. FDF variances	1,000,000
9. Monitoring for compliance with existing standards	550,000
10. Enforcement actions	N/A
Total pretreatment contract money	4,500,000

CONSOLIDATION PERMIT PROGRAM

Mr. TRAXLER. You are to be congratulated for your efforts in the consolidation permit program, an effort to reduce the regulatory burden. Give us a couple of paragraphs about this program for the record and indicate whether or not you think it has saved any actual dollars in terms of your Agency's budget.

[The information follows:]

STATUS OF EPA PERMITS CONSOLIDATION EFFORTS

The first two final products of EPA's Permits Consolidation initiative are expected to be published in April, 1980. First, final regulations will be published consolidating permit program requirements and State program requirements for the Hazardous Waste Management (HWM) program under the Resources Conservation and Recovery Act, the Underground Injection Control (UIC) program under the Safe Drinking Water Act, and the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act, and State section 404 Dredge or Fill programs under the Clean Water Act. These regulations also establish procedures for permit decision-making for the above four programs and for the Prevention of Significant Deterioration (PSD) program under the Clean Air Act, where this program is operated directly by EPA. Second, consolidated permit application forms are expected to receive Office of Management and Budget approval and will soon be available for use by NPDES and Hazardous Waste Management programs.

In addition, EPA's ten Regions are in the process of reorganizing their permitting functions, in response to EPA's Permits Consolidation Task Force recommendation that Regional permit processing be consolidated. Regions II, III, IX, and X have already instituted some form of consolidation in permit review and processing activities. Others are in the process of determining how best to consolidate these activities.

BENEFITS OF CONSOLIDATION

EPA anticipates a number of benefits to industry, the general public, and the Agency itself when the Consolidated Permit regulations and application forms are used to process permits:

Environmental benefits should result from a more comprehensive review by EPA staff of wastes or residuals handled at a facility requiring multiple permits.

Reduction in the regulatory burden should result through the use of uniform procedures, consistent regulatory requirements and a single set of application forms.

Public participation should be enhanced by providing more uniform and predictable opportunities for public involvement in permit program decisions.

Institutional benefits have already been experienced through greater coordination and cooperation by various EPA programs in developing the Consolidated Permit regulations and application forms.

Resources benefits are anticipated, leading to an overall reduction in Agency permitting needs over the next few years, measured against what the expanding scope of EPA's permit programs otherwise would have required. If States adopt similar approaches, resources could also be felt at the State level.

RESOURCE SAVINGS

Consolidated permitting will not result in any reduction in current resource levels. Resource needs in the coming year may not be as great as under separate

programs, but we are currently unable to pinpoint the exact amount or location of these resource savings. Consolidated permitting should result in more efficient use of Agency resources. Increased efficiency will result from coordinating and consolidating permit application, public notice procedures, public hearings, permit issuance, administrative appeal procedures and other aspects of the permitting process.

WATER QUALITY ENFORCEMENT

Mr. TRAXLER. Why do you need an additional $850,000 in 1981 for water quality enforcement?

Mr. MILLER. That, again, is largely reflective of the contract account. I will have to supply that for the record.

[The information follows:]

WATER QUALITY ENFORCEMENT INCREASE

The Office of Water Enforcement will use the Abatement, Control and Compliance appropriation for fiscal year 1981 to provide contract funds to support specific cases through the use of expert testimony, as well as to provide litigation training for EPA attorneys. Contract funds will be used to provide performance samples, the analysis of which are a means for providing quality assurance in the NPDES self-monitoring program. The accuracy with which the permittees and the laboratories used to analyze these blind samples will reflect the quality of their sampling and analysis programs. Contract funds will also provide for the development of technical manuals and for the support of biomonitoring activities. These funds also support compliance sampling inspections of selected major permittees in the NPDES program. These inspections sample and analyze the discharges as well as evaluate the records and production data of the permittee in order to verify the information which the permittee has submitted to EPA on its Discharge Monitoring Report. The information obtained as a result of these inspections provides information for enforcement cases. Because of lack of sufficient Federal personnel, it is necessary to use contractors for these functions.

NPDES PROGRAM STATUS

Mr. TRAXLER. Additionally for the record, update the table that appears on page 348 of the 1980 hearing volume.

Mr. MILLER. Yes. Do you know exactly what that is?

Mr. TRAXLER. Sure. It is the Status of NPDES State Program Approvals.

Mr. MILLER. Surely.

[The information follows:]

STATUS OF NPDES STATE PROGRAM APPROVALS—MAR. 6, 1980

	Approved State NPDES permit program	Approved to regulate Federal facilities	Approved State pretreatment program	Not approved
1. Alabama	Oct. 19, 1979	Oct. 19, 1979	Oct. 19, 1979	1. Alaska.
2. California	May 14, 1973	May 5, 1978		2. American Samoa.
3. Colorado	Mar. 27, 1975			3. Arizona
4. Connecticut	Sept. 26, 1973			4. Arkansas.
5. Delaware	Apr. 1, 1974			5. District of Columbia.
6. Georgia	June 28, 1974			6. Florida.
7. Hawaii	Nov. 28, 1974	June 1, 1979		7. Guam.
8. Illinois [1]	Oct. 23, 1977	Sept. 20, 1979		8. Idaho.
9. Indiana	Jan. 1, 1975	Dec. 9, 1978		9. Kentucky.
10. Iowa	Aug. 10, 1978	Aug. 10, 1978		10. Louisiana.
11. Kansas	June 28, 1974			11. Maine.
12. Maryland	Sept. 5, 1974			12. Massachusetts
13. Michigan	Oct. 17, 1973	Dec. 9, 1978		13. New Hampshire.
14. Minnesota	June 6, 1974	Dec. 9, 1978	July 16, 1979	14. New Jersey.
15. Mississippi	May 1, 1974			15. New Mexico.

STATUS OF NPDES STATE PROGRAM APPROVALS—MAR. 6, 1980—Continued

	Approved State NPDES permit program	Approved to regulate Federal facilities	Approved State pretreatment program	Not approved
16. Missouri	Oct. 30, 1974	June 26, 1979		16. Oklahoma.
17. Montana	June 10, 1974			17. Puerto Rico.
18. Nebraska	June 12, 1974	Nov. 2, 1979		18. Rhode Island.
19. Nevada	Sept. 19, 1975	Aug. 31, 1978		19. South Dakota.
20. New York	Oct. 28, 1975			20. Texas.
21. North Carolina	Oct. 19, 1975			21. Trust Territories.
22. North Dakota	June 13, 1975			22. Utah.
23. Ohio	Mar. 11, 1974			23. West Virginia.
24. Oregon	Sept. 26, 1973	Mar. 2, 1979		
25. Pennsylvania	June 30, 1978	June 30, 1978		
26. South Carolina	June 10, 1975			
27. Tennessee	Dec. 28, 1977			
28. Vermont	Mar. 11, 1974			
29. Virgin Islands	June 30, 1976			
30. Virginia	Mar. 31, 1975			
31. Washington [2]	Nov. 14, 1973			
32. Wisconsin	Feb. 4, 1974			
33. Wyoming	Jan. 30, 1975	Nov. 26, 1979		

[1] On January 26, 1979, the United States Court of Appeals for the Seventh Circuit invalidated the Agency's approval of the Illinois NPDES program in *Citizens for a Better Environment* v. *Environmental Protection Agency* (No. 78–1042; Petition for rehearing denied May 16, 1979). However, on May 30, 1979, the Court stayed the enforcement of its Order until Feb. 23, 1980, in order to provide EPA an opportunity to revise its regulations governing public participation in enforcement. In the interim, the State of Illinois is operating an approved program.

[2] On Aug. 15, 1979, EPA approved a modification to Washington's NPDES program to allow the State Energy Facility Site Evaluation Council to issue and enforce permits.

DRINKING WATER—UIC PROGRAM

Mr. TRAXLER. Your total request for drinking water is $86,905,000 which is $4,586,000 more than the 1980 budget estimate and $10,180,000 more than the 1980 current estimate. The 1979 obligation estimate contained in the 1980 justification was $74,319,000. Actual 1979 obligations were $67,687,000, a difference of $6,632,000, or 9 percent. What accounts for this significant shortfall?

Mr. BECK. We had a slowdown in some of the obligations of our underground injection grant program and as a result we had more carryover than estimated last year. We think that problem is going to be taken care of for this fiscal year. We carried over from 1978 to 1979 approximately $6 million in UIC and from 1979 to 1980 we carried over approximately $7 million. We are now projecting zero carryover into 1981.

The prime reason for the decrease in carryover is that we are anticipating finalizing the underground injection control program regulations. We have been working very actively with the States. We envision having 57 states and territories eligible and we don't think that a sizeable carryover balance is going to occur again in this account.

Mr. TRAXLER. How much of the unobligated balance carried forward has been reprogrammed into other activities?

Mr. BECK. I think it was zero. There was very little, if any, reprogrammed out of here. It was carried over and will be obligated this year.

Mr. TRAXLER. Turn to page 16 of the justification for health effects under public sector activities research and development. The third paragraph reads: "Epidemiological studies will be completed to determine whether asbestos occurring in drinking water from natural erosion, mining operations, and asbestos-cement pipe is a contributing factor in increased cancer rates. The outcome of this research will provide the necessary data base for a treatment technique to reduce leaching of asbestos fibers."

It's interesting to note on page DW-14 that a recent study indicated no increase in cancer rates from asbestos in distribution pipes. Yet, the paragraph on page DW-16 seems to prejudge that a technique must be developed to limit asbestos in drinking water. Isn't the jury still out on the effects of asbestos? Haven't some types of asbestos been found not to cause serious health problems?

Dr. GAGE. There are several things intertwined, Mr. Traxler. I think the jury is still out on whether all asbestos carrying pipes are completely free of the leaching of asbestos fibers into drinking water supplies. The studies that we have done so far indicate that there has been very little leaching, although it is very easy in the laboratory and particularly in asbestos cement pipe to simulate conditions which will cause the asbestos fibers to come out of the mixture and go into the water.

There is another study recently done at our Duluth Laboratory which showed asbestos fibers in human fluid such as urine, indicating that they are going through the digestive tract. In that particular case it was pretty clear that it was not an inhalation with the asbestos particle moving through the lungs. It is probably from some form of ingestion.

What we do not have a very clear picture on in this area of asbestos health effects is whether or not the asbestos could cause types of cancer in the digestive tract. The case is very clear as far as inhalation of asbestos.

We don't have clear evidence at this time as to whether or not there is a connection between asbestos ingested or drunk and various forms of gastrointestinal cancer. We really think it is a cautionary thing at this time to proceed along looking at potential health effects, and looking at methods for reducing possible leaching of asbestos fibers. We are having to do the studies on the pipes distribution systems anyway because of concern about the leaching of toxic metals from the pipes into the distribution system, so we can carry the asbestos studies along.

Mr. TRAXLER. How many municipal water systems have asbestos in their distribution pipes? Do we have a count on that?

Dr. GAGE. I don't have information——

Mr. TRAXLER. If you have that information, will you supply it for the record?

Mr. JELLINEK. I don't know exactly how many municipals, but there are thousands of miles of concrete asbestos pipe.

[The information follows:]

USE OF ASBESTOS CEMENT PIPE FOR DRINKING WATER

The Asbestos Cement (A/C) Pipe Procedures Association provided the following information on the use of A/C pipe for drinking water:

1. A/C pipe is sold in all 50 States and therefore it is being used nationwide.
2. A wide variation in the use of A/C pipe exists among the States. In Texas and California, over 90 percent of all cities have some A/C pipe.
3. Data obtained from A/C pipe manufacturers in 1974-1975, indicated that about 4,600 cities having populations of 1000 or more had A/C pipe in their distribution systems.
4. The 4,600 cities represent about 38-40 percent of all the cities with populations of 1000 or more. Also the 4,600 cities have a total population of about 70 million people.

ASBESTOS PIPE

Dr. GAGE. I hate to bring up a spectre here, but it seems like under more acidic conditions both the toxic metals and the asbestos are more prone to come out of pipes.

In asbestos concrete pipes, increased acidity, lower pH, you get more fibers in pipes which have lead in the sealers or in the joints. With increased acidity you also have more lead coming out into the water.

Mr. TRAXLER. This is not a fair question so you don't have to answer it—if you determine ultimately that the asbestos pipes are cancer-causing under certain conditions, and you identify those areas in the country or community which have the right conditions to cause the asbestos fiber to enter into the water—can you make an estimate of the costs to replace or treat the asbestos-cement pipes?

Dr. GAGE. It would probably be in the hundreds of millions of dollars to take the pipe out of the ground and replace it, conceivably into the billions. We are fairly optimistic, though, that there may be in situ methods of treatment.

That is what our laboratory in Cincinnati has concentrated on. If you run say certain metallic salts through the pipes with the water, and hold that in contact with the surface of the pipe for a period of time, you will coat out of the solution certain metal salts which will immobilize the asbestos fibers in the one case, and other toxic metals in the second case.

These kinds of in situ treating techniques are showing some real promise, certainly on a laboratory scale, and that could end up being a mere fraction of what any replacement cost would be.

Mr. COSTLE. There is an analogue in that which I think is frankly more scary; that is, for a period of years we went through a real building boom in this country where we used asbestos in coatings and ceilings and for decorative purposes, etc.

We have been focusing mainly on schools again because of the age of the receptor population. We found a significant number of schools that have had asbestos in use that is now flaking. We found some ways to correct that by coating, a kind of in situ approach in some instances.

We have been working with school boards and public school districts who have the country trying to get an identification and development, as Steve Jellinek can describe in more detail if you wish, of a simple method for trying to identify whether what looks like asbestos on the ceiling or on the wall is in fact asbestos.

We haven't even begun to scratch the surface yet about other buildings, such as homes, apartment buildings, office buildings, and, increasingly, office buildings are sealed systems in terms of air circulation, so that once you get a release in the atmosphere, it doesn't tend to get purged.

We seem to have lost the notion of being able to open or close windows in modern office buildings, and we don't have a lot of evidence, but that potential there could be enormous, obviously, once we begin to get a handle on it.

Mr. TRAXLER. Every time you turn a rock over a new demon jumps out.

ASBESTOS PRODUCTS

Mr. COUGHLIN. Mr. Chairman?

Mr. TRAXLER. Mr. Coughlin.

Mr. COUGHLIN. I also addressed this question when the Consumer Product Safety Commission was before this Subcommittee. I just happen to have a fairly substantial asbestos industry in my district.

Understanding that asbestos can be indeed a very hazardous or toxic substance, it seems to me it is still important to try and identify those asbestos products which are safe as opposed to those that may be questionably safe or are definitely unsafe, because at the present time architects are leery of specifying asbestos products.

We have a whole industry literally that is in trouble because of some products which may be safe or some unsafe. The whole industry is under a pall because of the uncertainty as to products containing asbestos.

I would encourage as quickly as possible identifying those kinds of products which are in the safe category, so that they can be removed from the pall, and reserving judgment on those products which have potential hazards.

Mr. COSTLE. I might ask Steve Jellinek to comment, if you would like, or Steve Gage.

Mr. JELLINEK. Mr. Coughlin, as you undoubtedly know, we have published advance notice of proposed rulemaking which describes a number of different scenarios for the regulation of asbestos in commercial and industrial products, and we are waiting now for the industry and for other interested members of the public to respond to that.

We expect to propose some kind of regulation limiting the use of asbestos later this year. Asbestos is a very dangerous substance. It is one of the handful of known human carcinogens and causes a number of other respiratory diseases. There is growing concern about its effect on gastrointestinal cancer as well, as we have just discussed.

Our focus has been in two directions. One is in trying to determine the risk of asbestos at low levels of exposure, which is the area of real controversy, and I think will be determining in terms of what kind of regulation we propose, on the one side; that is, on the risk side.

On the benefit side, since we have to look at both sides under the Toxic Substances Control Act, we have been trying to identify

whether substitutes exist and whether they are as effective as asbestos products, what the economic impact of using substitutes would be, how expensive are they in relation to current products using asbestos, and what are the essential uses of asbestos in current products.

So, we are trying to lay out in an objective way the risk side and the benefit side, as we work toward a proposed regulation to limit the use of asbestos, which will be published later this year.

Mr. COUGHLIN. What I am trying to say is that affirmative statements from EPA that certain things are not substantial risks are as significant as negative statements that things are substantial risks, in some instances at least.

Mr. JELLINEK. The major part of our effort will be to determine through the rulemaking process exactly those questions.

Mr. COSTLE. Which are which?

CRITERIA AND STANDARDS

Mr. BECK. One of the things that is being done under the criteria and guidelines account in drinking water is to determine in certain situations, where people are finding contaminants in their drinking water, whether that level is safe or not. It is an attempt to kind of fast track some determination with regard to whether in fact there are real problems.

Mr. COSTLE. That is going to be very tough. I remember we talked very briefly about this last year, when we talked about Cincinnati's drinking water, where we identified 460 compounds which didn't exist twenty years ago.

Basically, we are dealing with a situation where man and nature over millions of years have basically screened most natural substances. We have learned from trial and error what you can eat, what you can't eat, what may be medicinal, what isn't, and what is dangerous. In the last twenty to 30 years we have essentially introduced a whole range, millions of synthetic substances, that neither man nor nature has ever really seen.

We have had kind of a rough rule of thumb that if you are exposed to it and you don't keel over, it is probably all right. But we are just beginning to pull up the carpet on the whole issue of what happens when you are exposed to these substances over a sustained period of time in relatively small quantities, and it now takes 300 mice, a battery of scientists, $500,000 and maybe three years to find out if one chemical causes cancer, let alone whether there are other kinds of chronic effects, introduction of disabilities that are genetic.

We just don't know, and most of the chemicals that we have been testing for cancer turn out not to be problems. It depends on what studies you can undertake. It is probably fair to say maybe 10 percent of the "suspect chemicals"—whose molecular structure that we have tested—10 percent would actually turn out to be carcinogenic.

We haven't done even a comparable level of research into other areas of health effects, but we are changing the world at such a velocity that our knowledge is likely to catch up with us after the fact. There are so many things that affect us in our daily lives that

it is going to be hard to sort out cause and effect relationships. It is a tough problem that really can't be oversimplified, I am afraid.

Mr. COUGHLIN. Just for the record, asbestos is not a newly created product by any means.

CHRONIC HEALTH EFFECTS

Mr. COSTLE. No. Asbestos is something else, but what is new is the issue of the chronic health effects; that is, the effects of exposure over a sustained period of time. That is an example, a good example, in this case of a naturally occurring substance.

What I am saying is that we simply don't live in a zero risk society, and it is not likely we are going to live in a zero risk society. But we are faced with a rather massive problem of trying to find ways to minimize the risk from this multiplicity of man-made changes in the environment in which we live.

Mr. COUGHLIN. Thank you, Mr. Chairman.

Mr. DRAYTON. The problem is made even more complicated as we don't understand the synergistic effects of several different chemicals mixing together. When you walk down the street you are not getting the one chemical painted on the back of a rat. You are getting thousands of them in a mix. We know in many cases the mix is more dangerous than the individual doses.

RISK ASSESSMENT

Mr. TRAXLER. The 1980 Committee's report directed EPA to perform the best risk assessment feasible for all organic chemical treatment control techniques under consideration. The report stated, "If EPA does not have an adequate data base to perform a meaningful risk assessment, it should develop one."

Does the Agency have an adequate data base? What is the Agency doing to comply with the Committee's directive?

Mr. GAGE. You are speaking specifically in this drinking water area?

Mr. TRAXLER. That is correct.

Dr. GAGE. Let me address the carcinogenic risk factor first, and then Mr. Beck will discuss the broader areas of toxicological concern from drinking water contaminants.

In 1975 the Agency set up a carcinogen assessment group which developed guidelines for the conduct of cancer risk assessments in the Agency. That group has gained a lot of experience in the past few years actually carrying out such risk assessments, and has developed a good deal of confidence in the interpretation of scientific data. This data, I might indicate, is generally developed either by private companies or by the National Cancer Institute in their bioassay screening of chemicals.

That data is interpreted in a way in which you can make meaningful estimates of what would be the risk to an exposed population for getting one of the various forms of cancer that might be caused by that chemical. This technique has been largely taken over, as I understand, by the Office of Drinking Water and is used as the method for the assessment of carcinogen risk associated with the drinking water contaminants. More broadly, though, I would

like to ask Mr. Beck to talk about some of the other toxicological testing approaches.

DRINKING WATER STANDARDS

Mr. BECK. The drinking water criteria, standards and guidelines account is, in effect, the standard setting and implementation part of our Agency's work, and we have in drinking water standards 54 people who are basically participating in setting standards for a variety of contaminants.

Mr. TRAXLER. Do you have advisory councils in this area?

Mr. BECK. Yes, we have an advisory council which is mandated by the act. It has 15 members on it, which advise the Deputy Assistant Administrator and the Administrator on various policy activities.

At any rate, in that criteria standard setting process, the Agency has revised the primary drinking water standards for ten inorganics and six pesticides, bacteria and turbidity. The process of doing that is in essence a health-related process that takes into account information that we have gotten from the National Academy of Sciences, and takes a variety of standards which in effect need to be monitored through our state primacy program, which requires monitoring in the municipal programs to determine whether there is the presence of those different contaminants. The Agency envisions coming out in 1981 with standards for 4-6 organic additional solvents, the development of which is a health-related study, and that accounts for a lot of work we are planning to do.

The other area where we have to do an increasing amount is in risk-related type of activities where a community calls and says, "We found TCE in our drinking water. We have got it at one-tenth of a part per billion. What should we do? Is that bad? Is that going to kill us? Where is it coming from? What is happening?"

We are finding hundreds of organics and inorganics showing up all over this country as a result of our monitoring, resulting in a growing awareness with regard to problems. We are finding the Agency can't wait to send out a set of regulations in terms of what needs to be done, or what is a safe level.

So we find ourselves constantly participating in the safe drinking water program in sending our experts to explain what we seem to know today. Here are some remedies we think you can make with regard to treating your water, and here are some things that you can reduce in terms of source contaminant of it.

You know, prudence kind of dictates that you take those actions, and to a great extent that is where this program is going right now, because there are just tremendous public demands for us to get out there, to get ahead of the curve on it. That is how we are participating in risk evaluation.

TURBIDITY IN WATER

Mr. TRAXLER. What is the health concern in terms of turbidity in water?

Mr. BECK. Turbidity in water, for one——

Mr. TRAXLER. Don't we all ingest a little dirt? My mother used to say you eat a peck of dirt during your lifetime. What do scientists say?

Mr. BECK. If it is just plain old U.S. dirt, it isn't too bad.

Mr. TRAXLER. There are different kinds of dirt and different types of turbidity.

Mr. BECK. There are different types of dirt just like there are different types of particulate. There is another phenomenon associated with turbidity; that is, it tends to be a way that you carry bacteria into a system or for that matter other contaminants into it. Turbidity tends to absorb some of the organics and, in fact, it can have the effect in essence causing a synergistic effect and exacerbating the problems associated with drinking water.

It also makes the water much more difficult to treat with chlorine in certain instances, because it is less effective and it tends to mask the ability to get at viruses. In the purest sense, just good old U.S. dirt sometimes isn't that bad. However, it can interfere with our ability to treat and deal with a variety of things such as adequate protection against bacteria.

Mr. TRAXLER. Without belaboring this point, it is interesting that there is a community where the people received their drinking water from a direct tap on a larger line that was chlorinated, but not filtered. They have a problem with the Safe Drinking Water Act and the question of turbidity, and now they're losing their supply.

Occasionally the water was turbid because it was a lake intake, and there would be a storm of such a magnitude out of the right direction that would stir up the sand on the bottom of the lake. People had been drinking this water for over 25 years, and now they're being shut off.

What are you doing here? This is good, healthy stuff and none of our kids have died from this and you are coming out from Washington and telling us that our water, that we drank for 25 years, may be hazardous to us. You can appreciate the problems that that caused.

Mr. BECK. Yes, sir.

Mr. TRAXLER. Some of the experts wanted to know if the turbidity tests had ever been run on the kinds of sand that were involved in this situation.

Mr. BECK. Yes.

Mr. TRAXLER. I don't suppose anybody knows the answer to that question?

Mr. BECK. No. I think I know of the project you are talking about.

Mr. TRAXLER. You ought to have those people for constituents.

Mr. COUGHLIN. Mr. Chairman?

Mr. TRAXLER. Yes, sir.

Mr. COUGHLIN. I have a number of questions in the standards setting area that I want to ask about. I can defer those until a later time in the hearing.

Mr. TRAXLER. Are they on water?

Mr. COUGHLIN. They are on the question of standards setting as it relates to drinking water.

Mr. TRAXLER. Why don't we put those at the end. Can you do it at that time?

Mr. COUGHLIN. Fine.

PILOT PLANT PROJECTS

Mr. TRAXLER. What results could you report from the pilot plants listed in the 1980 hearings on page 355? To refresh your memory, the communities were Jefferson Parish, Louisiana; Philadelphia, Pennsylvania; Cincinnati, Ohio; Evansville, Indiana; and Miami, Florida. What were the results from those pilot plant projects?

Mr. GAGE. I had better submit those for the record.

Mr. TRAXLER. There are several, please do.

[The information follows:]

PILOT PLANT RESULTS

Granular Activated Carbon Bed Operation

Projects at Jefferson Parish, Louisiana, Little Falls, New Jersey and Cincinnati, Ohio have all shown that a large number of organic substances are present in the water, but in very low concentrations. Whereas the normal treatment plant process does not generally remove these organic substances, granular activated carbon beds do reduce the number and concentration of most of these substances. Specific organic substances with higher molecular weights, such as pesticides, are generally well adsorbed at these very low levels as contrasted to the lower molecular weight substances such as chloroform or 1,2-dichloroethane. Precursor substances that react to form trihalomethanes are generally not well removed by conventional granular activated carbon treatment. Projects at Philadelphia, Pa., Mississippi, Florida and Shreveport, Louisiana have been initiated to investigate improved organic removal for precursor substances as well as specific organics, by using ozone—GAC systems as practiced in Europe.

Chlorine Dioxide Disinfection

The field evaluation at Evansville, Indiana has shown that chlorine dioxide disinfection in a continuous pilot plant operation is effective for minimizing trihalomethane production. The pilot plant trihalomethane concentrations are about 1–5 ug/L, whereas the conventional full-scale treatment plant yields about 60–120 ug/L depending on the season. Bacterial populations appear to be within recommended standards with either the free chlorine disinfection used in the full-scale plant or the chlorine dioxide disinfection used in the pilot plant. The utility director has expressed extreme interest in starting the use of chlorine dioxide as a primary disinfection in the full-scale operation to cope with the THM regulations.

Synthetic Resins

The field evaluation at Miami, Florida and Kansas City, Mo., have shown that some synthetic resins have the ability to adsorb certain organic contaminants more effectively than granular activated carbon. Specifically XE–340 was found to be a very effective adsorbent for halogenated organics, but it does not possess the same broad spectrum capability as granular activated carbon. The findings from these projects have led to further evaluation of XE–340 in ground waters that have very high concentrations of a limited number of organics such as trichloroethylene. Cost data are also being collected.

TECHNOLOGY FOR SMALL WATER SYSTEMS

Mr. TRAXLER. The total 1981 requested increase in public sector activities is $4,682,000. The majority of the increase $4.3 million, is for an initiative to develop cost effective technology for small water systems which service populations under 10,000. What is the objective of this cost effective technology? How will the research be performed, and are there any demonstrations planned?

Dr. GAGE. Yes. This is one of the major initiatives that we have in the research development program this year. We have very

strong support throughout the zero-base budget review process this past year, and it was one of those consensus items that we supported all the way through the budget process.

We are undertaking this effort in recognition of the fact that 80 to 90 percent of the public drinking water systems in this country are small systems serving less than 10,000 people. Small systems serve only 10 to 20 percent of the people, but we are talking about a very large number of small systems spread throughout the entire country, stretching all the way from individual homes to small trailer parks to small communities. We have not paid any significant attention to the problems facing small water supplies in the past. In the last few years we have identified enough situations where drinking water contaminent levels exceeded standards for traditional consituents of concern to mandate an increasing research effort in this area.

The major effort that we will begin in the latter part of this fiscal year and which should reach full-blown proportions in fiscal year 1981 is an identification of the best treatment technologies that are available to small water supplies to comply with standards, and a sharing of that information gained among the small communities. We have got fairly good reason to believe that there are good treatment technologies operating, so we don't think that too much of the money is going to have to be spent on the development of new technologies. It is not going to be a hardware intensive program. What is not available or widely shared is knowledge about how to make the known technologies operationally effective for small systems.

So we are going to work out some cooperative efforts among a variety of communities, so that they can learn from each other, and really put into place, as the result of this, a technology transfer effort that can reach the small system supply operator.

Mr. COSTLE. This is one area, Mr. Traxler, that has been of real concern to me. We have, over the last three years, gone out and sampled water supplies, whether they be in individual wells in remote areas of New Jersey or Kansas. We are just finding more and more chemical contaminants present.

You mentioned Cincinnati. In a city of that size you have the management capability to develop cost effective applications of carbon absorption treatment that essentially absorbs those chemicals out of the drinking water. That might be feasible for Cincinnati, but you couldn't expect small systems to do the same job. The question is what do you do. We are finding we are unable to give good answers for some small systems when they call and say they are finding some chemicals in the water.

We know it is probably not healthy. We don't know whether it is healthy or not at that level. Some of these chronic effects we can't set thresholds for. What do we do? There is no alternative water supply available. We are finding such instances of ground water contamination more and more frequently. I would speculate that by the end of the century we are going to have to be treating a lot more of the water we drink and we really need to put emphasis on anticipating this need for the small systems.

Mr. TRAXLER. Will any of this go into design research, a few hardware research projects or are you just going to be evaluating

existing systems and discussing with the various small municipalities how well they are working?

Dr. GAGE. Our preconception at this time is that we will not have to do too much new technology development. As I said earlier, we really think that we can concentrate on evaluation of existing systems and more imaginative applications for small communities. There may be some technology money required to update or to upgrade certain systems that we might want to work with, but this is not a program which would take us into the laboratory to set up 50 new methods of development treatment technologies for these small systems. Rather, we are going to be dealing with the world pretty much as we find it, and try to find those systems that can be operated best by small systems.

Mr. BECK. There is another aspect of this problem. One of the things that we have found related to the treatment of drinking water is that there are tremendous economics of scale and that the per capita cost of treatment rises sharply as you get down to the smaller communities, yet we still find as you begin to look at problems in drinking water that many of the smaller communities and rural communities in this country have just as significant a contaminant problem.

So one of the things that EPA is trying to do with its small systems research initiative is to find low cost, easily implementable types of technologies because we have now had to make some discriminations in the regulations that we have gone forward here to date on the basis of size.

One of the things that is really driving this research is the knowledge that we have a lot of small system problems with a lot of economic impact, and not a lot of things that we can offer with regard to alternatives. There is a pressing need for this research.

Dr. Gage. I probably should add for the record, too, Mr. Traxler, that there are many commercial units, small scale units, which are offered by a variety of manufacturers. Some of these appear to be quite effective. Some of them appear to be completely ineffective.

I just wanted you to understand that there are many hundreds of these commercial units which are at least claimed to treat water safely for small systems.

Mr. TRAXLER. Are these single family dwelling units?

Dr. GAGE. They can be that small, or they can be up to the size of apartment size or suitable for a trailer park or many of the other small community configurations that we encounter.

Mr. TRAXLER. What was your request to OMB for this category?

Dr. GAGE. It was the same as we received from OMB.

Mr. TRAXLER. This is a new program, almost $5 million to conduct this research. You probably would not feel comfortable with $2.5 million?

Dr. GAGE. Not really.

Mr. BECK. There are a lot of people drinking water in rural America.

Mr. COSTLE. If we knew how to spend it, I would say it probably should be $20 or $30 million anyway.

Dr. GAGE. To show you how we feel about it, last year when we put together our ranking of the research program we ranked this above the 100-percent line. In other words, we reprogrammed other

research and development out of our program to make way for this initiative.

I think that we have pared costs in a variety of other areas in order to have this go forward. I think this is too important to delay even another year.

TCE IN DRINKING WATER

Mr. TRAXLER. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman.

First, I want to add a comment to the Agency in connection with the TCE problem that occurred in my district where we suddenly had a substantial panic with the discovery of TCE in a considerable amount of the drinking water there.

The Agency, both here and in your regional office in Philadelphia, is to be commended. I felt you responded to trying to provide as practical a kind of assistance as could be provided to the people in that area who were concerned about what they could do about the TCE, rather than just striking out in all directions, I think you gave us some very practical and well organized assistance. I appreciate it and I think you have performed a great service to the public at that time.

NATIONAL PRIMARY DRINKING WATER REGULATIONS

Your appropriations justification announces plans to promulgate revised national primary drinking water regulations in 1981. That would include maximum contaminant levels for ten organic chemicals and treatment requirements for ten inorganic chemicals, viruses and protozoa. Can you identify those contaminants for the record?

Mr. COSTLE. Surely.

Mr. COUGHLIN. How many of them will be regulated because they are suspected carcinogens?

Mr. BECK. The majority of them.

Mr. COUGHLIN. Would you identify those for the record?

[The information follows:]

Contaminant Levels

Revisions to the National Primary Drinking Water Regulations are planned to be proposed in Fiscal Year 1981. The existing Maximum Contaminant Levels (MCLs) for 10 inorganic chemicals will be reviewed. These inorganic chemicals include:

1. Arsenic
2. Barium
3. Cadmium
4. Chromium
5. Lead
6. Mercury
7. Nitrate (as N)
8. Selenium
9. Silver
10. Fluoride

In addition, contaminant levels for turbidity and microbiological contaminant levels will be reviewed.

At least 11 organic chemicals will be reviewed for possible establishment of MCLs:

1. Trichloroethylene
2. Carbon Tetrachloride*
3. Tetrachloroethylene
4. 1,2-Dichloroethane
5. 1,1,1-Trichloroethane
6. 1,1-Dichloroethane
7. Methylenechloride
8. Vinyl chloride*

9-11. Dichloroethylenes (3 different chemicals of this family)

Also, the current standards for the following organic chemicals mainly used as pesticides controlling agents will be reviewed:

a) Chlorinated hydrocarbons

- Endrin*
- Lindane*
- Methoxychlor
- Toxaphene

b) Chlorophenoxys

- 2,4-D
- 2,4,5-TP Silvex

The chemicals identified by an asterik have been identified by the National Academy of Sciences as known or suspected carcinogens. In addition, the recently promulgated MCL for trihalomethanes of which chloroform is a suspected carcinogen will be reviewed in the revised standards. Drinking water standards are established based upon health effects, treatment technology capabilities, monitoring availability and economic impact.

NATIONAL ACADEMY OF SCIENCES STUDY ON CONTAMINANT LEVELS

Mr. COUGHLIN. Section 1412(e)(1) of the Safe Drinking Water Act requires that Revised National Primary Drinking Water Regulations be preceded by a National Academy of Sciences (NAS) study that recommends maximum contaminant levels for any contaminants suspected of harming health. Has NAS or a similar organization recommended specific maximum contaminant levels for organic contaminants in drinking water?

Mr. BECK. Yes, for the pesticides in particular.

Mr. KIMM. They suggested numbers for some of the non-carcinogenic organics contaminants. In the area of carcinogens, they said you had to come at it from an acceptable amount of risk since carcinogens are assumed to be non-threshold contaminants. And basically dropped that problem back in our lap.

Mr. COUGHLIN. Could you provide those maximum contaminant levels for the record?

Mr. BECK. We cannot provide the contaminant levels now, but we can tell you for which ones we will derive them.

Mr. COUGHLIN. You said you will provide some.

Mr. BECK. We will provide what the Academy gave to us to the Committee staff for their files.

FUNDS FOR CONTINUATION OF TCE STUDIES

Mr. COUGHLIN. Does your budget request include funds to finance the cost of the remainder of this study prior to the promulgation of revised regulations?

Mr. BECK. Yes. In the drinking water standards and regulations account we have accounted for our need to do those TCE levels that we made reference to.

GRANULAR ACTIVATED CARBON STANDARDS

Mr. COUGHLIN. You will recall that last year we had some discussion about granular activated carbon and your justification mentions in fiscal year 1980 treatment techniques for organics will be re-examined. I understand you have told other groups such as the National Drinking Water Advisory Council that you do plan to promulgate a GAC requirement, perhaps this summer.

Is that your intention?

Mr. BECK. Right now we plan to repropose a GAC standard this summer. We are looking at a variety of problems brought to our attention as a result of the initial proposal. We are getting initial data and will be making that determination very shortly.

One of the areas we have been very concerned about is the rapidity with which some of the pollutants break through the granulated activated carbon which would necessitate more frequent regeneration which could have major impacts with regard to costs. That is one of the central problems that we are doing work on right now.

60-531 O - 80 - 11

STANDARDS FOR MAXIMUM CONTAMINANT LEVELS

Mr. COUGHLIN. Your justification announces plans to issue ten more standards for synthetic organic chemicals. Wouldn't the planned maximum contaminant levels for the ten synthetic organic chemicals make GAC unnecessary? In other words, in terms of your regulation, if you issue maximum contaminant levels for them, why do you have to prescribe GAC and not issue the maximum?

Mr. BECK. The granulated activated carbon would be the treatment system that would be utilized.

Mr. COUGHLIN. It would be a better treatment system for them. You can describe the maximum and let the water meet those standards.

Mr. COSTLE. For these kinds of contaminants, the probability is that the granulated activated carbon is the effective way to deal with them, and, for larger communities, such as the case of Cincinnati where we have only essentially investigated the chemicals and there are hundreds of others, the question becomes, if granulated activated carbon will in fact absorb those chemicals and remove them from the drinking water at a reasonable price, is that a reasonable insurance policy to take out against the possibility that in our own ignorance we may be facing a public health problem that suddenly emerges 10 or 15 years down the road?

What we are dealing with here are delayed or unknown effects. As I say, we know very little about genetic damage caused by chemical instruction except we know the genetic system is very sensitive to chemicals.

Mr. COUGHLIN. Why do you have to provide a specific level of treatment?

Mr. COSTLE. That may be the only way to deal with it.

Mr. BECK. If we felt confident that we could write maximum contaminant levels for every harmful organic contaminant in drinking water, that might be a strategy for providing some confidence that you have safe drinking water. A problem is that a lot of the drinking water in this country is derived from surface water, and it has potentially far more contaminants than the 10 synthetic organic chemicals for which we are trying to regulate.

So the maximum contaminant levels are likely to have their most impact on groundwater where we are finding, in some cases, higher levels of chemicals such as TCE than you might find in a surface water such as the Hudson River. For surface waters you have far more potential with regard to organics contamination, and we could probably never write enough maximum contaminant levels to effectively deal with the problem. So the treatment technique is its control strategy that is likely to deal with the whole array of problems. The other, maximum contaminant levels, is the more specific strategy, probably more oriented toward ground water type problems.

GRANULAR ACTIVATED CARBON TESTS

Mr. COUGHLIN. Our 1978 report asked EPA to do more research to assure that the health risks justifying regulatory action were real. I understand that EPA has developed techniques for recover-

ing concentrations of organic chemicals from drinking water for use in animal tests. I commend EPA for this accomplishment.

EPA's National Drinking Water Advisory Council recommended that prior to imposition of GAC, this technique be used to compare animals fed concentrates from GAC-treated water to animals fed concentrates from untreated water. Does EPA plan to complete any such tests before imposing GAC? Are funds sought for them?

Dr. GAGE. Those tests are underway at this time. In fact, we are looking at a variety of streams, both with and without chlorination, with and without GAC, and several other combinations.

Mr. COUGHLIN. Do you intend to complete those tests before you impose the GAC requirements?

Dr. GAGE. Initial bioassay tests, I believe, are under way now, and I think that they will be winding up for the most part in the spring and summer, but I will have to defer to Chris and Vic here.

Mr. KIMM. We have made a significant breakthrough in terms of concentration techniques and in the preliminary screening tests. There was a major scientific conference a week ago to review this kind of work. It is a new technology just coming on line. There are some technical problems related to the fact that the chemicals may change as you store the concentrates. Over time such changes could affect test results coming from the screening experiments which take time to conduct. More work on this will be conducted.

It is difficult at this point to give you a flat answer about whether we will be able to complete definitive work before we move ahead with regulations, but the work is going on and there have been significant scientific developments coming out of R&D in these areas.

If the techniques hold up, they will be very valuable tools for dealing with carcinogens in many media besides drinking water.

Mr. COUGHLIN. So you are telling me you don't plan to complete these tests before imposition of the GAC?

Mr. KIMM. I doubt we will have definitive tests completed by the time we move ahead, but there will be more information coming out of these tests and we have a technique which offers great potential for the future.

Mr. COUGHLIN. Our 1978 report underscored concern for the risks of GAC itself. The EPA commissioned the National Academy of Science to evaluate GAC for drinking water treatment. The resulting report listed a number of possible health risks, largely uninvestigated, which may be posed by GAC.

For instance, according to the report, (a) GAC may cause various catalytic reactions creating toxic chemicals, (b) GAC may cause "microbial end products of concern" to enter treated water, and (c) some pathogens may be able to colonize beds of GAC. NAS further noted that uncertainties about these effects may be magnified by the carbon regeneration process. Does EPA plan to use funds to investigate the health risks that may be posed by GAC before requiring nationwide GAC installation?

Mr. BECK. Yes, sir.

Mr. COUGHLIN. Under the Safe Drinking Water Act, isn't EPA required to limit rather than reduce contaminants that may harm health?

Mr. BECK. That certainly would be a logical reading of that law.

Mr. COSTLE. We are really not anxious to impose the technology that creates a set of risks that are different from but perhaps equal to the ones we are trying to use the technology to correct. The fact of the matter remains, but in the meantime, people are getting exposed to a lot of chemicals with uncertain effects, and the more we learn about it, the more we know, at least at a minimum, that we have reason to be very concerned. I don't think there is any practical way that you could take those 700 organic chemicals in Cincinnati's drinking water and develop maximum contaminant level standards for large numbers of them. We don't have the money, the research, or the animals or whatever, and we would be 10 or 15 years doing it.

We are dealing with a universe of over 40,000 chemicals that are produced for commercial use now. We are dealing really with a universe of over 4½ million chemicals that are essentially man-made that are in some use in this country today. We are terribly inventive about new ones. They are used in a multiplicity of products. In some places they may be safe and in others they may pose a risk. We are just beginning to see the orders of magnitude of research that may be involved if our approach must be confined to chasing one chemical at one time through all its permutations.

We have a geometric progression in the nature of the problem and we are trying to attack it in a linear incremental way. I just think that a prudent public health policy would involve finding ways to minimize the risk by minimizing exposure. I think the cost of doing that is absolutely relevant to the consideration. The efficacy of the technology is a crucial consideration, but I just think for something as important a consumer product as drinking water where each of us consumes a quart or more per day, bathe in it, and cook in it, that prudent, preventive public health says you don't wait for stacks of bodies to show up to say, well, we have a problem.

Mr. BECK. Congressman, I want to apologize, I did not mean to be flippant in my response. I meant to be very direct on those things. I would like to amplify what I meant there. With regard to the technology, I think one of the things that is always in question in terms of whether we are doing something for small communities or doing something with regard to granulated activated carbon in a larger sense is that you have to look at whether by doing those things you may be introducing other harms. For instance, in some of these home granulated activated carbon situations you may be accumulating bacteria which in effect can have a deleterious impact. We have done some work on point-of-use treatment systems to begin to look at this. That is a bigger question as you get to larger granulated activated carbon installations and you build up situations where you may have slugs discharged at some point. Those things are very much on the Agency's mind and central in our decisions as to what should be done.

With regard to taking any type of action from the standpoint of potentially introducing another chemical into the system which may, in effect, for the purposes of treatment, exacerbate a problem, that is something also that we are concerned about. The best example I can think of is the trihalomethane standard which was a standard to a great extent which was derived to control the way chlorine is used in treatment processes to limit unwanted byproducts which are in and of themselves carcinogens. So, yes, we are concerned about any technology choices we make and we really do understand the importance of being careful about any changes that we make in the system not to be introducing things that may introduce other harmful byproducts.

PLANT SCALE EXPERIENCE WITH GRANULATED ACTIVATED CARBON

Mr. COUGHLIN. Our 1979 Committee Report expressed concern about the lack of plant-scale experience with GAC. Are you providing for any more plant-scale experience before committing us to a broad scale investment in that?

Dr. GAGE. We have a number of activities under way, Mr. Coughlin, to give us more field experience with granular activated carbon. A request was made earlier about the progress or what we found in looking at a variety of these plants where there are granular activated charcoal beds operating. I said I would provide that for the record. I do have that now and will provide a discussion of what we found in Jefferson Parish, Louisiana, the Shreveport, Louisiana; Manchester, New Hampshire, et cetera. We are not leaving any stone unturned in this attempt to find out what is going on in actual field scale granular activated systems, both here in this country and also I might add in Europe.

Mr. Kimm has been chairing a committee made up of representatives from the NATO nations looking at the advanced treatment techniques for water supply systems both here in the North American continent and throughout Western Europe. We are finding some very useful results coming from a number of the European countries which have been using granular activated carbon in a number of cities for a good many years.

Mr. COSTLE. This was originally introduced in those cities to control odor problems in the water, as I understand it.

Mr. COUGHLIN. Last year we urged EPA to perform the best possible risk analysis with the available data and to assure that any health risks justifies this kind of a nationwide investment. Has such a risk analysis been performed?

Mr. BECK. There has been a risk analysis. You are talking about organics regulation?

Mr. COUGHLIN. Yes.

Mr. BECK. There is also an economic impact analysis on that regulation.

Mr. COUGHLIN. Can you provide a copy of that analysis for the Committee?

Mr. BECK. Surely.

[The material was received and is on file with the committee.]

POTABLE WATER

Mr. COUGHLIN. One final question, Mr. Chairman. I have asked this in previous years and in previous years we have questioned the definition of potable water, as to what is potable water. Do we yet know what potable water is? We have spent a lot of years defining it.

Mr. BECK. I guess when we get all done with the MCLs and everything we need to do and the pollutants, we will finally know what potable water is.

Mr. COUGHLIN. We still don't have a definition.

Mr. BECK. I have my own definition of it. My definition is water free of whatever contaminants so that it doesn't cause a health-related problem. To get at that definition you have to know an awful lot about all the chemicals that can potentially be in water.

I think TCE is an example of it, when is it that you have enough TCE in water that it is no longer potable. You have to get to all the chemicals to get to a definition of that term.

Mr. COSTLE. We keep changing what we put in the water so frequently that that definition is almost moot.

Dr. GAGE. This comes to a crunch when you are talking about recycling water that has gone through a municipal sewage treatment plant and all that this implies. There seems to be something psychologically different about using water from a sewage treatment plant for potable uses and taking water which would come out of a well or come out of a stream which may have gone through a sewage treatment plant at some time during the passage of those waters, however short a path, before it gets into the water supply system.

That is one of the reasons why we have such an intensive effort in connection with this Denver water project in trying to help deal with the psychological impact of using waters which have gone through a sewage treatment plant, so we can show definitive health data that hopefully the waters will not contain any materials, either biological or chemical, which can introduce any level of risk in individuals who drink that water. This is going to be a very slow process. It has to be worked out but, frankly, when you look ahead at the probable necessity of fairly massive water reuse in the latter part of this decade and certainly on into the 1990s, it is going to be something that we are going to have to deal with.

UNDERGROUND INJECTION CONTROL REGULATIONS

Mr. COUGHLIN. Last year we talked about the underground injection control program in some detail. Regulations for the program are far behind schedule. You stated at the hearings, "It has fallen behind our original projection. We now call for that set of regulations to be reproposed because of the controversy around it. The final promulgation would be called for before the end of this fiscal year."

However, I note in pages DW-27 and 28 that although the regulations were reproposed in 1979, the final regulations are not to be finished until 1980. When were the UIC regulations reproposed?

Mr. BECK. They were initially proposed in 1976 and then reproposed in April of 1979. We expect to promulgate the UIC regula-

tions, portions of the RCRA regulations, and the consolidated permit regulations at the end of April.

Mr. COUGHLIN. That is the target date?

Mr. BECK. For the underground injection program, the Resource Conservation Recovery Act and the amendments.

Mr. COUGHLIN. What caused the additional delays since you were here last year?

Mr. BECK. The things leadings to the additional delays were the problems we had with the Resource Conservation Recovery Act standards. That was the lowest common denominator that pulled down the schedule of finishing the other programs. But the Agency made a decision for the purposes of trying to have an efficient and consolidated permit program that it made sense to consolidate all of them, slow up the UIC program for a period of time, but do it in a completely consolidated fashion. In part, that was an attempt to ease some of the administrative cost burdens associated with the permit program.

Mr. MILLER. As we looked further into the permitting program, it turned out in fact that there were a lot of potential redundancies between it and UIC.

So the exercise was well worthwhile because we wouldn't have those redundancies now.

Mr. COUGHLIN. Thank you, Mr. Chairman.

STATE PROGRAM RESOURCE ASSISTANCE—DRINKING WATER

Mr. TRAXLER. The State program assistance activities is detailed beginning on page DW-29. The regular state program is remaining constant at $29,450,000. Have there been any changes in fund distribution from the table printed in the 1980 budget hearings on page 358.

Mr. BECK. We have all those State distributions we will supply for the record.

[The information follows:]

ALLOTMENTS FOR PUBLIC WATER SYSTEM SUPERVISION GRANTS

In March of 1979, we computed the tentative allotments of the fiscal year 1980 public water system supervision grants on a State-by-State basis. The tentative allotments have not changed since we first computed them. However, the tentative allotments were the amounts that each State was eligible for if it had primary enforcement responsibility for the full grant year. Thirteen states and territories did not meet this requirement and as a result did not or will not receive their full grant share. This is the only way that we have deviated from the original allotment figures. A tabulation of each State's tentative allotment and the amount that they have or will receive is provided in table No. 1.

TABLE #1

FY 1980
State Allotments for Public Water Supervision Program
Comparison of Tentative Allotment to Actual Allotments

State/Region	Tentative Allotment	Amount Issued or to be Issued
Connecticut	$ 395,400.00	$ 395,400.00
Maine	294,500.00	294,500.00
Massachusetts	405,200.00	405,200.00
New Hampshire	294,500.00	294,500.00
Rhode Island	294,500.00	294,500.00
Vermont	294,500.00	*129,600.00
Region I Total	$1,978,600.00	$1,813,700.00
New Jersey	$ 562,800.00	$ 436,600.00
New York	1,594,600.00	1,594,600.00
Puerto Rico	294,500.00	173,000.00
Virgin Islands	98,200.00	98,200.00
Region II Total	$2,550,100.00	$2,302,400.00
Delaware	$ 294,500.00	$ 294,500.00
Dist.of Columbia	294,500.00	-0-
Maryland	369,200.00	369,200.00
Pennsylvania	1,140,200.00	-0-
Virginia	675,700.00	675,700.00
West Virginia	329,800.00	329,800.00
Region III Total	$3,103,900.00	$1,669,200.00
Alabama	$ 359,100.00	$ 359,100.00
Florida	1,056,000.00	1,056,000.00
Georgia	629,300.00	629,300.00
Kentucky	338,700.00	338,700.00
Mississippi	449,300.00	449,300.00
North Carolina	1,204,900.00	*694,700.00
South Carolina	437,400.00	437,400.00
Tennessee	417,000.00	417,000.00
Region IV Total	$4,891,700.00	$4,381,500.00
Illinois	$1,014,300.00	$1,014,300.00
Indiana	439,700.00	-0-
Michigan	929,800.00	929,800.00
Minnesota	623,500.00	623,500.00
Ohio	980,000.00	980,000.00
Wisconsin	777,500.00	777,500.00
Region V Total	$4,764,800.00	$4,325,100.00

State/Region	Tentative Allotment	Amount Issued or to be Issued
Arkansas	$ 294,500.00	$ 294,500.00
Louisiana	434,600.00	434,600.00
New Mexico	294,500.00	294,500.00
Oklahoma	422,300.00	422,300.00
Texas	1,507,300.00	1,507,300.00
Region VI Total	$2,953,200.00	$2,953,200.00
Iowa	$ 460,100.00	$ 460,100.00
Kansas	406,100.00	406,100.00
Missouri	579,400.00	579,400.00
Nebraska	295,900.00	295,900.00
Region VII Total	$1,741,500.00	$1,741,500.00
Colorado	$ 393,000.00	$ 393,000.00
Montana	294,500.00	294,500.00
North Dakota	294,500.00	294,500.00
South Dakota	294,500.00	-0-
Utah	294,500.00	173,800.00
Wyoming	294,500.00	-0-
Region VIII Total	$1,865,500.00	$1,155,800.00
Arizona	$ 455,600.00	$ 455,600.00
California	1,970,900.00	1,970,900.00
Hawaii	294,500.00	294,500.00
Nevada	294,500.00	294,500.00
American Samoa	98,200.00	-0-
Guam	98,200.00	98,200.00
Mariana Islands	98,200.00	-0-
Trust Territories	294,500.00	294,500.00
Region IX Total	$3,604,600.00	$3,408,200.00
Alaska	$ 544,900.00	$ 544,900.00
Idaho	319,500.00	319,500.00
Oregon	375,800.00	-0-
Washington	755,900.00	755,900.00
Region X Total	$1,996,100.00	$1,620.300.00
National Total	$29,450,000.00	$25,370,900.00**

* Exact figure not yet available. Will be dependent on date of primacy assumption, which is still unknown.

** $4,079,100 represents the allotments of the eight States without primacy and will be reallocated to the primacy States.

Mr. TRAXLER. But were there any changes? Are you following your 1980 estimates?

Mr. KIMM. Pretty much. We believe they are pretty close.

Mr. TRAXLER. Show what you anticipate your allocations will be by State for 1981.

[The information follows:]

FISCAL YEAR 1981 ALLOCATION OF STATE PUBLIC WATER SYSTEM SUPERVISION GRANTS

[In thousands]

State:	*Amount*
Alabama	$366
Alaska	558
Arizona	398
Arkansas	294
California	1,738
Colorado	405
Connecticut	391
Delaware	295
District of Columbia	295
Florida	1,059
Georgia	574
Hawaii	295
Idaho	333
Illinois	1,022
Indiana	494
Iowa	480
Kansas	368
Kentucky	348
Louisiana	490
Maine	294
Maryland	384
Massachusetts	349
Michigan	1,010
Minnesota	595
Mississippi	452
Missouri	507
Montana	324
Nebraska	295
Nevada	295
New Hampshire	295
New Jersey	680
New Mexico	309
New York	1,669
North Carolina	1,166
North Dakota	294
Ohio	958
Oklahoma	468
Oregon	380
Pennsylvania	1,089
Rhode Island	295
South Carolina	457
South Dakota	294
Tennessee	439
Texas	1,609
Utah	295
Vermont	295
Virginia	686
Washington	728
West Virginia	294
Wisconsin	766
Wyoming	295

State:	*Amount*
American Samoa	98
Guam	98
Mariana Islands	98
Pacific Island Trust Territory	294
Puerto Rico	295
Virgin Islands	98
Total	$29,450

ALLOCATION FORMULA—DRINKING WATER GRANTS

Mr. TRAXLER. Why does North Carolina, a State with less than half the population of Texas, receive four times as much money? This is reflected in the estimated 1980 State allocations on page 358 of the 1980 hearing volume.

Mr. KIMM. The allocation formula in part is built on a factor reflecting numbers of water systems.

Mr. TRAXLER. Why don't you provide it for the record and include the factors used in making those grant distributions.

[The information follows:]

DRINKING WATER GRANTS ALLOCATIONS

The dollar amount of Federal grant assistance that each state is eligible for has been determined by applying a grant formula, consisting of several weighted factors, to the gross amount of grant dollars available for any specific fiscal year. For fiscal years 1976 through 1979, the factors comprising the grant formula were population (weight factor 30%), land area (weight factor 10%), and total number of public water systems within the state (weight factor 60%). The grant regulations were amended on February 6, 1979, and resulted in a revised grant formula. The number of public water systems was replaced by the number of community water systems (weight factor 48%), and the number of non-community water systems (weight factor 12%). The factors for population and land area remained the same. This new formula became effective beginning with the FY 1980 grants. The formula, as applied to any State, would be:

Initial Allocation Percentage equals .3 multiplied by State Population divided by Nat'l Population plus .1 multiplied by State Land Area divided by Nat'l Land Area plus .48 multiplied by State Community Water Systems divided by Nat'l Community Water Systems plus .12 multiplied by state Non-Community Water Systems divided by Nat'l Non-Community Water Systems.

The initial allocation percentages for each State are multiplied by the national grant allotment ($29,450,000 for FY 1980) to obtain the States' initial grant allotment. The grant regulations provide, however, that each State receive not less than 1% of the national allotment. Each State below the 1% minimum is increased and the formula is applied again. The resultant figures are the final tentative state allotments.

As the result of this grant formula, the fiscal year 1980 allotment for North Carolina was $1,204,900 and the revised allotment for Texas was $1,507,300. The raw data for the two states is provided below:

	Population	Area	Community systems	Non-Community systems	Resultant allocation percent
North Carolina	5,525,000	48,798	3,934	9,126	0.046531
Texas	12,830,000	262,134	4,200	2,177	.058667

Even though Texas has a larger population and has more land mass than North Carolina, North Carolina has 4 times the non-community water systems that Texas has. This factor was responsible for North Carolina's sizable allotment.

STATE PROGRAM RESOURCE ASSISTANCE—UNDERGROUND INJECTION CONTROL

Mr. TRAXLER. The underground injection control program justification appears on page DW-31. Last year, Congress reduced the 1980 request of $7,795,000 by $3,400,000 because the regulations had not been issued and prior year obligations were lagging far behind plan. Obligations in 1979 totalled $6,638,000. Is that correct?

Mr. BECK. Yes, sir.

Mr. TRAXLER. Is it also correct that September obligations were $2.5 million, or 38 percent of the yearly total?

Mr. BECK. It is correct in September that we did have a lot of obligations. I don't know that number, but our schedule for obligations of the money this year are heavy in the spring of this year.

Mr. TRAXLER. Fourth quarter obligations were $3.7 million or 56 percent of the total. Despite the heavy obligations that came later in the year, $7 million was unobligated, including $498,000 of prior year funds which lapsed. Is that a correct statement?

Mr. BECK. That is correct.

Mr. KIMM. What has happened is that as the regulations were reproposed and went to comment period, there was a period of time in which it was very difficult for the States to move ahead on grants for a program for which they did not understand the details, grant obligations have picked up very rapidly recently.

We have already submitted for the Committee in answer to a prior question a very detailed schedule of obligations for these State grants. Approximately $4 million have been obligated as of March 1. Another $2.5 million are in-house and we expect to be able to use all the remaining funds this fiscal year.

Mr. TRAXLER. Last year you estimated 1979 obligations would be $13.6 million, but you didn't achieve 50 percent of that.

Mr. BECK. The difference is this year we are going to be on schedule and will be finishing the UIC program regulations in April of this year. By statute, promulgation of the UIC regulations begins an 18-month period for the states to assume primary responsibility for the UIC program.

Mr. COSTLE. When do you expect markup?

Mr. TRAXLER. Middle to late May.

Mr. COSTLE. We can give you an update on a monthly basis from now to then, so that you can judge for yourself, given the fact that we didn't do it last year, I think you will want to see some pretty hard evidence that we are staying on track.

Mr. TRAXLER. What are estimated obligations in the UIC grant program in 1980 and 1981? You can provide that for the record.

[The information follows:]

UIC OBLIGATIONS

The estimated obligations for the UIC grant program in fiscal year 1980 are $11.4 million and in fiscal year 1981 are $8,574,000.

UNDERGROUND INJECTION CONTROL

Mr. TRAXLER. I leave you with this thought. Can we really feel confident about these kinds of estimates based on our 1979 experience?

Mr. BECK. Yes.

Mr. TRAXLER. Do you remember that you said, yes, last year?

Mr. BECK. No, but I think we can do it this year.

Mr. TRAXLER. How many states have been designated by EPA as requiring a UIC program?

Mr. BECK. We are designating all 57 states and territories for the UIC program this year.

Mr. KIMM. We phased the designation of states requiring the UIC program. We have at the moment 41 and are designating the remainder of the states next month.

Mr. TRAXLER. Why don't you provide for the record a list of these states, the date of their designation and the amount of grant funds in 1979, 1980, and 1981.

Mr. COSTLE. The rest will be this month?

Mr. BECK. Not this month. The next 2 or 3 months.

Mr. TRAXLER. Indicate also what the 1980 obligation is to date and by month for 1980.

[The information follows:]

Underground Injection Control Program

Designation of States and Grant Allocations

Designation 9/25/78	FY 79	FY 80*
New York	282,800	362,800
Pennsylvania	400,200	405,600
Maryland (4/11/79)	61,000	122,000
West Virginia	53,000	315,000
Kentucky	189,800	265,000
Mississippi	155,600	227,000
Florida	145,200	211,600
Illinois	341,900	429,300
Ohio	294,400	378,400
Michigan	374,000	468,100
Indiana	235,000	314,200
Oklahoma	321,500	438,000
Osage County	20,100	
Louisiana	353,900	539,000
New Mexico	228,600	308,500
Texas	759,600	892,200
Arkansas	148,500	219,000
Kansas	420,600	521,500
Iowa	110,300	176,000
Colorado	100,000	307,800
Utah	159,900	261,400
Wyoming	317,700	409,500
Arizona	119,200	185,900
California	407,200	496,800
Designated 6/19/79		
Massachusetts		110,400
Virginia		111,400
New Jersey		114,600
Alabama		194,100
Georgia		116,500
North Carolina		139,500
South Carolina		101,500
Tennessee		132,900
Minnesota		135,800
Wisconsin		114,800
Missouri		141,500
Nebraska		149,200
Montana		201,200
North Dakota		150,800
Hawaii		104,700
Idaho (10/3/79)		97,300
Oregon		110,500
Washington		141,300

*does not include $763,200 to be reallocated among first 41 States designated

To Be Designated Approximately 3/31/80	FY 80*
Connecticut	41,500
Maine	39,900
New Hampshire	37,400
Rhode Island	36,400
Vermont	36,200
Puerto Rico	40,400
Virgin Islands	32,000
Delaware	35,200
District of Columbia	35,500
South Dakota	41,700
Nevada	45,600
American Samoa	30,700
Trust Territories	31,400
Guam	31,700
North Mariana Islands	30,600
Arkansas	62,900

*does not include $763,200 to be reallocated among first 41 States designated

FY 80 DRINKING WATER - UIC - OBLIGATIONS

Month	Available NOA	Available Carryover	Available Total	Obligations NOA	Obligations Carryover	Obligations Total	Unobligated NOA	Unobligated Carryover	Unobligated Total
October 31, 1979	4,395,000	6,453,200	10,848,200	...	...	...	4,395,000	6,453,200	10,848,200
November 30, 1979	4,395,000	6,453,200	10,848,200	...	...	...	4,395,000	6,453,200	10,848,200
December 31,1979	4,395,000	6,453,200	10,848,200	...	266,250	266,250	4,395,000	6,186,950	10,581,950
January 30, 1980	4,395,000	6,453,200	10,848,200	55,600	2,097,750	2,153,350	4,339,400	4,355,450	8,694,850
February 29, 1980	4,395,000	6,453,200	10,848,200	55,600	2,497,075	2,552,675	4,339,400	3,956,125	8,295,525

NUMBER OF UIC APPLICATIONS

Mr. TRAXLER. Also, how many outstanding grant applications does EPA currently have on hand.

Mr. KIMM. I believe it is 17.

Mr. BECK. We will supply that for the record.

[The information follows:]

STATE APPLICATIONS

The Agency is processing 18 applications at this time. They are: Massachusetts, Georgia, North Carolina, Illinois, Wisconsin, Indiana, Michigan, South Carolina, Missouri, Montana, Hawaii, California, Maryland, Minnesota, Virginia, Tennessee, Iowa, and Wyoming.

REPROGRAMMING OF FUNDS

Mr. TRAXLER. Page DW-32 indicates a 1980 reprogramming of $1 million from the special studies demonstrations and training activity to standards and regulations development. This amounted to 70 percent of the $1.4 million appropriation. Because this transfer occurred within the drinking water medium, this Committee was not notified in advance. However, the Senate Appropriations Committee requires notification of any reprogramming in excess of $250,000 between programs or activities. Did the Agency notify the Senate Committee before reprogramming these funds?

Mr. BECK. I don't know.

Mr. DRAYTON. I don't know, but we clearly should have.

Mr. TRAXLER. Why did you make that transfer? Why did you reprogram $1 million from special studies to standards and regulations?

Mr. BECK. It was mainly to initiate the Memorandum of Understanding that we had signed with the FDA to take on the additive effort, and the purpose of that was to begin to get in and take a look at what was happening with regard to different chemicals as they were being used in treatment, for instance, of water supplies, and thus leaving behind some residue contaminants that might be a problem.

I should note that the $1 million reprogramming from rural water association grants did not reduce the funds available for that grant in fiscal year 1980, because the Agency obligated $1 million in September 1979 in addition to the planned 1979 level.

Mr. COSTLE. One of the things we have tried to do is to sort out, really at the request of industry, a jurisdictional question as between ourselves and the FDA. If you treat water as a foodstuff, FDA had the authority but did not have a program activity going to look at a variety of things. For example, when you coat the inside of water tanks in these towns, somebody should be looking at what kind of coating is being used. Does it leach? Is there any health significance associated with that?

That had been FDA's responsibility, although the industry kept coming to us for guidance, and FDA also, to renegotiate a Memorandum of Understanding with FDA where we agreed to take on that responsibility and give the industry essentially an unambiguous situation as to who to come to in terms of advice and counsel.

60-531 O - 80 - 12

ACADEMIC TRAINING

Mr. TRAXLER. Will the agency use the $150,000 requested, and $350,000 Congressional add-on solely for academic training in this activity?

Mr. BECK. Yes. There is no money requested in next year's account for that, however.

Mr. TRAXLER. In the 1981 budget?

Mr. BECK. In the 1981 budget.

Mr. DRAYTON. We do have a small sum in the central training account which has also been reduced, for this sort of activity. Some of the programs also have maintained funds in their program management account for academic training.

Mr. TRAXLER. That concludes our drinking-water session and we look forward to construction grants and solid waste tomorrow.

THURSDAY, MARCH 6, 1980.

Mr. TRAXLER. The committee will come to order.

SOLID WASTE BUDGET REQUEST

Turn to the Solid Waste Program on page SW-1. In 1981, the solid waste medium reflects the largest dollar increase and percentage increase. The total 1981 request is $147,448,000. Permanent workyears are increasing from 406 in the 1980 current estimate to 774 in 1981. Full-time equivalency nearly doubles from 496 to 978. What were the major reasons for the deviation from plan?

Mr. BECK. Primarily for two reasons. One was that we delayed obligation of some of the resource recovery project monies. We were in the process of intensively negotiating some of those projects. We wanted to get hard outputs in that regard. I think that we carried over about $6.2 million of that money.

The second reason is that we accounted for a carryover of about $4 million for subtitle D money. Subtitle D is the section of the law that deals with the responsibility for areas primarily other than hazardous wastes. We were in the process of changing some of the criteria and the guidance for how States should go about doing the inventory of open dumps and evaluating the aspects associated with the disposal of municipal wastes.

For that reason, we felt it was prudent before we made any obligations of grants in either of those two categories that we had been very specific in terms of our wants and needs. We then went ahead and obligated the money.

I think it is important to note at this point that our expectations are that we are not, in either of these instances, going to have a major amount of carryover as we now start looking at 1982. We should have some, but not a significant amount.

So there is much better management and it is much more tied to hard outputs.

HAZARDOUS/SOLID WASTE REGULATORY PROGRAM

Mr. TRAXLER. Last year Mr. Jorling stated, "We feel with confidence that we will have the regulations in place on the schedule called for by the court order." At that time the order called for all major regulations to be promulgated by December 31, 1979. Unfor-

tunately, that schedule slipped. Page SW-5 indicates that the Agency has submitted for court approval a further extension. It calls for regulation issuance into late 1980. What is the status of that request?

Mr. BECK. The court embraced that request and supported it with some very nice language regarding our reasons for the request. In addition, they agreed with a lot of our logic.

I think it is important to note that I can say on the record this year that we are going to meet that schedule.

I can also point to some of the major pieces being either finalized or in final review right now within the Agency. We have gone out with early notification to all the States of what our intents are with regard to Section 3006, for their authorization. A week-and-a-half ago we announced three major regulations for Section 3002, 3003 and 3010.

I have reviewed and basically concurred in the interim status requirements which are the requirements that we need to accomplish by April, 1980. Those are the major moving pieces of that regulatory program. We feel we are prepared to successfully respond to that court order.

Mr. COSTLE. Mr. Chairman, I was particularly gratified when the judge essentially said that, and here I am paraphrasing, he continued to be impressed with the conscientiousness of the Agency in trying to get this very complicated set of regulations out under very difficult circumstances.

There was no demurrer from the parties on the new schedule. We are meeting it in fact. The key was in announcements last week where, as Chris said, we have gotten the first major pieces out which establish the manifest system. We will in turn establish the inventory of where the waste is, who is generating it, who is transporting it, and where it is coming finally to rest.

The next big piece is the April piece and that is on schedule. We will make that promulgation and, simultaneously, or within a matter of a few days, we will also get the consolidated permitting regulations out which brings the last piece of this really into place. So finally, I think it is happening.

LEGISLATIVE MANDATES

Mr. TRAXLER. I suspect this Committee and the public would want an explanation from the Agency as to why the court established schedule, which permitted delays of up to 20 months in the legislative deadlines, were not met. Why don't you provide that information for the record. We appreciate the problems that are involved in this kind of endeavor but this program has experienced delay after delay.

In that explanation you might also touch upon why the new regulatory concepts that are mentioned on page SW-4 are involved in the reasons for delay.

Mr. BECK. Sure.

[The information follows:]

LEGISLATIVE MANDATES

RCRA required simultaneous promulgation of seven regulations, each of which standing alone is extremely complex. EPA has never before been directed to develop

a program of this complexity in as short a period of time. In contrast, the air and water programs have been built up over 20 years.

The coverage of the statute is massive, requiring "cradle-to-grave" management of all hazardous waste—affecting hundreds of thousands of waste generators, transporters, treaters, storers and disposers; millions of people indirectly; and regulating the disposal of millions of tons of waste annually, produced by some 20 industrial sectors of the economy.

Having no previous experience in developing or operating a Federal solid waste regulatory program prior to RCRA, EPA has had to construct this one "from the ground up" in the face of limited technical or regulatory state-of-the-art data on solid waste management.

RCRA contains new requirements unique to the Agency's experience such as financial responsibility and the manifest system. As Subtitle C regulations affect virtually every other EPA regulatory program. Deputy Assistant Administrators for these programs maintain day-to-day involvement in drafting the regulations and Office of Solid Waste must provide extensive briefing to these offices, which must formally concur on the final regulations.

In addition to Subtitle C, RCRA also directed that regulations be promulgated for Subtitle D (and that has been accomplished) and that EPA carry out an aggressive resource recovery program. Concurrently with RCRA, EPA was directed to develop other new environmental programs, in particular the Drinking Water Act and the Toxic Substances Control Act, and to continue to expand existing programs in air, water and pesticides. All of these burdens were placed on the Agency at a time of financial stringency.

Under laws of rulemaking, EPA must review, analyze and respond in writing to over 1,200 sets of comments in the final rulemaking. Many of these comments are extremely sophisticated, prepared by teams of lawyers and technical people for the regulated industries. Preparation of issue papers on over 40 major issues, while necessary to the decision making process, was time consuming and added to the time needed to develop a final regulatory package. In addition, OSW was required to address hundreds of minor issues raised by the proposed regulations.

EPA must prepare numerous studies and other documents to support the final regulations. This information must also be available for comment, and, subsequently, will require EPA to evaluate, prepare written responses and revise the regulations, preamble, background documents and draft reports, while simultaneously finalizing the remainder of the regulations and dealing with the reproposals.

In response to public comments and as a result of receiving new information, we have decided to make a number of significant changes in the regulations which are likely to require reproposal or partial reproposal of major portions of the Section 3001 and 3004 regulations, including:

The list of hazardous wastes
The criteria for listing wastes as hazardous
The criteria for demonstrating that a listed waste from an individual facility is not hazardous
The contents of petitions for the approval of equivalent sampling, testing, or analytical methods
The regulation of reused/recovered wastes
The technical standards for landfills, landfarms and surface impoundments
The regulation of storage of waste piles
The regulation of certain special wastes

It was physically impossible to prepare Federal Register notices announcing these reproposals and the background documents to support them, allow a reasonable public comment period (thirty days), organize and evaluate the comments received, prepare written responses to comments and revise the regulations, preambles and background documents while simultaneously finalizing the remainder of the regulations by December 31, 1979.

Extraordinary (and untested) emergency procedures were adopted to meet the December 31 deadline. However, they did not prove to be fully successful, largely because they required us to do too much too quickly. For example, the decision making strategy which we adopted last spring to streamline the development of final regulations turned out to be largely unworkable in practice. In attempting to meet our Court schedule, we tried to make decisions on major issues in June and July before we had an opportunity to fully analyze those issues and obtain all available data, and before we could examine issues in the context of the entire hazardous waste program. As a result, many of our early decisions are now being re-evaluated in the light of new information. Similarly, our extraordinarily tight internal schedules for the completion of draft final background documents, regula-

tions and preambles have resulted in the production of documents which our General Counsel has advised us must be significantly improved if the final regulations are to withstand judicial review.

As a result of the problems outlined above, we were not able to meet the December 31 deadline. We did, however, promulgate the Section 3002, 3003, and 3010 regulations on February 29, 1980. Sections 3005 and 3006 and portions of 3001 and 3004 will be promulgated in April 1980. This will allow us to have a meaningful "core" Federal hazardous waste management system in place only four months after the deadline set forth in the Court's January 3, 1979, order.

We hope to repropose those portions of Section 3001 which require reproposal and are not finalized in April, and the technical standards for treatment, storage and disposal facilities under Section 3004 after the core program is finalized. We expect the reproposals to be finalized during the fall of 1980.

SUPPORT OF SUBTITLE C REGULATIONS

Mr. TRAXLER. In last year's hearing we asked that the 1981 justification include a page showing program levels for the solid waste medium. But the 1981 justifications do not include that information. You come before us with a request for 800 people and $150 million—larger than many government agencies—and yet you apparently are not adequately interested in the work of this Committee to even read the previous year's testimony. Will you provide that program activity data for the record?

Mr. BECK. Sure.

[The information follows:]

Solid Waste Program Levels

Program Levels	Actual 1979	Budget Est. 1980	Current Est. 1980	Estimate 1981	Increase + Decrease - 1981 vs 1980
Number of Subtitle C regulations promulgated (§ 3001-3006,3010)	0	7	7	0	-7
Number of procurement guidelines proposed (§ 6002)	0	3	3	2	-1
Number of procurement guidelines proposed vs. promulgated	0	0	0	3	+3
Number of States expected to receive interim authorization to run hazardous waste programs	0	41	0	37	+37
Number of Urban Policy grants managed	63	63	63	63	-
Number of Notifications processed	0	400,000	400,000	-	400,000
Number of notices of interim status issued	0	30,000	30,000	-	30,000
Number of public information documents distributed	790,000	750,000	800,000	800,000	-
Number of preliminary investigations of uncontrolled hazardous waste sites	300	500	500	500	-
Number of full investigations of uncontrolled hazardous waste sites	-	70	70	70	-
Number of enforcement actions against uncontrolled hazardous waste sites	7	35	35	35	-

SOLID WASTE—PUBLIC SECTOR ACTIVITIES

Mr. TRAXLER. Turn to page SW-13, public sector activities. The total request is $26,446,000, $18,303,000 above the 1980 budget estimate and $12,203,000 above the 1980 current estimate.

HAZARDOUS WASTE CONTROL

An interesting statement is made on page SW-14. "After passage of RCRA, EPA revised its research strategy towards the very difficult problem of hazardous wastes and their effects on the environment."

Yet a rereading of the 1979 R&D justification submitted to Congress 15 months after the passage of RCRA—reveals a heavy emphasis on municipal solid wastes, not on hazardous wastes. The 1979 accomplishments bear this out. The question is, why did it take a series of catastrophies to get the Agency's R&D focused on hazardous wastes? Couldn't these problems have been anticipated better?

Dr. GAGE. I think I should reflect maybe a longer term view since I was around during that particular time. Frankly, there was a policy orientation within the Agency at that time that as far as industrial hazardous wastes were concerned, the solution of that problem would be left to industry and the Agency should continue to focus on the public sector activities, namely, the safe disposal of municipal solid wastes.

There was a real division of opinion within the Agency at that time, but the view held that we should continue to focus our efforts on municipal solid wastes and very frankly it was not until we began to get well along in the development of the regulations implementing the Resource Conservation and Recovery Act did enough of the individuals in the Agency responsible for solid and hazardous waste control recognize how severe the data gaps really were.

I think it just took the massive jar of our problems in dealing with RCRA to very dramatically shift the policy orientation of the Agency. I think the Administrator and Mr. Beck and now Mr. Plehn, the Deputy Assistant Administrator for Solid Waste, are solidly behind this. It is, unfortunately, coming late, but better late than never, particularly given the enormity of the problem.

Mr. BECK. Mr. Traxler, I know that we want to keep responses down to a few people, but this is a central point that I think is going to follow through this budget and I would like to pick up on it.

In 1972 it was the first time that we had any States in the Union regulating hazardous waste management. In 1976 when RCRA was passed, we had only about 100 people at the State level doing anything with hazardous waste management.

So we had almost a complete indifference or unawareness with regard to appropriations or laws at the State level when the Federal law was passed. In 1975 the Agency had approximately 25 people programmed into the hazardous waste area when the Act was passed. So 1976 and 1977 were a period of just thinking how we would deal with municipal garbage.

The Act was overwhelming at that point. Since that time, there has been a growing public awareness and a growing awareness on our part of the problems. If you look at the R&D budget or the historical budget in this program, resources for the Resources Conservation and Recovery Act program have basically lagged because of our growing awareness of the magnitude of the program.

In 1979, 1980 and 1981 we are starting to see the real resources with which to deal with it. That is why you are seeing a tremendous growth. I feel that the Agency honestly wishes we had been a little smarter in 1975 and 1976 and possibly could have avoided the problems that we are having right now. However, we are digging ourselves out of a hole and we have to acknowledge this fact. Both Steve and I were in the Agency at the time. Fortunately, we can disavow some of this since we were working in different areas of the Agency, but I think all of us share the fact that we should have really anticipated this.

Mr. COSTLE. In fact, I recently had a conversation with a budget examiner who had been involved in the key conference on the Hill when RCRA was being hammered out between the House and Senate. He said the amazing thing about this was that the provisions on hazardous waste were an afterthought. Nobody had really focused on that problem and had any sense of its dimension. It was clearly not a central focus of the conference. A lot has happened in a fairly short time and it is unquestionably one of our most complicated problems.

We are dealing with 54 million metric tons a year of this waste, going to thousands of different sites. We now will know, under the regulations we just promulgated, who is generating it.

Mr. TRAXLER. You may be adding another 250,000 tons of waste a year at minimum.

Mr. BECK. We are thinking about that problem.

Mr. TRAXLER. I am glad you are.

Mr. COSTLE. There are somewhere in the neighborhood of 400,000 generators of waste. I don't know how many transporters, but there are literally thousands of sites and a variation in types of waste streams. Once you wind up at a landfill, you have waste streams that get mixed so you have in effect a different waste stream.

It is just going to take time to impose some regulatory discipline on that messy problem. This program will, I think, turn out to be as large and as complicated and probably as serious as either the air or the water program have become. It is just inevitable, given the nature of the problem.

RCRA REGULATION DEVELOPMENT

Mr. TRAXLER. Let's turn to your 1980 supplemental request of $5.6 million to support the RCRA regulation development. The regulations are now nearly two years late and here you are requesting supplemental funds to aid in their development. Why wasn't this need recognized two years age? Or one year ago. Why, when we can see the light at the end of the tunnel and we are toward the end of the process, are you looking for a supplemental?

Mr. BECK. I think one of the reasons for this, which goes back to the theme I laid out earlier, is that resources did not start showing up in this program until we were confronting the first phases of the regulatory program and realized the magnitude of the problem.

Mr. TRAXLER. Let's put this in perspective. Your regulations are going to be filed by agreement with the court in April.

Mr. COSTLE. Some have been filed.

Mr. BECK. Are you referring to the Section 3004 standards which will regulate the disposal of hazardous wastes and the 3001 regulations which will list the wastes that need to be dealt with?

Mr. TRAXLER. That is correct.

Mr. BECK. The Agency again, given my concept of its history, was late getting off the mark with regard to proposing the regulations and getting the resources in the program to deal with this. They proposed regulations approximately one and a half years ago. The proposal generated seven linear feet of comment.

The Administrator laid out the implications of what we need to do to respond page by page to all this material. In doing this and in examining the record, we began to think about some changes that we wanted to make in the rulemaking but in doing that, and I cannot speak freely to those changes because we will speak to them publicly in April, but in doing that we knew that we were leaving behind a big job that still needed to be done. We knew we needed to go into different categories of industries. We have identified 22 categories that we want to go into more specifically.

We have had some discussions about foundry waste. There are different types of foundries with different materials. We did that with the knowledge that in fact we were going to be wanting to refine some of these regulations over time and we might be wanting to look at ways of having some exclusions in different categories and that that was important and an ongoing job.

We knew in order to basically deal with what was going to be the emerging problems, some of them coming to our attention through the rulemaking process, that we were going to need resources this year and resources in the outyears. We immediately start thinking in terms of how we can manage this. Also, you cannot divorce Section 3001, the listing of wastes, from the standards that you impose, because the listing of the waste is not the real significant issue other than it has an adverse reaction in those areas affected.

Mr. TRAXLER. It has an economic response.

Mr. BECK. The real economic response is felt in the area of the standards that you impose through the regulations for disposal. There is the problem that if it is hazardous, people don't want it in their backyard, thus presenting a siting problem.

The economic problems relate to the standards to be imposed. The schedule that we are envisioning here has us coming out with interim status standards in April. I will talk about what we proposed. Those were the standards that might be imposed on all disposal and storage facilities. They were fairly reasonable. They include some fences and criteria in terms of how you need to keep records and some minimal information on terms of how we want to do ground water monitoring around sites. However, these were not the standards which, in fact, would be significant with regard to too terrible a cost.

The real standards, if you look at our schedule, speaks to coming out in April and into the fall with the more refined standards which are those standards associated with imposing more specific requirements, permit by permit. In our discussions, we have talked about doing something between April and the fall in terms of refining those standards, but also with the full knowledge that this will also be the area over the next decade where we will be extensively refining these standards since we may have to limit how much we impose because of the lack of knowledge on some of the wastes and how they contaminate. Hence, the supplemental is geared so as to get ahead of the learning curve, deal with some of the problems that we have right now, but also with the understanding that eventually we are going to be refining our knowledge about wastes and refining the levels of technology that we want to impose for treatment.

Our problem is, in part, in terms of our levels of knowledge. We have what you might call a "dark age" control program right now. We have people who have been finding the least costly disposal option. We call this the backyard swamp. We know that eventually this will be where the evolutionary changes are going to take place and, also we know, given time, we are going to have to be refining the standards under Section 3004. Conterminously with that, we will be doing a refinement on our data base associated with chemicals. We are trying to balance these two areas right now in our rulemaking process. What we are trying to do is, through our research effort and through my office efforts, strengthen our regulatory base, in terms of choices we are making now and choices we may defer now, in order that we may begin to deal and anticipate far more shrewdly than we did in the past as to what the future looks like. Our budget is designed to do that. It is designed to build us out of the problem that we have had.

I can only say that I am very sympathetic with your concerns. I know the issues you are wrestling with. You are saying, have we brought in items we should not have and how do we plan to deal with that, how do we plan to defer these items and administer this program in terms of the standards we are imposing or how do we plan to put things off for another day in terms of how we deal with it.

In listing a waste, the regulations talk about physical or biological or chemical characteristics and also about quantity or concentration. There are certain options that the Agency has with regard to quanitities, so that it may focus on hazardous wastes with large quantities. The initial proposals talked about a 100 kilogram cutoff. We are examining that issue. We talk in our budget about the consideration of small generator cutoffs. That may mean that we may be deferring wastes and coming back and recapturing them later as a result of some additional knowledge.

We have also felt very strongly that you just can't defer everything. This Agency needs to move on this problem. It needs to set a course and go after it. We wish it were 1975 and we could start all over again, but we are now in 1980. We now have chosen a course, and we must now administer that course far more sensibly. That theme is going to translate into each of these budget categories.

1980 SUPPLEMENTAL REQUEST TO SUPPORT THE RCRA REGULATION DEVELOPMENT

Mr. TRAXLER. Provide for the record the specific research that would be accomplished with the $5.6 million supplemental. The supplemental situation in 1980 is very similar to 1979. That is, the bill may be enacted very late in the fiscal year.

[The information follows:]

RCRA SUPPLEMENTAL

The specific research that would be accomplished with the $5.6 million falls into two areas:

	Millions
Land disposal	$4.2
Incineration	1.4
Total	5.6

Land disposal.—During the second half of fiscal year 1980, EPA will promulgate the "best engineering judgment" standards for landfill, surface impoundment and land treatment facilities. The regulations will specify the factors to be considered in permitting a facility and the performance standards to be met. Presently lacking and critically needed are extensive guidance materials for the permit writer based on present state-of-the-art information, which allows the permitting official to make the evaluation of the ability of a proposed facility to meet the performance standards expected of it. The present information base of which to develop the guidance manuals is currently limited to only a small portion of those waste streams which will be candidates for land disposal. Although a first set of guidance manuals can be developed from this present information base, the information base needs to be supplemental by the planned expanded R&D program. It is expected that one to one-and-a-half years of accelerated research can be obtained between now and the time when the permitting process will commence. This will accomplish a considerable amount improving the information base.

The research program will be preparing the following manuals during fiscal year 1980 and fiscal year 1981 to be used in April 1981 when the permit program begins:

Containment manual for landfills.—The basic procedure for evaluating the containment time and volumetric liquid release by a landfill or surface impoundment design. Includes enough material from the other manuals to stand by itself as an evaluation tool

Water balance methods.—This manual will describe application and special precautions of Thornthwaite method of estimating the water balance at a landfill disposal facility. This information will be used in the containment and the cover manual by the permit writer. It also will be useful in the design of the landfill.

Cover manual.—This manual is to provide a description of engineering methods to estimate and control the volumetric flux of water which can be expected to infiltrate the waste. Included will be design examples and guidance for the estimated ranges of coefficients and design conditions. Although the major emphasis will be on control of infiltration other cover material functional requirements will be addressed.

Leachate collection and liner manual.—This manual is intended to provide specific design, construction, and operation guidance for polymeric for soil liners, and the leachate drain system. Compatibility of liner and waste materials will be discussed, data presented, and a protocol presented for determining adverse or reactive combinations. Methods for estimating the performance of liner systems will be presented. Methods for determining drain pipe spacing, lengths, and permeable layer specifications will be included.

Waste and leaching modification manual.—The goal of this manual is to identify and describe methods for meditating the hazard potential of wastes or their leaching characteristics. Specific outputs are presently limited to the chemical fixation area but future outputs will be identified through a feasibility study.

Operation manual for land treatment.—This manual is to provide information on safe landfarm operating conditions to allow acceptable containment release to the environment. Field validation from three waste streams will be utilized to develop the manual. Monitoring data will be included.

Closure manual for land treatment.—This manual is to provide information on closure and post-closure care by determining the need for cover. Included will be information on soil mutagenicity, soil erosion and runoff, containment migration, plant uptake, and direct human exposure. Also, monitoring methods to determine performance will be specified.

Containment manual for surface impoundments.—This manual is to provide information on the retrofitting aspects of membrane liners placed under surface impoundments. Also the procedure for evaluating the containment time and volumetric liquid release will be included.

Closure manual for surface impoundments.—Process for evaluating waste, design, and hydrogeology to decide whether sludge is to be left as-is, fixed, or removed. If sludge removed, what is to be done with underlying contaminated soil.

Attached is the January 16, 1980 status report of the detailed plan for the Land Disposal Program referred to as "Operation Fast Track." This gives the specific funding plans for the $4.2 million.

Incineration.—EPA will promulgate in August-October time frame, a set of factors, criteria, formulas, models, and/or performance limits around which Agency can issue permits using their "best engineering judgement" (BEJ). The regulations will contain as many decision models, performance standards, protocols, and design and operating control as can be fully supported both technically and legally. Since it is expected that the above models, standards, protocols, etc., will be limited the agency will also issue a set of factors to be considered in determining the adequacy of the facility—the determination to be based on the BEJ of the permitting official.

Although we recognize that there is a shortage of knowledge on which to best incinerator regulations, we also recognize that it is in the interest of the Agency to permit these incineration facilities. Therefore the regulations are going to be designed to get new incinerators on-line while providing for protection of the environment in the best manner possible.

The research program will concentrate on producing a manual of permit writer guidelines in fiscal year 1980 and fiscal year 1981 to be used by the permit program beginning in April 1981.

JUSTIFICATION FOR 1980 SUPPLEMENTAL

Mr. TRAXLER. Is the supplemental necessary under the existing time frame and recognizing that time frame, do you need the total $5.6 million?

Dr. GAGE. Yes, sir.

Mr. TRAXLER. Shown on page SW-16 are the two areas that address the supplemental, namely, landfill and hazardous waste destruction. Can you elaborate on these?

Dr. GAGE. We are preparing manuals of four evaluation permits in support of the RCRA regulations under the landfill and hazardous waste destruction activities, namely, incineration. We have already started the process of developing the outlines for these manuals and there will be some seven manuals under landfilling and at least four manuals under incineration.

We have developed the contract support packages because these will have to be done primarily with those in the private sector. We are just not able to bring enough people on and train them in such a short period of time. Assuming that the supplemental will be forthcoming we will begin the advertising process. If it doesn't, then we will end up having to cancel the advertisements.

We do have a long time frame from the time the decision is made to go ahead and fund to the time when we can actually get the money in the hands of a contractor to begin this process.

We have started this process in anticipation of the supplemental. If the supplemental is not approved, then we must delay this obviously into the next fiscal year.

I personally believe that the timing of the availability of these guidance manuals to support the entire RCRA program is so critical that without them there will just not be a substantive basis to make judgments on the efficacy of plans for incineration and landfills that will be coming in for interim status approval.

Mr. TRAXLER. Can you tell us how many workyears the supplemental includes.

Dr. GAGE. As you can see on SW-13, there will be a reprogramming of 3 permanent positions during fiscal year 1980. We have moved those positions out of our municipal waste program and have oriented those efforts almost entirely toward hazardous wastes. The $5.6 million will be spent almost to a dollar in the private sector so there will be no increase essentially in Federal workyears. There will be a very considerable increase in the private workyears which will be used to support this effort.

Mr. BECK. The theory behind our entire budget package was that we were going to request a supplemental that would be tied to our next year's request and the early money that we wanted was contract money because you can convert it into manyears quickly.

So it is mostly in both categories all contract money, some contract supervision, but that is where we needed it.

Mr. TRAXLER. Permanent positions in 1981 for public sector activities tripled to 69. The full-time equivalency more than doubles to 89. What type of people are you looking for? What specific disciplines are involved?

Dr. GAGE. Mr. Traxler, the major new disciplines that we need to bring to bear on this particular problem are in the two following areas: We need engineers, chemical engineers in particular, who have expertise in the high temperature destruction of hydrocarbon materials. Much of the solid wastes that we are dealing with are in the form of mixes of a variety of organic chemical wastes. Since they can be disposed of by incineration, and if we can design the incinerators correctly without any other secondary environmental effects, then this is the area we really need to emphasize.

We will be adding some 15 positions in the area of incineration research. The largest other area will deal with the safe disposal of a variety of hazardous wastes in safe landfills. In those areas, or to deal with that problem, we have found that our major shortfall is in the area of hydrologists and geologists. We basically do not have much of that expertise available anywhere in our laboratories and when you consider how hazardous waste might move out of a landfill and into water aquifers, we frankly do not have expertise at this time to deal with those problems.

We have a number of other specialists in the area of measurement and analysis of these hazardous wastes. However, we are dealing with a much more difficult problem when we talk about hazardous wastes in that we do not have a nice neat media such as air or water in which to disperse the wastes and to give us a uniform sample. We are dealing with literally 55 gallon drums of gunk which in many instances are very hazardous to open up, let alone carry out laboratory analysis.

So we are really training a new cadre of people to characterize the hazardous wastes as we find them and devise a methodology so that companies can do their own analysis of hazardous wastes and

improve that as part of the tracking system that is being developed under other parts of the RCRA. Those are the three major areas.

Mr. TRAXLER. Do you honestly think you can triple the size of this program in one year and maintain some order and productivity?

Dr. GAGE. I think so, very definitely. While it is tripling, it is in fact not a fairly significant change. You have to look at the base in this program. It was pretty small. The fact that we only had 20 people goes back to the point Mr. Beck made earlier. We had not devoted anywhere near enough resources to this area. Sixty-nine individuals in this area would be just one quarter of the size of our Municipal Environmental Research Laboratory, to put that in perspective, a laboratory that is operating very effectively. They are in Cincinnati and will be absorbing something like one-half of the new hires. So we are building on a very solid base of professional management.

Mr. TRAXLER. If you don't get the personnel increase, will you need all the requested extramural funds?

Dr. GAGE. I believe that the increases are really acceptable. The extramural funds for the supplement in fiscal year 1980 are absolutely key in terms of getting these new guidance manuals. We are literally reprogramming people onboard today to manage that contracting process.

What we are going to need in the future are people who can exercise engineering judgment in the evaluation of hazardous landfills and hazardous incineration as well as actually provide guidance to the broader industrial community on measurement and monitoring. We do not have that expertise now.

Mr. COSTLE. We have to start building an expertise or we are going to continue to be behind the eight ball. In handling hazardous wastes, there are a variety of technologies. Landfill is suitable. You have possibilities of chemical fixation so if you put something in a landfill, it won't migrate. Some waste streams should not go into landfills and incineration will probably be the right answer for some of those. In other instances, chemical treatment will be the appropriate way to handle the waste. Hopefully, we will see some recycling where one man's waste becomes increasingly another man's raw materials.

The point is, given the universe of waste, the diversity of waste, we don't know going into this problem which technology is appropriate for which. We are going to be under the gun to be answering those kinds of questions. If we don't start building that expertise, we are cutting our nose off to spite our face.

Dr. GAGE. In a sense we are paying for this increase in personnel in the hazardous waste area out of other R&D areas. Our overall manpower ceiling will be down some 20 permanent positions. So this 46 position increase is being won at the expense of a variety of other research programs. We think this reorientation is the only thing we can do at this time.

HAZARDOUS WASTE SITE RISK ASSESSMENT COORDINATION

Mr. TRAXLER. On page SW-20, $3 million has been requested for risk assessment. Are you going to accomplish this work by contract?

Dr. GAGE. We are programming out of the increased positions for fiscal year 1980 some 4.5 positions, so that a few hundred thousand dollars out of the $3 million will be devoted to salary and expenses. Most of the health assessments will be done with contracts and with grants. We do think that we will have enough new expertise in that area to help guide that work.

Mr. TRAXLER. Are there any other Federal agencies involved in hazardous waste site risk assessment?

Dr. GAGE. There have been cursory involvements by the Center for Disease Control operating out of Atlanta and the National Institute of Environmental Health Sciences out of Research Triangle Park, North Carolina. But, very frankly, they have been in and out of business. They have not continued to provide the continual support that we have been having to provide, literally reprogramming from our activities or our people we have onboard right now to look at the situations at Love Canal and a variety of other hazardous waste sites.

Mr. TRAXLER. In your justifications, I note that EPA activities in this area will be coordinated with other Federal agencies having a more prominent role.

Dr. GAGE. That statement refers to the involvement of the National Institute of Environmental Health Sciences in the area of health assessment at Love Canal.

Mr. TRAXLER. Is Love Canal the only activity they are coordinating with EPA?

Dr. GAGE. As far as I know, that is the only ongoing activity they have. They did get involved in one or two other efforts. There was one instance in the State of Missouri where there was a dioxin spill, is that right, Steve?

Mr. JELLINEK. There was a spill of chlorophenol which included dioxin contaminant.

Dr. GAGE. That was a very short involvement, just a matter of a few weeks. The only ongoing involvement I believe they have at this time is to chair an interagency committee on the Federal response to the Love Canal situation.

Mr. TRAXLER. You probably will not have many coordination efforts with other agencies in this area. It is primarily your responsibility.

Dr. GAGE. It is primarily our efforts in this area.

Mr. COSTLE. The only other areas where there has been attention given to the hazardous waste management really is in the radiation area in the involvement of the Nuclear Regulatory Commission and the Department of Energy in managing nuclear wastes basically.

WASTE MANAGEMENT REGULATIONS

Mr. TRAXLER. Turn to SW-21, waste management regulations, guidelines and policies. This is a very interesting area.

Mr. BECK. Yes.

Mr. TRAXLER. This program also doubles from $11.4 million requested last year to $25 million in 1981. If the pending $6.4 million supplemental is assumed enacted, the 1981 increase is $8,477,000. Excluding the supplemental, the 1980 current estimate shows a marked decrease in salaries and expenses and a similar increase in abatement, control and compliance. How does that happen?

Mr. BECK. Are you making reference to the budget estimates in 1980, the $5 million and the $3 million on the top of the chart?

Mr. TRAXLER. No. We are looking at the totals for salaries and expenses.

Mr. BECK. They are lower on the budget estimate?

Mr. TRAXLER. Yes.

Mr. ELSTON. There is somewhat of a pattern throughout the budget and in some places there was no estimate at all for the contract side and all the money was carried in salary and expenses. This is part of the conversion to the new appropriation structure that we went through last year. I think we are just cleaning it up this year. You see the totals not changing, but we are getting right mix between salaries and expenses.

Mr. BECK. If you were not to look at the 1980 budget estimate column but just look at the 1980 current estimate and the estimate for 1981, then the distribution between salaries and expenses and abatement, control and compliance shows a much more sensible relationship. Apparently last year we had not accounted for the split appropriately. That problem does repeat itself in this budget at several different points, but the main area in this subactivity was regulations, guidelines and policies hazardous wastes which carried down to the subactivity total.

LEAD-BEARING WASTEWATER TREATMENT

Mr. TRAXLER. While we are on that, I want to return to the matter that we discussed earlier in the course of the hearings under section 3001 and that is the listing of 3321 lead-bearing wastewater treatment sludges from gray iron foundries as toxic and therefore hazardous wastes. I think in the course of our conversation two days ago we established that you had not used an extraction procedure to test the wastes before deciding to list it as hazardous. Is that a fair statement?

Mr. BECK. I don't think I said on the record whether in fact this waste was tested through an extraction procedure to determine whether it was hazardous. The proposed regulations had set up an extraction procedure that would be one of the determinants for whether something was hazardous.

The extraction procedure was not applied to all the wastes that we listed. One of the things that we are re-reviewing in every one of the wastes is whether in fact we need to do extraction procedures on every waste before we list it or alternatively do we know through other factors that it would be hazardous.

For instance, does it have the type of chemicals that might potentially leach or are the chemicals so bound up that they won't? To be more direct, I don't think I said on the record whether the extraction procedures were applied to this waste or not. That is one of the factors in a lot of cases that was a determinant for listing.

That is one of the substantive policy decisions that we are considering right now on finalizing regulations.

CRITERIA FOR DETERMINING HAZARDOUS WASTES

Mr. TRAXLER. But you do have proposed criteria to be followed in determining whether or not a waste is hazardous.

Mr. BECK. In the regulations there are two ways that a waste can be determined as hazardous. One is that we specifically list it and the second is whether it fails the characteristics of waste, whether it is corrosive, toxic, reactive or explosive. We set out criteria under which certain wastes might self-list. The criteria was those four characteristics. Criteria were not the way this waste got listed. This waste was specifically picked out, and we proposed it to be listed as hazardous.

Mr. TRAXLER. Based on what scientific evidence was it determined to be hazardous? You are talking about listing as toxic more than 200,000 tons of waste. That is a lot of waste to be disposed of in a very expensive method and in very few sites around the country.

Mr. BECK. Mr. Traxler, as I indicated on the record the other day, one of the primary things that the Agency did when it proposed this regulation was make some judgments about potential leaching of lead here. The waste was proposed for listing of November 26, 1979, with a 60 day comment period following. The Agency sent the Cast Metals Federation and the American Foundrymen's Society background data in December related to work done by our effluent guidelines program on this proposed listing.

We have not made a determination at this point whether we will finalize this waste and in what amounts on the 3001 list. That has yet to be done. We have to review the record.

HAZARDOUS WASTE GUIDELINES EXTRACTION PROCEDURE

Mr. TRAXLER. Provide for the record what your response is to a letter to the Agency directed to John Lehman, dated January 24, 1979. It is from Professor R. K. Hamm who is a professor at the University of Wisconsin. He had a contract for approximately $200,000 to do work in the area of extraction procedures. If you will provide for the record a response to his letter. I would like to insert at this point in the record, if there is no objection, the professor's letter. It runs some two pages.

[The information follows:]

0035 WI. 1000 AA

UNIVERSITY OF WISCONSIN—MADISON

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

3206 Engineering Building
1415 Johnson Drive
Madison, Wisconsin 53706
Telephone: 608/262-1776

January 24, 1979

RECEIVED
FEB 01 1979

Mr. John P. Lehman, Director
Hazardous Waste Mgt. Division
Office of Solid Wastes (WH-565)USEPA
401 M Street S.W.
Washington, D.C. 20460

Subject: Hazardous Waste Guidelines Extraction Procedure, p.58956 Fed.Reg.12/18/78

Dear Mr. Lehman:

This letter is prompted by the recent publication in the Federal Register of the proposed hazardous waste regulations and criteria and, also, because of concern that I have experienced as project director for a major project from EPA dealing with the development of a standardized leaching test for industrial wastes. I am sure you are aware of this project, which has now been completed. Three final reports have been submitted to EPA through the project officers. These reports deal with the development of a leaching test and the comparative testing of the developed leaching test plus tests developed by the State of Minnesota and one developed by IUCS and proposed by ASTM. The project officers for this work were Don Sanning of EPA, Cincinnati, and Mike Gruenfeld of EPA, Edison, New Jersey, with Alan Corson and Don Viviani as primary contacts within your office in Washington.

The work we did constituted approximately $200,000 worth of effort and, when one considers that much of this work was done by students and at a relatively low rate of funding, the number of man years and the expertise involved is of such magnitude that the project is even more significant than its dollar figure would suggest.

Our work in developing a test was approximately half completed when people within EPA took handwritten versions of our test, made comments and decisions on it, and decided to go with a very different test which is, in my opinion, completely unfounded. At the time I did not object, even though I was getting numerous feedback comments from concerned professionals in the field as to what was happening. I felt that our job at the University of Wisconsin was to do the best job we could, technically, and not to worry about the results.

We did complete our work, changing the proposed test periodically in order to accommodate a wide variety of wastes and to make our tests as useful as possible. The conceptual basis of our test and initial evaluations of it were done in close cooperation with a steering committee set up to monitor our project because of its critical importance to EPA. All comments and interactions with this committee were positive, helpful, and aided us in putting together our test. As Project Director, I was particularly pleased with the spirit of cooperation which developed between project personnel and EPA through this committee. Unfortunately, about the time our test was finalized and its use on a variety of wastes begun, the spirit of cooperation dissipated to the point the only evidence we received about EPA's use and interpretation of our test was through ASTM, consultants, and industrial sources outside of EPA. The only direct negative comment regarding our test from EPA arose from a misunderstanding of the test which zeroed in on the use of a

synthetic leachate which we were to develop as part of our contract with EPA. Misinformed people assumed that our test incorporated use of this leachate as leaching medium exclusively, which is not the case. We emphasize use of distilled water as the standard media, to be supplemented by acidic media, the synthetic leachate, or other media as appropriate on a case-by-case basis.

We utilized our test on a variety of different industrial wastes ranging from liquids to solids, each of which would leach different kinds of materials. The test performed satisfactorily and was feasible to use on all of the wastes that we tested. In my opinion and in the opinion of others who worked on our project, the test represents the most defensible leaching test we can think of which would allow a laboratory procedure to relate strongly to what could happen in an actual landfill situation. In spite of initial confrontations with ASTM and some of the industrial people involved with the ASTM committee, our test has received general recognition as being a good test and the only difference between it and the test that ASTM has most recently proposed is really a matter of details and not of actual concept. The ASTM people with whom I have talked over the last year, once they understand properly what our test really is, have been happy with it. The only exceptions relate to some of the details of the test which some people would like to change to make it more suitable for their particular wastes.

I have been very concerned that the test EPA is now proposing has little basis in fact, will be difficult to interpret, and will be very difficult to relate to what might happen in a landfill situation. In my opinion, and the opinion of our project investigators, the EPA test is going to create difficulties because it will classify as hazardous many wastes which are not really of concern. This will cause unnecessary problems, greatly increasing costs to industries producing such waste and making it difficult for regulators to interpret test results and to act appropriately. The test is very aggressive. I am sure that many soils of the U.S. would not pass that test adequately without being classed as hazardous. In my rather interesting role of not working for EPA, a regulator, nor for industry, I get many comments from all different sides of the question. I am sure that the EPA test will be meeting many obstacles; if not at the hearing level, certainly, in the courts if it were to be adopted.

As an add on portion of our project, we were asked by EPA to compare our test with the Minnesota test which is very similar to the one being proposed at this time by EPA. The final report on this comparison is available. It was sent to Mr. Gruenfeld with copies to the above mentioned people within the Washington EPA office. This comparison indicated that the Minnesota test (which is also an acid leach test) had some undesirable features which resulted in unusual results. These results did not correlate well with the results of either our test or the ASTM test, which are much more defensible when related to actual landfill situations. Our project concluded by saying, based solely on data developed within the project, that the Minnesota test was the worst by far of the three tests that were evaluated. By implication, this would also apply to the test EPA is now proposing.

In summary, I am very concerned about the test EPA is proposing and the way EPA unilaterally developed it. This will ultimately serve to assure waste of tax dollars (our $200,000 at a minimum) and inaction in a much needed area because of the poor test that has been selected by EPA without proper input from professionals

in the field, including myself. Apparently, people have already aligned themselves for a confrontation, with EPA on one side and industry and myself (as an investigator specifically sought and hired on a major EPA funded project to develop such a test) on the other side. It is an unfortunate situation which can only result in wasted time, effort, and resources.

I could go on and offer specific technical problems regarding the EPA test, but this has been done in detail in our project reports which were referred to previously. If additional documentation or interpretation would be useful, I will do what I can. Please do not think that I support our test solely because it is ours. Pride in our work has nothing to do with it. The simple fact is that this test represents the effort of the best professionals we could assemble or contact with the specific objective of developing the best, most defensible leaching test possible for routine use on "all" industrial solid and semi-solid wastes. Judging from our experience and results the proposed EPA test completely misses this objective.

I will not be able to appear at the hearing because of limited travel funds, but I did want this letter to be presented as evidence at the hearing, and I wanted you to be aware of our situation and of my concerns.

Sincerely yours,

R.K. Ham, Professor
Civil & Environmental Engineering

RKH:mk
cc: Prof. Anderson
Mr. Gruenfeld, Mr. Corson, Mr. Sanning, EPA

PUBLIC COMMENTS

The comment submitted to EPA by Professor R. K. Hamm, University of Wisconsin Department of Civil and Environmental Engineering, has been considered, along with more than 1,200 other public comments on EPA's December 18, 1978 regulatory proposals for RCRA § 3001, 3002 and 3004, in developing and revising the final regulations.

At the time the RCRA § 3001 regulations for defining and listing hazardous wastes is promulgated in April 1980, the preamble to the regulation will discuss in detail EPA's reasons for selection or rejection of alternatives proposed in the public comments. Ex parte restrictions do not allow EPA to discuss the merits of Professor Hamm's suggestions until the final regulation is promulgated.

CRITERIA FOR DETERMINING HAZARDOUS WASTES

Mr. BECK. Mr. Traxler, we will do that, but we have one slight problem in discussing any more of the details of this and that is that these were proposed regulations. People have commented to us about these proposals. We will be finalizing them in April. When we respond for the record, we will also have to put in the record how much we can speak to because this is an issue that has presently been proposed but not finalized. It is in that difficult *ex parte* situation that we were talking about before. I don't know what the ground rules are. I don't want to appear nonresponsive, but I am having trouble in terms of how much I can say.

Mr. TRAXLER. Okay. You look at his letter and then respond. If we don't like what you say, we will ask you for more information.

I guess what I am worried about here is that you have proposed criteria in this area dealing with an extraction procedure to be used for determining whether or not a waste is indeed toxic, hazardous. I hear you saying you did not do this for these foundry sludges, you did not follow this particular criteria. Because it is lead-bearing, you are immediately suspicious. Therefore, you listed it.

I recognize it is a tentative listing. But it seems to me that if there is a scientific way by which you can either validate or invalidate your tentative listing and in view of the immense tonnage you are talking about, I would hope that somebody over there says, for God sakes, we better take a damn careful look at what we are doing.

Mr. COSTLE. That is absolutely fair.

Mr. TRAXLER. I can't imagine listing 233,000 tons without verifying whether the waste is truly hazardous.

Mr. BECK. That is the central issue that we are evaluating on relisting wastes.

Mr. COSTLE. Incidentally, as we have been going back through the 222 wastes or chemicals that we listed, I have asked both Steve Jellinek's shop and Steve Gage's shop independently to review and, in many cases, actually prepare the development documents for that final list, in addition to those that are being done by the hazardous waste program itself.

I have set up a steering committee under our chief scientific advisors to be sure there is a multiple review within the Agency of the final list of wastes. We still think there will be some chemicals that we originally listed that we will not be satisifed with development documents on, but we will come close enough to make a pretty firm decision and back it up on paper as to whether it ought

to be on or off. It is being reviewed within the Agency, not by one guy sitting at a desk but by a panel of people.

Mr. TRAXLER. I appreciate that.

Mr. COSTLE. We are making changes.

Mr. TRAXLER. You are not under any requirement to list a specific waste either by the court or the Act. You do have an opportunity to list any waste at a future date that you determine to be in fact hazardous. There are, I think, some fairly objective tests that can be applied in this situation.

Just keep in mind the immensity of the wastes that we are talking about and the particular hardships listing it is going to work clear across the industry unnecessarily if your initial determination is incorrect. Industry says it is, and they feel very comfortable in that. They say if you go through the process, and use the proper tests, then you will feel comfortable, too, in not listing this waste. The problem is that nobody thus far has gone beyond the first 16th of an inch of the issue in terms of validating some preliminary judgments that were made simply because this waste contains lead.

Mr. BECK. Mr. Traxler, we understand that issue. As Doug has said, and I said, it is central to our re-evaluation.

There is another side to it, though, that I have to emphasize. Aside from people feeling that they are tarred by a brush that says it is a hazardous waste, which causes some political problems. I think the central issue in terms of determining what we do is really the standards that we impose for care. If in fact the Agency is sensible or reasonable in its standards for care, then a lot of the concerns go away.

Mr. TRAXLER. Yes. You have other options available to you besides the toxic listing.

Mr. BECK. Unfortunately, you don't get the management system knowing where all the wastes are going and a program to regulate the disposal unless you list something as a waste or it meets the hazardous waste criteria under Section 3001. That is one of the dilemmas, that you have to list to get jurisdiction under the whole program.

Mr. TRAXLER. Well, you remember that under your regulations the industry has to test every deposit in a sanitary landfill, whether it is hazardous or not.

Mr. BECK. No, not unless we list it as a hazardous waste or it meets the criteria under 3001. That is the way we get the jurisdiction. It has to be listed or meet the criteria under 3001 for it to be under Subtitle C. A waste has to be listed under 3001 to first notify us that it is being generated, transported, and disposed of, which is an important information base. In order for us to regulate the disposal of it, by a standard under 3004 it needs to be listed.

I see a political problem. We probably should not have called some of these things hazardous because it fits into an emotional climate today that is hard for people to deal with. The real central issue is more at the point of what reasonable standards of care do we impose. There are certainly some things that people ought to do who are handling gray iron lead phenolic wastes. They maybe should fence it up so kids can't go in to eat it.

Mr. TRAXLER. You are down to lead-bearing waste water treatment sludges from gray iron foundries. You got rid of phenolic.

Mr. BECK. I am not saying this to be argumentative about us needing to re-examine, but I think it is illustrative of what I think the whole budget presents for us.

You will see later on when we talk about increased resources for the regions, that the need is to get in and make engineering judgments about how sensibly things ought to be disposed of. To the extent that the Agency is reasonable about its standards, it will ameliorate a lot of problems of listing.

Mr. TRAXLER. Even by listing you do an immense harm to this waste. It spreads out across the States. Let your own regulations, promulgated on February 26, 1980, require all generators of solid waste to make hazardous waste determinations specifically if the waste is not listed. I'm referring to 40 CFR 262.11(c). This requirement will ensure that a particular foundry sludge with any hazardous characteristics will be regulated by EPA, even if the waste is not listed. Any generator who fails to analyze its waste, and, if found hazardous, fails to notify EPA under Section 3010 requirements would be subject to penalties.

But you have chosen to list it as toxic and indeed the industry claims it is not toxic. Using the best extraction procedures that have been developed, the industry says this sludge does not show up as toxic.

Mr. BECK. If this waste were put directly in a water supply right over where somebody is drawing down water, or in fact in a recharge area where water is going into ground water next to where the public is exposed in that situation you could potentially have a significant hazard. You could potentially injure people.

Mr. TRAXLER. I will send you a letter on that point. I think it is an interesting one. I would not want to tell you that a waste which is otherwise nonhazardous taken under a set of circumstances, the worst set of circumstances, could not be hazardous. But you know that is a very dangerous path to follow because you are going to end up listing under "worst-script" circumstances every compound in our society.

Mr. BECK. That is why it is so central to us to make some decisions in terms of what quantities and volumes of waste we are talking about.

Mr. TRAXLER. At some point don't you have to put into the equation cost effectiveness versus the possible worst script scenario?

Mr. BECK. That is why Mr. Traxler, the real issue is the standards that you impose for disposal. It is not listing and having to fill out the form and sending it to a designated site. It is the standards that that designated site must meet.

If we were to say this waste should not be disposed of directly over a recharge area, that may be a reasonable standard of care. That is why 3004, to me, is the more central issue other than the political problem of being listed. It is the most misunderstood part of the Resource Conservation Recovery Act right now.

Mr. TRAXLER. Mr. Coughlin?

Mr. COUGHLIN. Mr. Chairman, I realize that this is an enormously complicated field having, as we discussed yesterday, firsthand experience in my own area with hazardous wastes, both in terms of the TCE question and in terms of one site that was identified on the list that your Agency issued of hazardous wastes which, as it later turned out, had been reasonably well handled.

I guess there are really no easy answers. I just would like to pursue one line of questioning very briefly. That really doesn't go to the hazardous waste questions as much as it does to the Recovery Act portion of the legislation that you are discussing, and to the question of mandating the use of certain products.

As opposed to saying you cannot use things that are hazardous, this is now saying that you will use things for recovery purposes. I refer specifically as an example to your question of using fly ash in concrete. I wonder about the validity of mandating something that is not a question of excluding something because it is dangerous but requiring something to be included on the basis of an EPA estimation that this could make concrete less expensive or could make used resources otherwise unused.

What is your feeling about doing that kind of thing?

Mr. COSTLE. I am not aware that we have done anything like that. Are you saying that we have?

Mr. COUGHLIN. As I understand it, your proposed regulations are involved.

Mr. PLEHN. We were assigned by the Congress under Section 6002 of the Act, responsibility to develop procurement guidelines for Federal agencies to specify products which they buy, which can be derived from waste materials, and your specific example of the use of fly ash in concrete is one of the procurement guidelines we are working on.

We have others in the areas of using sludge as a soil conditioner by Federal agencies. We have another one in the paper area that is under development. We have about six that are in the pipeline right now. Unfortunately, we have been so hard-pressed in the hazardous waste area that we have been forced to move this onto the back burner to some degree, but there is an effort underway moving directly in that direction.

Mr. COUGHLIN. But this would be an effort to mandate that all concrete used in Federally funded projects——

Mr. PLEHN. It would not be a mandate, but it would put a burden on the government procurement agency to, at a minimum, take a very close look at that, and to take that course unless there were very persuasive reasons that we should not go in that direction.

Mr. COSTLE. This is under what?

Mr. PLEHN. Section 6002 of the Resource Conversation Recovery Act.

Mr. COUGHLIN. I see a real governmental Pandora's box in this.

Mr. PLEHN. I ought to add to that the normal procurement tests of sufficient sources of supply, cost and those other considerations would not be overruled by this criteria. They would also have their proper place, but the Congressional intent here was to see if there were areas consistent with those normal criteria where incentives

could be applied in the form of government procurement, to encourage approaches which made use of waste products as raw materials.

Mr. COSTLE. The analogy obviously being recycled paper, which the government is probably the single largest purchaser of or at least was a few years ago.

Mr. COUGHLIN. I would guess, though, that nothing mandates that all paper used by the government has to be recycled?

Mr. COSTLE. No. As I understand what Steff is saying, a similar approach would be used in these other areas.

Mr. PLEHN. That is right.

Mr. BECK. I think, one, those procurement guidelines were in very early stages of development within the organization, and so I don't think anything is fixed there. I think the second thing is it is more for the purpose of us identifying certain opportunity where you can help get markets that may be more cost-effective to get rid of these materials.

I don't think anything we are envisioning would say that fly ash has to go into cement, and all generators of fly ash need to do that. There is nothing to regulating and disposing of fly ash in that regard. It is more to identify some markets for disposal. The purpose is to have the Federal government take some leadership there if we see some opportunities that are cost-effective.

I think a better example may be in the area of sludge, where there might be clean sludge if it were land applied, which would have salubrious qualities. It might be good, and if the Federal government has a lot of land and can see opportunities for potentially disposing of sludge as a soil nutrient, then maybe it ought to encourage that. That is all we are trying to do in this area. It is just showing some marketing opportunities for things as opposed to being a regulatory type:

Mr. COUGHLIN. I guess this obviously is really far on the back, burner, as evidenced by the testimony now. I guess my only caution would be that I suspect if products are economically feasible, that the private sector will probably develop them, and use them as long as we keep opportunity free and open.

Mr. COSTLE. One of the tests for feasibility is, do you have a market?

Mr. COUGHLIN. That is correct.

Mr. PLEHN. Or your fly-ash point, I think that is illustrative of some of the dynamics here. As I understand it, fly ash improves strength of the concrete in which it is used. The other side of it, it takes a little longer to cure, so that it has not been normal construction practice to make use of fly ash, although it is being used in various places around the country.

You get to a point where, if it is a sensible thing to do, both in terms of the construction material and the waste disposal, but the system out there just hasn't been used to doing it, a little bit of push in terms of Federal procurement can have the effect of getting people to think about the problem again and saying, gee, maybe this is really a sensible way to go generally.

I think that is the concept that is in the statutory legislation as we have been directed by the Congress.

Mr. COUGHLIN. Thank you, Mr. Chairman.

Mr. TRAXLER. Mr. Sabo, did you have something at this point?
Mr. SABO. No.

REPROGRAMMING FROM WASTE MANAGEMENT REGULATIONS GUIDELINES AND POLICIES

Mr. TRAXLER. Let's return to waste management regulations, guidelines and policies. Page SW-25 indicates that $1,312,000 was reprogrammed from waste management regulations, guidelines and policies in 1980. At the same time, you have requested a $6.4 million supplemental. We are not sure how an activity that has such a dire need for additional funds to request a supplemental can find $1.3 million to give to other activities. Can you elaborate on that?

Mr. BECK. The primary reason why that happened was that we reprogrammed out of that account into two other accounts, which were very directly related to it. One is that we reprogrammed roughly $400,000 into Solid Waste Technical Assistance for the technical assistance panels to meet the 20 percent technical assistance requirement. The present structure of the authorizing legislation says that 20 percent of the money needs to go into technical assistance, and so in order to meet that 20 percent technical assistance requirement we needed to reprogram some money into technical assistance areas, but in those technical assistance areas that we reprogrammed it into we have confidence in the fact that it is supportive of the program.

In that program we are providing peer group assistance out to municipalities with regard to a variety of potential waste disposal problems.

We also reprogrammed $400,000 into Solid Waste Technical Assistance for hazardous waste management and siting issues in the Alert Program, our public education program on RCRA implementation. This has been one of our more successful programs.

There was also reprogramming of about $370,000 to cover the salary shortfall within OWWM that occurred in several of our other accounts heretofore and a reprogramming of $133,000 to cover salary shortfalls elsewhere in the Agency.

Mr. TRAXLER. Why shouldn't the Committee reduce the supplemental request at least by the amount of the reprogramming figure?

Mr. BECK. Because, as we have said, the areas that we reprogrammed it into, waste alert and the technical assistance panels, we felt strongly about. The second thing is that we are living under a constraint in the authorizing legislation that basically says that 20 percent of the money needs to go into technical assistance categories.

Mr. TRAXLER. According to the justifications on page SW-25, you reprogrammed $183,900 to management and support for the projected costs based on 1979 expenditures.

Mr. BECK. Yes, but that was to cover salaries. My understanding is that $183,900 was to cover salary shortfalls for the Deputy Assistant Administrator's staff and other OWWM program staff support. We can give you specifics on each of the breakdowns in that

account if that would be helpful, but I think I have fairly characterized them.

Mr. TRAXLER. That would be helpful.

[The information follows:]

SOLID WASTE REPROGRAMMINGS

The reprogrammings from the 1980 President's Budget to the 1980 Current Estimate from regulations, guidelines, and policies/hazardous wastes were as follows:

Reprogramming of 20 percent of 1980 budget amendment of $2 million to solid waste technical assistance delivery/headquarters	−$400,000
Reprogramming to solid waste technical information development for Waste Alert public education program related to hazardous waste management and siting	−400,000
Reprogramming to solid waste technical information development to cover salary shortfall	−183,900
Reprogramming to Program Management/Office of Water and Waste Management to cover salary shortfall	−213,000
Reprogramming to Regulations, guidelines, and policies/solid waste for the open dump inventory support contract	−47,700
Reprogramming of portion of 1980 budget amendment resources back to uncontrolled hazardous waste sites	−67,400
Share of Congressional reduction to travel costs	−17,900
Share of Congressional reduction to ADP costs	−12,700
Prorated share of Agency-wide reprogramming to cover salary shortfalls in other Agency programs (especially regional offices and office of Planning and Management)	−133,500
This program element's share of proposed pay raise supplemental	+102,600
Total change from President budget estimate	−1,373,500
Proposed 1980 supplemental	+6,400,000
Total 1980 change	+5,026,500

PCB REPROGRAMMING

Mr. TRAXLER. Are you sure that that $133,000 wasn't allocated for salaries?

Mr. BECK. That was $133,000 for personnel compensation and benefits accounts, that is correct. The $183,900 went to program management costs, primarily salaries, in my office, which was for the Deputy Assistant Administrator and his staff, who supervise the overall program. The $133,000 covered salary shortfalls elsewhere in the Agency and was part of the reprogramming across the Agency.

Mr. TRAXLER. What is the full year cost in 1981 of the supplemental?

Mr. BECK. The 1981 full year cost of the supplement is $11 million and 19 workyears for the contamination of the industrial waste evaluations, which does not include the activities in the research and development area.

Mr. TRAXLER. Provide for the record what the workyears and full-time equivalency are assumed in the supplemental.

Mr. BECK. You are saying the supplemental in 1980?

Mr. TRAXLER. Yes, 1980.

Mr. BECK. The $12 million that we have requested for the supplemental under both Research and Abatement and Control is contract money. There has been some slight reprogramming, and there will need to be some reprogramming in each of our accounts to manage that contract money, and Dr. Gage indicated that he

had about 3 manyears that he was doing to manage his $5.6 million, so there is some very slight reprogramming that occurs there, but it is for the purpose of contract management.

Mr. TRAXLER. Turn to the financial assistance programs on page SW-32. For the record, provide distribution of funds, by State, and by city for local resource recovery, for 1979, 1980, and 1981.

Mr. BECK. We shall do that.

[The information follows:]

Resource Recovery Grants

Following is a list of awards made to Urban Policy grantees in FY 79 and anticipated in FY 80 - 82. (The FY 82 awards are FY 81 carryover funds.) The figures shown are estimates. Actual awards may vary depending on the progress of the projects and individual grantee needs.

Grantee	Projected Obligations ($000) FY 79	FY 80	FY 81	FY 82
Alabama				
Jefferson County	80.1	190.0	235.0	--
California				
Los Angeles	117.8	250.0	325.0	--
San Francisco	--	240.0	325.0	--
Berkeley	225.0	325.0	--	--
Los Angeles County	75.0	--	--	--
Long Beach	233.5	325.0	--	--
Colorado				
Eagle County	36.0	130.0	160.0	--
Connecticut				
Con. Res. Rec. Authority	375.0	325.0	--	--
New Britain	77.0	--	--	--
District of Columbia				
Washington	102.6	--	250.0	325.0
Florida				
Hillsborough County	135.0	--	451.8	--
Escambia County	121.9	235.0	--	--
Daytona Beach	61.5	190.0	235.0	--
Broward County	54.8	190.0	235.0	--
Georgia				
Floyd County	67.9	190.0	235.0	--
LaGrange	51.9	130.0	160.0	--
Savannah	49.3	190.0	235.0	--
Hawaii				
Kauai	80.0	130.0	160.0	--
Illinois				
Chicago	123.9	250.0	325.0	--
Rockford	49.2	--	--	--
Indiana				
Indianapolis	105.3	250.0	325.0	--
Iowa				
Black Hawk County	82.5	130.0	160.0	--

Grantee	Projected Obligations ($000) FY79	FY 80	FY 81	FY 82
Kentucky				
Bell County	57.8	130.0	160.0	--
Louisiana				
New Orleans	127.5	250.0	325.0	--
Maryland				
Baltimore County	185.1	90.0	235.0	--
Howard County	40.2	--	--	--
Massachusetts				
Pioneer Valley	188.0	--	--	--
Central Mass.	213.0	--	--	--
Michigan				
Flint	132.1	250.0	325.0	--
W. Michigan Shore	130.0	250.0	325.0	--
Detroit	277.5	--	--	--
Minnesota				
St. Paul	74.2	235.0	235.0	--
Mississippi				
Hattiesburg	53.1	190.0	235.0	--
Missouri				
Bi-State (St. Louis)	86.1	250.0	325.0	--
Kansas City	87.1	250.0	325.0	--
New Hampshire				
Fairmont	99.9	235.0	--	--
New Jersey				
Port Authority (NY/NJ)	162.8	550.0	600.0	--
Mercer County	--	244.9	235.0	--
Camden County	70.9	190.0	235.0	--
Newark	--	50.0	--	--
Hackensack Meadowlands	--	70.5	190.0	235.0
New York				
New York City	213.8	250.0	325.0	--
Utica	115.0	190.0	235.0	--
Brookhaven	--	56.2	130.0	160.0
Westchester County	--	60.0	--	--
Monroe County	--	80.0	--	--
Port Authority (NY/NJ)		(See New Jersey)		

Grantee	Projected Obligations ($000) FY 79	FY 80	FY 80	FY 82
North Carolina				
Region M COG	86.1	190.0	235.0	--
Ohio				
Cuyahoga County	248.8	325.0	--	--
Toledo	116.6	--	325.0	--
Montgomery County	117.6	250.0	325.0	--
Oregon				
Portland	184.1	325.0	--	--
Pennsylvania				
Philadelphia	--	230.0	325.0	--
Rhode Island				
State of Rhode Island	325.9	325.0	--	--
Texas				
Waco	--	84.3	235.0	--
Tarrant County	102.0	250.0	325.0	--
Utah				
Wasatch (Salt Lake)	87.0	250.0	325.0	--
Vermont				
Rutland	33.0	130.0	160.0	
Virginia				
Southeastern Va.	--	151.3	325.0	--
Washington				
King County	225.0	--	250.0	325.0
West Virginia				
State of W. Virginia	--	102.0	250.0	325.0
Wisconsin				
State of Wisconsin	140.0	--	130.0	--
Puerto Rico				
San Juan	--	49.6	--	--
Virgin Islands				
Virgin Islands	--	208.9	--	--
TOTALS	6285.4	10412.7	11466.8	1370.0

LOCAL RESOURCE RECOVERY FINANCIAL ASSISTANCE

Mr. TRAXLER. Local resource recovery is addressed on page SW-35. An additional $10 million is requested in 1981. Are there any new grants proposed in 1981?

Mr. BECK. We at this time have 63 grants in the program. When we initiated the program we saw those as 3-year grants, and we are assuming that in 1981 we will not have new grants, although there are many applicants. We will just be finishing off the final phases of current grants.

Mr. TRAXLER. If the Congress appropriates the $10 million in 1981, it will bring the program total to $35 million in 3 years. With 163 projects that equates to $555,000 apiece. For not too much more we could have built these projects instead of planned them. I am exaggerating, of course, but it does appear this is getting to be a very expensive planning program. What does a plant cost?

Mr. BECK. The resource recovery plant that was built in Bridgeport, Connecticut, which I have some familiarity with, has got capital costs right now of about $59 million.

Mr. TRAXLER. How many people will that serve?

Mr. COSTLE. That will handle 1,200 tons a day, and it is in a roughly 5-town region.

Mr. BECK. Probably about 180,000 people to 190,000. Bridgeport is about 110,000.

OPERATING RESOURCE RECOVERY PROJECTS

Mr. TRAXLER. How many municipalities currently have operating resource recovery projects?

Mr. BECK. I can answer that for the record. There is a number.

[The information follows:]

RESOURCE RECOVERY FACILITIES SURVEY

EPA's latest survey of resource recovery facilities in the United States November, 1979 shows that there are 29 operating plants having a design capacity of 15,200 tons per day. In addition, there are 14 plants currently under construction and 22 projects in advanced stages of planning.The survey also identifies 218 separate collection programs for recovery of materials, as of May 1978.

FEASIBILITY STUDY DEVELOPMENT

Mr. TRAXLER. Also, how many cities have developed feasibility studies without assistance from this particular program?

[The information follows:]

COMMUNITY RESOURCE RECOVERY FEASIBILITY STUDIES

It is difficult to estimate the number of cities that have done feasibility studies for resource recovery without Urban Policy grant funding. Nevertheless, it is unlikely that there have been more than 150 communities including the 65 currently in stages of operation, construction, or advanced planning to have performed comprehensive feasibility studies over the last 10 years. These studies are often costly up to $1 million and difficult for cities to fund out of already constrained operating budgets. A good indication of current interest is that over 200 communities claimed a need and applied for the President's Urban Policy Program for Resource Recovery. EPA was able to assist 63 of those communities from the available funds. Some of the communities that were not selected have gone ahead with studies, but many more have delayed resource recovery until some future time.

LOCAL RESOURCE RECOVERY FINANCIAL ASSISTANCE

Mr. TRAXLER. What is the current unobligated balance in the program? How much is from funds appropriated in 1979?

Mr. BECK. The current unobligated balance we are forecasting for the end of this year is about $5.5 million. We carried over to 1980, $8.2 million. We staged these grants, and we are watching the output of every one of these grants at each of the grant years, to make sure that it meets its milestones. In 1982 we expect a very slight carryover of about $1.5 million, and that is just to finish off the timeframe in which these projects are completed.

Mr. COSTLE. Is there a particular concern that you are trying to get at on this?

Mr. TRAXLER. I guess what we are interested in is to see what the balance is between the communities that have received Federal monies for planning versus those communities which have done their own planning. Then we are interested in seeing bottom line, what are the results of the planning, and we want to track that through over a period of several years.

Mr. BECK. This program has been an extremely successful program. I just hasten to add that if these projects all convert to resource recovery, it will have covered ten percent of all the wastes that are generated with 63 projects, and so in terms of just getting an important influence of money, we have picked an important set of projects.

Mr. COSTLE. It is really interesting. I was told at one point that in Denmark 60 percent of the municipal waste is converted to energy, in Switzerland it is 40 percent, and in Germany it is 35 percent. In this country it is less than one percent.

Mr. BECK. But these 63 projects, if they are successful, could get that to about ten percent, so they were a very well selected and targeted area, and it may change the whole outlook towards how we can function.

Mr. DRAYTON. Also the Europeans and Japanese recycle roughly twice the proportion of metals and paper that we do.

WASTE MANAGEMENT STRATEGIES IMPLEMENTATION

Mr. TRAXLER. Turn to page SW-37, waste management strategies implementation. The program is tripling from $3,740,000 in the current 1980 estimate to $13,163,000 in 1981. Positions are more than doubling, from 122 to 262. What part of the increase will provide for regional implementation of hazardous waste management systems in unauthorized states?

Mr. BECK. In fact, the entire function of this increase is to run the program in states that do not accept interim authorization. We built these numbers assuming that 37 states or territories are going to accept authorization for the program. If for some reason our forecast falls off, then we are going to have to add resources to this program, and the Act provides for us to use some of the grant money under financial assistance for regional activities to do it.

There is one other point I would make that ties back to something that you were concerned about earlier. That is, how are we staging the growth in these programs so that we can absorb the manpower. You will notice that there is a substantial increase in

money in the regional account here. The primary reason for that increase in money is to be able to use contractors that can assist the permanent writers. We actually need more people out there to run the programs in the 17 states. We have roughly 1700 permits that EPA needs to deal with and we have tried to balance the resources between Federal workyears and contract services, so that the level we are requesting reflects prudent management and we could absorb that level of growth. That is one of the reasons why the financial increases are so large here. It was intended to anticipate that program.

Mr. TRAXLER. Define "unauthorized" state and provide a list of such states for the record. Or provide it now if you like.

Mr. BECK. The way the law reads, it says that for a state to accept interim and full authorization, it has to be substantially equivalent and run the program in lieu of the Federal government. It is simply, almost identical to the regulation of the programs that we are administering here.

We will not know how many states will attain authorization, either interim or permanent authorization, until October. We won't go interim until October, because we cannot make those decisions until six months after we come out with a list of chemicals, which is in April.

Mr. TRAXLER. So really at this point in time, all states and territories are unauthorized?

Mr. BECK. Are unauthorized to run the RCRA Subtitle C program.

Mr. TRAXLER. Then you won't have a listing until this fall?

Mr. BECK. The 37 is based on a projection of what we think we are going to get, but it will become more precise over the summer and fall.

Mr. COSTLE. What we can do is give you our best judgment right now which states, according to all the conversations we have had with them, are likely to be in.

Mr. TRAXLER. Please, and provide for the record by region a breakdown of the 140 new positions requested in 1981.

Mr. BECK. Sure.

Mr. TRAXLER. Also, what workyears and full-time equivalency are devoted to managing the local resource recovery program in 1980 and 1981?

Mr. BECK. As you can see, the manpower in full-time equivalency in 1980, is 45, and in 1981, 38 for the subactivity which includes the management of the resource recovery program. That shows a decrease of roughly seven people, because we are reprogramming those people into Subtitle C. We are throttling down that program as much as we possibly can, running it at a bare minimum because of our needs for growth in the Subtitle C area.

Mr. TRAXLER. Are these figures you just gave us, for the local resource recovery program?

Mr. BECK. No. That is the account that it is in. I will have to break out the number of people in that category.

Mr. TRAXLER. Do that, please.

[The information follows:]

HAZARDOUS WASTE PROGRAM

Based on conversations with the States, we can classify States as follows:

Category I—States that meet all requirements for interim authorization: New Jersey, Louisiana, Minnesota, Kansas, California, Texas.

Category II—States that have legislative authority to meet all requirements of interim authorization but need to develop additional regulations by the effective date of interim authorization: Maryland, District of Columbia, Alabama, Georgia, Kentucky, Mississippi, North Carolina, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New York, Puerto Rico, South Carolina, Tennessee, Illinois, Indiana, Ohio, Wisconsin, Arkansas, Oklahoma, Iowa, Montana, Utah, Guam, Oregon, Virgin Islands.

Category III—States that may be able to close gaps in legislation and regulations by the effective date of interim authorization: Connecticut, Pennsylvania, Michigan, New Mexico, Missouri, Washington.

Category IV—States that are considered unlikely to be able to meet any requirements for interim authorization by the effective date: Delaware, Virginia, West Virginia, Florida, Nebraska, Colorado, North Dakota, South Dakota, Wyoming, Arizona, Nevada, Hawaii, American Samoa, Northern Mariana Islands, Alaska, Idaho.

It should be noted, however, that this is not a static categorization. The status of a State's legislation or regulations is not the sole determinant for authorization. The decision for a State to seek or not to seek authorization will also be affected by both the authorization requirements under Section 3006 and the requirements of the hazardous waste regulations under sections 3001-3005, all of which will be promulgated in April. We expect, during the summer, to have a much better picture of which States will have the qualifications for and the desire to seek authorization.

To prepare to initiate implementation of the hazardous waste program and assist the states, one hundred of the new FY 1981 Abatement and Control positions for EPA were distributed to the Regions during FY 1980 as advance hires. The distribution of these positions was based on an average of three different distribution models.

Option I provided 1 position per State with the remaining positions allocated on the basis of quantity of hazardous waste per Region. Option II allowed 1 position for each State expected to be authorized, 3 positions for each State expected not to be authorized and the remaining positions allocated based on the number of generators, transporters, treaters, storers and disposers of hazardous waste. Option III gave the same distribution as Option II for authorized and unauthorized States, with the remaining positions allocated based on the quantities of hazardous waste per Region. In looking at the three options, it is difficult to make a compelling case for one over the other. So, the advanced positions were distributed by averaging the three options.

Advance hire, D-210 positions

Region:	
I	7
II	10
II	13
IV	14
V	19
VI	9
VII	6
VIII	6
IX	11
X	5
Total	100

The remaining 64.9 PFTE we expect to be available in fiscal year 1981, along with 47.9 OPFTE, will be distributed using a Workload Analysis currently under development by the Office of Solid Waste. A draft of the distribution will be completed in early April and a final distribution will be submitted to the Office of Management and Budget in September as part of our Operating Plan.

There are 10.9 workyears associated with management of the Urban Policy Program in 1981. Of this total, 6.1 workyears are being invested by the EPA regional offices.

TECHNICAL ASSISTANCE

Mr. TRAXLER. Page SW-44 indicates that the budget provides technical assistance funds of $5 million rather than 20 percent of the RCRA budget and that an appropriation language change has been submitted to accommodate this.

Mr. BECK. That is correct.

Mr. TRAXLER. Section 2006(b) of RCRA directs that not less than 20 percent of the funds appropriated for general administration shall be used only for Resource Recovery and Conservation panels. However, that applied only to authorizations through fiscal year 1979. The authorization for 1980 and 1981 has not been enacted yet, correct?

Mr. BECK. That is correct.

Mr. TRAXLER. So what are you devoting to these panels currently in 1980?

Mr. BECK. We believe that we need the technical assistance program, with the technical assistance panels and the grants to the public interest groups at a reasonable funding level. However, unless we get corrections in the authorizing legislation which we are seeking, the amount required for technical assistance in 1981 might increase above $5 million, and that would concern us, because we are trying to keep as much money as we possibly can in Subtitle C management.

Mr. TRAXLER. What percentage are you devoting to these panels in 1980?

Mr. BECK. In the 1980 budget, $3.6 million, which is about 20 percent.

Mr. TRAXLER. If in the event the 1980 authorization, when enacted, calls for a greater amount than you currently have planned, what would you do?

Mr. BECK. That would be troublesome, and that is why we have sought a change in the authorizing legislation which the House has favorably dealt with, and why we have asked for some language in our committee report from you with regard to the $5 million cap. However, if the supplemental for 1980 is enacted and the 20 percent requirement still holds, we would have to take more than $1 million out of Subtitle C activities and put it into technical assistance. Although technical assistance is important, Subtitle C is our highest priority right now, and this requirement would have an adverse impact on the supplemental for Subtitle C.

Mr. TRAXLER. This Subcommittee could probably assist you in that regard by putting in some language. Would that be helpful to you?

Mr. BECK. That would be very helpful.

Mr. TRAXLER. In light of the decreased emphasis upon solid waste at the Federal level, why should the Committee recommend a separate $5 million for these panels? We are winding down in this area in some respects.

Mr. BECK. We have forecast a wind-down for this program. The wind-down should not occur yet. The program is not fully in place. What we have done is that we have provided grants and guidelines for the states to go out and classify and inventory all their different disposal facilities. We are fulfilling some of those requirements

in December of next year and continuing into the following year. Our feeling is that if we work intensively over this 5-year period that we had forecast, that in fact the municipalities, if they are able to self-sustain themselves with financial stability and so on and so forth, will be able to maintain and manage this problem.

On the other hand, if we were to cut it out right now, it would still leave behind a substantial municipal waste problem. The other thing is that the technical panels are more and more now moving into the business of providing technical assistance in the area of hazardous waste management. We have been focusing on Subtitle D activities, but we are now moving forward to use the technical advisory panels in Subtitle C areas.

Mr. TRAXLER. Did the Agency propose the wind-down in the solid waste program or did that come out of OMB?

Mr. BECK. I think the Office of Management and Budget had some strong interest in that.

Mr. TRAXLER. Explain the changes between appropriation accounts and the $1 million increase in the 1980 current estimate for technical assistance which is reflected on page SW-43.

Mr. BECK. Salaries were underfunded, I guess was the central issue for the reprogramming, but I would like to expand on that for the record if I may.

Mr. TRAXLER. Please do.

[The information follows:]

The primary reason for the change between appropriation is that the 1980 President's budget column does not reflect the proper split between salaries and expenses and abatement, control and compliance. When the 1980 submission was made, we did not clarify the distinction between our extramural funds and in-house funds.

UNCONTROLLED HAZARDOUS WASTE SITES

Mr. COUGHLIN [presiding]. Would you provide for the record the June 27, 1979 and November 27, 1979, memoranda referred to on page SW-50 of the justifications.

Mr. BECK. Yes.

[The information follows:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 27 1979

OFFICE OF THE ADMINISTRATOR

MEMORANDUM

TO: Assistant Administrators
Office Directors
Regional Administrators
ORD Laboratory and NEIC Directors

SUBJECT: Agencywide Hazardous Waste Site Enforcement and Response System

On May 24, 1979, I established a Task Force* to complete a plan for the above system. The Task Force has reported its recommendations to me, which I have accepted. The primary differences between the Plan and the previous draft of May 24, are: 1) a greater elaboration of the interim strategy for response to and enforcement against hazardous waste disposal problems presenting imminent risks to public health and the environment; and 2) a clarification that the placement of lead responsibility within the Office of Water and Waste Management for the implementation of this Plan in the Oil and Special Materials Control Division does not presuppose a similar organizational arrangement within Regional offices. Both of these differences reflect the comments and concerns of Regional participants on the Task Force. Since this Plan has not received Agency review, you may submit comments during the next two weeks to the Task Force Chairman and appropriate changes may be made subsequently. In the meantime, however, you should proceed to implement the Plan immediately.

Implementation of this Plan is of the highest priority. I expect you to give it your personal attention in order to assure that your organizations assign the effort top priority. I am and will continue to be personally involved in the Agency's efforts and I will be briefed regularly on your progress in dealing with these problems.

* Task Force members included: Jeff Miller, Chairman, OWE; Gary Dietrich, OSW; Henry Longest, OWPO; Jim Smith, OWWM; Paul Elston, ORM; Dave Bickart, OGC; Joan Nicholson, OPA; Steve Reznek, OEMI; Leslie Carothers, Region I; Sandy Gardebring, Region V; and Tom Devine, Region IV.

The Problem

We estimate there are 30,000-50,000 sites containing hazardous materials, of which 1,200-2,000 may contain significant amounts of hazardous wastes and pose substantial risks to public health and the environment. Few of these sites have been inventoried and the extent of risks posed by them are unknown. The sites may be abandoned, inactive or active. In addition, there is a wide spectrum of unauthorized and potentially harmful disposal of hazardous materials, such as "midnight dumping." The RCRA regulatory program, when fully implemented, will deal with the majority of these concerns, e.g., active sites, but will not deal with others, e.g., abandoned or inactive sites. Superfund will deal with the abandoned and inactive site problems. In the meantime, however, there is a gap in which EPA and the States must take forceful and expeditious action to remedy those situations which present substantial risk to public health and the environment. We will utilize existing authorities under RCRA, CWA, TSCA, the Refuse Act of 1899 and common law, as well as existing State authorities.

Purpose and Scope of Plan

This Plan is an interim measure designed to address the worse known problems associated with uncontrolled hazardous waste sites and the unauthorized disposal of hazardous wastes until more comprehensive authorities and augmented resources are available. The Plan will be altered as experience is gained and will lead to the development of a long range plan under Superfund.

Interim Objectives and Strategy

Our interim strategy is to respond to uncontrolled hazardous waste sites and the unacceptable disposal of hazardous wastes presenting public health and environmental risks which are presently known or which become known to us. The strategy is specifically an interim measure to bridge the gap until Superfund is enacted, which we project will occur at the beginning of FY 81. The strategy, however, should set the stage for the implementation of Superfund. The Plan does not contemplate an extensive systematic effort to discover new problems during this interim period: we already know more such problems than we can effectively deal with and more are being brought to our attention daily. In large part we will rely on the States to provide us with information about new sites. As we alleviate the worst of the known problems, however, we will be able to devote additional resources to the task of discovery and inventorying and the Plan includes the phase-in of a strategy to do so.

Our activities under this Plan will consist of the following elements:

1. Recording and prioritizing all known problems, including those discovered as a result of citizen complaints, continuously updating such records, and recording actions taken with regard to each problem.

2. Preliminary investigation of each known problem to determine whether further action is necessary, and, if so, what action and in what priority.

3. Immediate response to emergency situations utilizing section 311 authority, voluntary action, or State or local action, where possible, to contain, remove or mitigate releases of hazardous materials.

4. Enforcement where there is a viable defendant, a desired remedy and a good possibility of legal liability.

5.. Where neither immediate response nor enforcement is possible, full investigation to determine possible remedial measures when Superfund is enacted and to provide public information on the characterization of and possible remedies for the situation.

It is likely that the Agency will not be able to fully address all of these elements for each known problem with presently available resources. Regions, therefore, must properly balance these elements, assuring, however, that the first element is fully accomplished. Because we cannot fully address all of these elements at once, we must carefully prioritize our activities. In addition, we must develop public awareness of the scope of the problem, our efforts and successes in dealing with it, and the limitations on our ability to deal with it. This must include a coordinated effort at both Regional and Headquarters levels. It should emphasize developing a public awareness of the critical need for well designed and controlled facilities to treat, store and dispose of hazardous wastes to protect public health and the environment. At the same time, we must develop a long range strategy of dealing with the entire problem as more comprehensive authorities and a better appreciation of the resources necessary to do so become available. This strategy should include options on the extent to which we should undertake a systematic program of discovery (questionnaires, extensive surveys, achieve searches, etc.).

Process, Tracking and Reporting

This Plan does not direct how Regional Offices organize to carry out these efforts. Some of the steps outlined below must obviously be performed by particular elements in the Regional Offices, e.g., Step 5 by Regional Enforcement Divisions, and others must obviously be performed in an efficient, orderly and effective manner, but the Plan does not direct that any particular organizational structure be utilized.

1. The first step in this Plan is the assembly and continuous updating by the Regional Offices of an inventory of known or suspected uncontrolled hazardous waste sites or practices that potentially present risk to public health or the environment. This inventory should include suspected problems already known to the Federal and State governments and subsequently brought to their attention, including situations identified by citizen complaints. Because of the impossibility of fully implementing all elements of this Plan at once, significant resources should not be expended at the present time on a systematic program of discovery (questionnaires, expansive surveys, archives searches, etc.) unless other elements of this Plan are being satisfied.

This inventory will be kept in the Regional Offices and will not routinely be forwarded to Headquarters, although it will be available should the need arise. The inventory will be kept on a log form to be supplied shortly by the Task Force (being developed primarily by Regional representatives), to make aggregations possible. The number of sites or problems on the list will be reported and updated monthly. The inventory should not only be continuously updated for the addition of new entries, but also for the recording of actions taken and current status of each entry.

2. The Regional Offices will prioritize the sites or problems for preliminary investigations based on the seriousness of the potential risk to public health and environment. Guidance on prioritization will be developed by Headquarters (see below). The prioritization will not routinely be forwarded to Headquarters, although it will be available should the need arise.

3. Regional Offices and/or State technical teams will perform short (1 to 2 days) preliminary investigations of sites or problems on the Regional log in their order of priority. The purpose of these preliminary inspections is twofold. First, to determine whether emergency remedial measures are

necessary and, if so, see that they are accomplished by available means: section 311 action, voluntary action, State or local action, etc. Second, to provide the basis for a determination of what further action, if any, should be taken.

Reports of EPA or State preliminary investigations will not routinely be forwarded to Headquarters, although they will be available should the need arise. A master file of such reports will be maintained in each Regional Office. Normal reporting procedures for section 311 actions, of course, will be adhered to. The number of preliminary inspections made will be reported monthly.

4. After evaluation of preliminary investigations reports, and other relevant information (e.g., whether there is a viable defendant), the Regional Offices will make technical and legal determinations on tentative disposition. Categories of possible tentative dispositions include: no action necessary because no imminent hazard exists; remedial action to be undertaken by EPA, States, local government or private parties; further investigations necessary to determine potential harm and appropriate remedy; further investigations necessary to develop enforcement action. These dispositions, of course, are not exclusive or exhaustive. They are tentative and can be altered as further investigation is completed and more facts are known. Tentative determinations should be made in consultation with the States where possible.

Tentative determination will be forwarded to Headquarters in formats to be supplied shortly by the Task Force (being developed primarily by Regional representatives). The reports will contain a brief description of: the problem and the hazardous substances involved; the tentative disposition and rationale for the disposition; the required remedy, if known; the identity of the person or entity to undertake the remedy, if any; and any further investigations or actions necessary to devise a remedy or to support enforcement, together with a schedule for such investigations and a tentative projection of the resources required and any assistance needed from outside the Region. In addition, monthly statistical summaries of tentative disposition will be reported to Headquarters. If further action is to be undertaken by another governmental entity or private party, a schedule for expeditious and satisfactory resolution of the problems should be agreed to and tracked by the Regional Office. If the schedule is not reasonably

adhered to, the Regional Office should take appropriate action where possible under existing authorities to see that the required tasks are performed expeditiously.

5. If a tentative determination is made to develop an enforcement action, a case investigation and development plan will be developed, the scope and detail of which should be commensurate with the size, seriousness, and complexity of the case. The plan should identify resources needed from outside the Regional Office. The plan should include provisions for quality assurance, chain of custody and other measures necessary to assure the integrity and admissibility of evidence gathered. Attention to this is particularly necessary where personnel other than those normally involved in preparing enforcement cases are utilized. The plan will be forwarded to Headquarters, but no prior clearance is necessary before proceeding further with the development of the case. Normal enforcement tracking systems will continue for cases initiated by referral of litigation reports to Headquarters.

The Enforcement Task Force (see below) will review these plans, secure Department of Justice review of them, and transmit comments to the Regional Offices. It will also arrange for periodic meetings with Regional Offices, Department of Justice representatives, U. S. Attorneys, and the NEIC, to review the development of cases.

These procedures are not normal for enforcement cases and should not be viewed either as measures which will slow down the development of cases or as precursors to similar procedures for other enforcement cases. Rather, they are devised in recognition of the extraordinary legal and technical complexity and difficulty of these cases. They should result in a resource savings, by assuring that Regional resources are not squandered in developing cases that will ultimately be rejected by the Department of Justice or the referral of cases which will require substantially more preparation prior to filing. Early and continuous involvement at the Washington level (elaborated below) will also speed the ultimate review process.

Enforcement actions should normally be developed only where a viable defendant is available, i.e., one with sufficient resources to undertake all or a meaningful part of necessary remedial action. In unusual circumstances enforcement may also be necessary to force action not requiring such resources, e.g., where permission to enter a site posing an endangerment is denied. Enforcement against a defendant without sufficient

resources to contribute meaningfully to a remedy is generally not a wise expenditure of limited Agency resources and should not be pursued without first consulting with the Enforcement Task Force.

It should be emphasized that once a tentative decision has been made to develop an enforcement case, all investigatory and other work on the case will be planned, developed and overseen by the Regional Enforcement Division to assure that the results are judicially sustainable and support the remedy sought.

Finally, it should be emphasized that whether or not there is a viable defendant, we must assure that we exhaust all available remedies to correct problems that present an imminent risk to public health or the environment.

6. Upon the final disposition of a problem, Regional offices should submit a closeout report to Headquarters, outlining that disposition. Such dispositions include: no imminent risk to public health or the environment exists; remedy completed; remedy known but further action must await Superfund enactment or some other contingency; and enforcement action initiated by referral of a litigation report to Headquarters. No separate document, of course, is necessary where a problem is closed out by referral of a litigation report to Headquarters, the litigation report serves that purpose.

Final dispositions will be forwarded to Headquarters in formats to be supplied shortly by the Task Force (being developed primarily by Regional representatives). In addition, statistical summaries of dispositions will be reported monthly.

Summary of Reporting

Monthly statistical summaries will be reported commencing the end of July of: sites or problems on the Regional log; preliminary investigations conducted; tentative dispositions and final dispositions. This will form the basis of my review and evaluation of progress of the program.

The following documents will also be forwarded to Headquarters as they become available, commencing immediately: tentative dispositions, enforcement case investigation and development plans, and final dispositions. Normal enforcement tracking systems will continue for initiated cases.

All reports and documents should be forwarded to the Enforcement Task Force, which will act as a point of dissemination of Headquarters information and which will assemble monthly progress reports to me.

State Participation

State participation should be encouraged in all aspects of this process. We expect the States ultimately to manage the hazardous waste program as it is developed and should solicit their active involvement in implementing this Plan as well. In many instances, they have broader remedial and enforcement authorities than we presently have. We therefore should encourage States to take the actions outlined above and defer to and assist them when they do take expeditious and appropriate action.

At the same time, we must recognize that the imperative is to expeditiously remedy and enforce in those situations which present a risk to public health or the environment. Strong Federal action will be necessary in many cases and should proceed uninterrupted in the absence of quick and adequate State action. Where States agree to take necessary action, a schedule should be agreed to and tracked by the Region. If State action is not forthcoming as agreed, Federal action should be undertaken where possible under existing authorities.

Organization: Headquarters

1. Enforcement. A National Hazardous Waste Enforcement Task Force (the Enforcement Task Force) will be created immediately in the Office of Enforcement to provide national management of the enforcement component of the Plan. The Task Force Director will manage the work of Headquarters and NEIC enforcement personnel assigned to the effort and will coordinate with other EPA Headquarters and Regional units to assure that a coherent national strategy is developed and pursued.

The Enforcement Task Force will provide enforcement policy, legal and technical support to the Region, and manage dissemination of information from Regional reports to all concerned Headquarters offices. Specifically, it will:

- Implement and oversee the reporting and tracking system described above, disseminating information to other Headquarters Offices and providing me with monthly status reports, commencing at the end of July.

- Develop enforcement policy in concert with my office.

- Develop guidance for case preparation, including a case preparation manual if appropriate.
- Provide needed enforcement training to Regions and States.
- Provide technical and legal support to Regions, including NEIC support and locating needed expert help and witnesses.
- Provide national management of contracts for enforcement assistance.
- Review enforcement case investigations and development plans, secure their review by the Department of Justice and provide resulting comments to Regions.
- Establish periodic meetings with each Region, Department of Justice representatives and U. S. Attorneys to review and refine case preparation.
- Develop quality control procedures for enforcement investigations and case development, particularly for work done by contractors.
- Maintain continuing liaison with NAAG, the Department of Justice, other Federal agencies, ORD, OWWM and other affected Headquarters Offices.
- Develop long range planning for future enforcement actions and strategy, including resource needs.
- Direct enforcement investigation, case preparation and enforcement in a limited number of cases requiring national management.
- Develop a strategy to phase out the Task Force and integrate it with normal hazardous waste enforcement activities and organizational structure by the end of FY 1980.

It should be emphasized that cases requiring national management by the Enforcement Task Force will be small in number. They will be specifically designated by the Assistant Administrator for Enforcement, after consultation with affected Regional Administrators and subject to their appeal by the Deputy Administrator. Such designations will be made only

where the nature of the case is such that it cannot be adequately managed at the Regional level, e.g., where a case involves facilities of a national corporation located in several Regions, where it would most appropriately be developed in conjunction with a case being simultaneously developed by the Washington Office of another regulatory agency such as the SEC, or where a potential criminal action is involved and special investigative resources not available in the Region are available in Headquarters. Headquarters management does not preclude Regional participation in case development, indeed it would normally be expected.

2. Water and Waste Management. A new unit will be established in the Oil and Special Materials Control Division in OWWM to provide national guidance on the discovery, preliminary investigation, section 311 response, and non-enforcement investigation components of the Plan. The unit will also assure that the experience gained from the implementation of this Plan is made use of in developing implementation strategies and regulations under RCRA Subtitle C and under Superfund.

The unit will provide policy, guidance and technical support to the Regions regarding the above described components of the Plan and working with other appropriate elements of the Agency and other Federal agencies, will develop strategies and resource needs for dealing with these components. Specifically, it will:

- Develop policy and guidance on the discovery, preliminary investigation, section 311 response, non-enforcement investigation and remedial measures pertaining to uncontrolled hazardous wastes sites and situations, including manuals and other appropriate instruction material.

- Develop policy and guidance on the prioritization of responding to hazardous waste problems. This development will be coordinated with the Enforcement Task Force and will serve as a guide to the initial implementation of Superfund.

- Provide needed non-enforcement training to Regions and States.

- Provide non-enforcement technical support to Regions, including assignment of Emergency Response Team support and location of other needed expertise help.

- Provide national management of contracts for non-enforcement technical assistance.

I am also pleased that all regions have established initial contact with their state counterparts to develop state/EPA strategies. Many are in the process of obtaining specific commitments on investigation of particular sites and all regions plan to make uncontrolled sites a priority in the FY 1980 state/EPA agreements. Numerous workshops are being held with state personnel this month. We have noted the region's requests for special support, such as the need for additional travel ceilings, for safety equipment and training and contracts for analytical work. Headquarters staff are working to address these needs.

FY 1980 and Supplemental Resources

I expect to have a more detailed picture of the regions' program plans for uncontrolled sites when the FY 1980 operating plans, including two new decision units for uncontrolled hazardous waste sites, are completed. Further guidance will be forthcoming shortly on the Agency's efforts with regard to supplemental funding to implement this plan in the FY 1980 Budget.

Barbara Blum

Barbara Blum
Deputy Administrator

Attachment

REGIONAL WORKYEARS DEVOTED TO UNCONTROLLED

HAZARDOUS WASTE SITES, FY 1979

REGION	CURRENT	EXPECTED LEVEL BY 9/30/79
I	2.5	10
II	25	25
III	14	14
IV	16	16
V	17	17
VI	10	10
VII	4	10
VIII	3.35	3.35
IX	5	5
X	3	3
TOTAL	99.85	113.35

	CURRENT	END OF FY 1979

- Maintain continuing liaison with ORD, OE, ODW, OSW, other affected Headquarters offices, and other affected Federal agencies.

- Develop long range planning for the long term non-enforcement program and resource needs, particularly under Superfund.

3. Other Headquarters Functions

- OPA, working with the new OWWM unit and the Enforcement Task Force, will develop and assist in the implementation of a plan to increase public awareness of: the nature and scope of the problem; EPA's efforts to deal with the problem; the limitations on EPA's ability to deal with the problem; how these limitations might be eliminated; and the critical need for well designed and control facilities to treat, store and dispose of hazardous wastes to protect public health and the environment. This effort will be coordinated by a designated representative of my office.

- ORD will provide technical support in the areas of suggested remedial actions, health surveys of affected populations, measurement quality assurance and aerial surveillance.* (ORD will not fund aerial surveillance, but will maintain access to contractor capability and assist Regional and program office personnel.) The resources will be made available from the following laboratories:

Organization	Individual Contact	Telephone Number	Manyears/ Year	Type of Activity
Indus. Res. Lab/N.J.	Ira Wilder	8-340-6600	2	Remedial Action
Muni. Res. Lab/Cinci	Robert Stenburg	8-684-7931	2	Remedial Action
Monit.&Tech. Sup./LV	Gene Meier	8-595-2966	4	Quality Assurance
Health Res./Cinci	John Warner	8-684-2931	2	Health Effects
Monit.&Tech. Sup./LV	Gene Meier	8-595-2966	1/2	Aerial Surveillance

*The Enforcement Task Force, working with OGC, will develop legal and policy guidance on the use of aerial surveillance.

Requests for support should be made directly to the individual contacts at the laboratories. The requests should be made for specific tasks and should originate from a person with the rank of Division Director or higher in a Regional or Headquarters office.

ORD will respond to all requests until the demand exceeds the stipulated level of support at a particular laboratory. At that time, the laboratory director will notify the Deputy Assistant Administrator for EMI that the demand for technical support can no longer be met. At that time the Deputy Assistant Administrator for EMI will consult with the Deputy Assistant Administrator's Guidance Committee (see below) and ORD senior management to determine what measures should be taken and whether a more formal management structure is needed to provide ORD support for carrying out this Plan.

- The DAA's for OWE, OSW, OWPO, OEMI, and ORM and a designated member of the Deputy Administrator's staff will constitute a Guidance Committee to assure that all Headquarters efforts to implement the Plan are properly coordinated and to anticipate and resolve problems as they arise. The Guidance Committee will meet monthly and upon the request of any member. Problems, disputes or controversies which cannot be resolved by the Committee will be referred to the appropriate Assistant Administrators.

- A staff member of the Deputy Administrator's office will be assigned to follow progress in implementing the Plan and will act as a coordinator in the following respects:

  - provide general coordination of the interim Agency-wide hazardous plan;

  - act as a focal point for information flow to the Deputy Administrator;

  - provide guidance and coordination for national news media contacts;

  - act as a focal point to secure the Deputy Administrator's intervention to resolve differences with other Federal agencies, differences, if any, within the Agency, and short term resource shifts, if any, necessary to carry out the Plan.

Organization: Regional

Regional Offices are responsible for carrying out the investigation, emergency response, routine abatement and enforcement functions outlined above. These functions involve the management and coordination of several diverse elements of regional programs: hazardous waste, enforcement, Section 311 response, surveillance and analysis, etc. The organization and coordination of these elements is left to the Regional Offices. In determining how this is to be accomplished, the Regional Administrators must bear several factors in mind. This effort has the highest priority in the Agency. It is very visible and unusual in its span of program elements and organizational units that must be brought together into an effective working relationship. Effective lines of communication must be maintained between Regional Offices and the Enforcement Task Force and the OWWM unit. Each region has designated a coordinator for this purpose. Please reexamine your designations to insure that they can represent you with respect to all elements of the Plan.

Regional Resources Diverted to Uncontrolled Sites

At the Denver training workshop in May and in a follow-up memorandum, I asked the regions to report to me on the level of resources being diverted from other activities during FY 1979 to address the problem of uncontrolled sites and to identify the activities being reduced. I also requested that the regions begin immediately to confer with appropriate state agency personnel and to develop joint strategies for investigating uncontrolled hazardous waste sites.

The resource estimates provided by the regions are shown on the attachment for your information. The decision units most commonly affected by the commitment of additional resources to uncontrolled sites in FY 1979 are water quality monitoring and enforcement (surveillance and analysis work), toxics management and enforcement, water supply management, and pesticides enforcement. To obtain the necessary mix of technical and analytical skills for work on uncontrolled sites, the regions have drawn on a wide range of programs and personnel. Many have established coordinators or committees to manage this program which requires support from more than one division in the regions.

Region	Level of Resources Reprogrammed FY-1979	Programs Reduced by Reprogramming	State Strategies	Special Support Needs	Tentative FY-80 Plans; Other Comments
I.	1.7 WY Half in laboratory support; half in coordination and technical assistance. .8 WY - legal enforcement 2.5 WY	Principally Water Qual. Enf. - .5 Drinking Water Mgmt. - .3 Toxics Mgmt. - .2	- State contacts identified - Beginning negotiation of FY-80 State/EPA agreements to include hazardous waste site strategies - Will convene regional/state workshop by July 1.	Region requests clarification of legal liabilities of EPA personnel advising in emergency or clean-up operation.	Considering 7.5 WY of reprogramming for remainder of FY-1979. FY-80 plan in process.
II.	16 - S&A Division 5 - Enforcement 4 - Other 25 WY	Monitoring and enforcement, solid waste, toxics management.	Briefing Paper for DA, May 18, describes extensive efforts via interagency task forces in NY and New Jersey Strike Force.	Requests grant support to follow-up on State/EPA survey of sites in Niagara Falls area.	

Region	Level of Resources Reprogrammed FY-1979	Programs Reduced by Reprogramming	State Strategies	Special Support Needs	Tentative FY-80 Plans; Other Comments
III.	14 WY diverted.	Toxics Enf. (PCB's) Water Qual. Monitoring Pesticides Enf. Water Quality Enf. Toxics Management Water Supply Spill Prevention People drawn from all these programs to provide needed mix of skills for site assessment and lab work.	Have had initial contacts with states, but find them reluctant to get involved in uncovering more problems in their states.	Extra money for special safety equipment.	Has a two-phase approach. First phase (now through July 30) is inspections and assessments of 20 sites - second phase (August 79 to October 80) will involve follow-up. This will require more resources.
IV.	13 WY (Does not include North Carolina PCB or Louisville case) Adding 3 WY since Denver meeting for investigations. = 16	Principally DU's Solid Waste Enf.-1.25 Haz. Waste Impl.-1.00 Water Qual. Enf.-4.00 Water Qual. Monit. -5.40 Monitoring for compliance and for 129 toxic pollutants is activity most affected.	Region's Coordinators will visit states to negotiate commitments on investigations and develop state strategies.	Immediate need for contact laboratory support and groundwater well drilling works. Also need for lab and safety equipment and travel funds.	FY-1980 reprogramming of 5 positions from Haz. Waste Implementation and Water Quality Enforcement to yield program of 16 positions, counting 11 workyears of target resources.

Region	Level of Resources Reprogrammed FY-1979	Programs Reduced by Programming	State Strategies	Special Support Needs	Tentative FY-80 Plans; Other Comments
V.	17 WY.	Has relied on the cumulative regional lapse rate, and has therefore not formally reprogrammed.	Series of state meetings to provide coordination, including state A.G.'s. R.A. level communication to get it started. States will be asked for information on sites. Region will discuss resources it can provide.	Lab analytical work is becoming a bottleneck.	They would like 30+ positions to devote to maintenance of the program. Output - 1 case filed 3 being developed with U.S. Attys. 6 under development 30 evaluated.
VI.	10 WY and $25,000 travel funds to date. 17 WY, FY-79 total	Most substantial in water compliance and priority pollutant (toxic) water monitoring. Also diversions from haz. waste state program dev. and drinking water (VIC) section.	State strategies discussed and to be available in draft by June 11, date Region/State workshop.	Travel funds not available thru FY-1979.	Planning 24 WY (18 in S&A and Enf.) for FY-80. Have 6 cases as high potential for enforcement and estimate 20 thru FY-1980.

Region	Level of Resources Reprogrammed FY-1979	Programs Reduced by Reprogramming	State Strategies	Special Support Needs	Tentative FY-80 Plans; Other Comments
VII.	4 WY to date 6 WY to 9/30 10 WY total	- Pesticides Enforcement (labeling and procedural cases) - Solid Waste technical assistance - Quality assurance and enforcement support for safe drinking water program	- State strategies will be completed 6/15/79, with commitments on investigations, target sites, etc. - FY-80 strategies in State/EPA agreements - Workshop to be scheduled in June.	Need procedure to obtain outside lab analytical support.	Need resources for more systematic discovery effort and to increase siting efforts for new disposal facilities. Need to delete cleaned up sites from lists.
VIII.	3.35 WY	Just says strain on solid/haz. waste program.	RA is raising issue with states at mid-year reviews and Region will conduct workshops. Issue begin included in FY-80 State/EPA agreements.		Estimates 20 WY needed.

Region	Level of Resources Reprogrammed FY 1979	Programs Reduced By Reprogramming	State Strategies	Special Support Needs	Tentative FY 80 Plans; Other Comments
IX	5 WY (positions reassigned)	RCRA, TOSCA, and water enforcement programs affected.	Raised in State/EPA agreement negotiations. Workshop 6/15, followed by strategy sessions involving state A.G.'s and U.S. Attorneys		FY 80 resources on attachment (missing)
X	3.0 FTE (represents part and full time effort of 18 people)	Small contributions from all programs indicated. For FY-79, more aggressive program would add 1.4 FTE but would have to come from outside Region.	Staff and RA level meetings held with most states. Will begin to implement now and formalize in state/EPA Agreements. Workshop planned for June.		FY 80 minimum is 6.3 WY; more aggressive program at 13.7 FTE.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 27 1979

OFFICE OF THE
ADMINISTRATOR

MEMORANDUM

SUBJECT: The Hazardous Waste Site Enforcement and Response System

TO: Regional Administrators

In our conference call of November 16th, I emphasized that response to hazardous waste sites and spills was the Agency's highest priority. Doug and I believe that this priority determination must be reflected in the allocation of Regional resources, personnel and management attention.

As you know, delay in promulgation of the final RCRA regulations is necessary to insure that those regulations reflect our best legal and technical judgments and can successfully withstand judicial challenge. This delay, however, leaves EPA vulnerable to charges of passivity and inactivity at a time when the hazardous waste problem and the public's sensitivity to the problem is growing rapidly. During the "interim" period before the RCRA regulatory program is fully operational, we must aggressively use all available resources and legal authorities to deal with the hazardous waste disposal problem.

Clearly, the Agency must improve its capability to deal with hazardous waste sites and spills. We need to locate, prioritize, investigate, and respond to a larger number of sites. While contractor resources will be available within the next several months to help us conduct site investigations and analyze the resulting samples, this process will also require the long-term assignment of additional Regional resources and personnel to supplement both existing Regional efforts and contractor-assisted activities. In many Regions the resources and management attention currently devoted to this effort are unable to deal successfully with the current level of Agency activity---let alone the expanded efforts that will be required.

Major areas requiring attention include response activities under Section 311 of the Clean Water Act, hazardous waste enforcement, the development of data in support of pending Superfund legislation, a resource-efficient program to locate potential sites, and Congressional and media programs to highlight the achievements and needs of the Agency's hazardous waste program. Regional progress and problems will be a major topic of discussion at the December 18, 1979 Senior Management Retreat. At that time Doug and I will chair sessions asking each of you about the progress you have made in this area. Particular emphasis will be given to the number of enforcement cases filed or scheduled to be filed; your efforts to integrate your 311, enforcement, and program effort; and your use of Section 311 response authority and funds at appropriate hazardous waste sites.

Our goals and future directions in these areas---as highlighted in the conference call---are summarized below.

Section 311 Response/Superfund

Regions should aggressively use Section 311 authority and funds for emergency response to both hazardous waste sites and hazardous waste spills. While there are dollar ceilings on currently available 311 funds, Regions should not hesitate to use the fund to undertake all appropriate response actions.

The Office of Water and Waste Management and the Office of Planning and Management are currently assessing mechanisms to charge response-related Agency costs to the Section 311 fund. OWWM will be issuing additional guidance on the use of emergency response authorities just as soon as possible. If you have questions in the interim please contact Ken Biglane's office.

Associated with these moves to encourage use of the Section 311 fund is the need to augment the capabilities, resources, and authority of Regional on-scene coordinators in responding to emergency spills and releases. This should include steps to improve the coordination and pre-planning between the Regional Emergency Response Team and other Regional personnel working on hazardous waste response. So far, Regional emergency response personnel have not been adequately involved in Regional decision making on waste sites. A second step that should be taken in the emergency response area is the development of procedures to increase the public understanding and visibility of EPA and State emergency response activities. Environmental Emergency Teams must receive adequate on-scene assistance to help them respond to media inquiries and opportunities.

For hazardous waste sites where enforcement and 311 response options are unavailable or unproductive (for example, where there is no threat to "navigable waters" or no financially responsible party), Regions should develop estimated remedial costs that might be charged against Superfund. (The site tracking system referenced below provides a mechanism for developing these estimates.) This kind of data base is indispensible to the passage and effective implementation of that legislation.

Enforcement

On November 9, I forwarded material to you establishing the hazardous waste site management system. This system, developed with heavy Regional involvement, is designed to provide a consistent framework for Regional decision making--- developing and documenting the information available on each potential hazardous waste site from the point of initial identification through the investigation, cleanup, and enforcement stages. While all new systems inevitably face certain start-up problems, I believe this is an excellent management tool and ask for your cooperation in making the system fully operational.

Regions should immediately begin to use this system to document the investigative and response status of potential sites. We intend that this system be used primarily as a Regional management tool, and only secondarily as a tool for Headquarters policy makers. Through careful attention to how site information is characterized and publicized, we believe that any unfounded public concerns can be minimized.

As you know, the Hazardous Waste Enforcement Task Force and OWWM's Oil and Special Materials Control Division have been working to develop major national contracts to augment Regional site investigation and sample analysis resources. The contracts, managed by OSMCD with major input from the Task Force, are designed to support both remedial and enforcement actions. An $8,000,000-$10,000,000 site investigation contract is scheduled to put the first increment of contract personnel in the Regions by January, 1980. This will be supplemented by $7,000,000-$9,000,000 in sample analysis contracts which will also begin to become operative in January, 1980. Additional guidance and background on these contracts will be made available in the next several weeks.

As indicated earlier, however, additional Regional resources will be needed to support this effort both during the interim period before full-scale contractor assistance is available and over the longer term.

To expedite the development of hazardous waste enforcement actions, regularly scheduled meetings are already underway involving the Hazardous Waste Enforcement Task Force, the newly formed Department of Justice Hazardous Waste Section, and Regional personnel. The purpose of this cooperative effort is to develop agreement on individual "case development plans" at the earliest possible date, avoiding the delays associated with "sequential review" that we have faced in the past. You should be aware that the Department of Justice has indicated that it will require only a "reasonable showing" to bring cases in the hazardous waste area, and that the Task Force is prepared to work closely with the Regions in expediting case development and resulting litigation referrals.

The bottom line in the enforcement area is obviously the number of cases filed. Each Region needs to expedite the site investigation and case development process, reflecting the fact that hazardous waste enforcement is the Region's top enforcement priority. While we obviously do not intend to discourage State actions where their legal authority is good and they are moving vigorously, it is clear that EPA must also develop a large number of Federal cases if the Agency response is to reflect the magnitude of the nationwide hazardous waste problem.

The Enforcement Task Force is currently working on projected caseloads for each Region, based on such factors as concentration of hazardous waste production and disposal facilities and apparent patterns of waste disposal and waste disposal techniques. Obviously, you should not wait for these projections to accelerate your activity in this area.

EPA Involvement in Locating Sites

My June 27 memo setting up the Hazardous Waste Site Enforcement and Response System indicated that the Agency did not have sufficient resources to simultaneously respond to known imminent hazardous and to undertake a systematic, resource-intensive search for new sites. This resource problem left much of the responsibility for site location in the hands of the States, municipalities, and citizen and environmental groups.

While the Agency still has serious resource problems, it is clear that this interim policy should be modified to move the Agency into a more aggressive site-search role. Obviously, the scheduled addition of contractor resources will be a significant "plus" in the development of our site investigation capacity. Nonetheless, we will still have to develop resource-efficient strategies that involve States, citizen groups, and contractors to the maximum extent possible.

It is plainly not enough just to identify potential hazardous waste sites. Any system that we develop must be designed to lead us to the potentially most serious sites first. The Agency and States must develop rational and defensible criteria for deciding which sites to investigate and respond to first.

Approximately 1,500 potential sites are already listed on Regional logs and some 3,300 sites are identified in the recently released Eckhardt Subcommittee Survey. Additional data from the Subcommittee's files was forwarded to the Regions on November 21st to assist your site screening and prioritization process. Clearly, Regions should employ the same screening and priority setting procedures in evaluating the Eckhardt sites that are used in assessing potential hazardous waste sites already listed on Regional logs.

Procedures for setting priorities for site inspections and Regional response actions clearly need careful attention. Regions should take another look at the draft priority-setting criteria developed by the Oil and Special Materials Control Division and distributed at the initial OSMCD/Task Force Regional meetings. Any comments and suggested refinements should be communicated to OSMCD and the Task Force. As part of the process of developing resource-efficient site-search strategies and refining prioritization approaches, a working level Headquarters/Regional meeting will be convened in the next several weeks. One goal of the meeting will be to review existing Agency systems and inventories---like OSW's "Facility Inventory Subsystem" and the Pits, Ponds, and Lagoons Inventory---to determine what in-house clues we may have. (A "quick and dirty" contractor assessment is already underway in this area.) Another approach will be to assess sources like USDA's Soil Conservation Service county agents as potential sources of site information. We need your ideas on other resource-efficient site-search approaches as soon as possible.

Congressional Relations/Media and Public Awareness

We need to do a better job in explaining the achievements and needs of the Agency's hazardous waste program. Regional actions should include Congressional/Regional Administrator visits to waste sites, joint press conferences with Congressmen and local elected officials, briefing sessions for local newspapers, editorial board sessions, speeches, and briefings for constituency groups. Regions should also establish priority response for Congressional inquiries related to hazardous waste sites and reassess procedures for notifying the Office of Legislation and Congressional offices concerning spills and releases of hazardous materials.

An external affairs plan has been prepared by the Office of Press Services, OPA, and the Office of Legislation and will be forwarded to the Regions in the next few days.

Summary

This is a critical program area requiring the reordering of priorities and resources. I trust that our discussions at the Senior Management Retreat will reflect substantial progress in the number of cases filed or scheduled for early filing; the integration of 311, enforcement, and program efforts; the use of 311 response authority and funds at appropriate hazardous waste sites; and the development of an active media and Congressional awareness program.

Barbara

Barbara Blum
Deputy Administrator

AWARD OF FIELD INVESTIGATION CONTRACT

Mr. COUGHLIN. Was the $7 to $8 million field investigation contract awarded in February according to plan?

Mr. BECK. We will submit that for the record.

[The information follows:]

FIELD INVESTIGATION CONTRACT

The field investigation contract was awarded February 15, 1980, to Ecology and Environment, Inc. of Buffalo, New York. The face value of the contract (subject to appropriations) is about $15 million, to cover work performed thru fiscal year 1981, with options to extend thru fiscal year 1983. About $9 million will be obligated in fiscal year 1980. The contract will provide:

Collection and review of background data on a particular site including title searches, geologic and hydrologic maps, aerial photographs, etc.

Off-site investigations to determine the proximity of potentially affected populations.

Preliminary and full field investigations to characterize the contents of the site, contamination routes, and exposure risks.

Data analysis and report preparation.

Enforcement support, including expert testimony.

Recommendation and preliminary designs for site containment and control schemes for action under Section 311 or as a potential Superfund candidate.

HAZARDOUS WASTE ENFORCEMENT

Mr. COUGHLIN. The 1980 budget amendment for hazardous wastes—which was approved by the Congress—included 70 positions and $22 million. Where does that appear in your justification material for 1981?

Mr. BECK. That is under the abandoned sites category, some of it. Most of it is accounted for there.

Mr. MILLER. Fifty-three of those positions are uncontrolled hazardous waste enforcement.

Mr. BECK. SW-49 has a lot of the contract money. Are you asking me the page, Mr. Coughlin?

Mr. COUGHLIN. Yes.

Mr. MILLER. The uncontrolled hazardous waste site enforcement is on SW-52.

HAZARDOUS WASTE PERMIT ISSUANCE

Mr. COUGHLIN. You have requested $4,115,000 and 121 positions for hazardous waste permit issuance. How did you estimate it will have to issue 7,500 permits and that the states with approved programs will issue 30,000?

Mr. MILLER. We took the total projected permits to be issued, which I think now, we project 30,000 permits will need to be issued, and we project 37 states will have authorized programs, and the proportion would be that we would end up issuing 7,500.

Mr. COUGHLIN. How did you arrive at 30,000 permits?

Mr. MILLER. Those were based on surveys made by contractors.

SCHEDULE FOR PERMITS ISSUANCE

Mr. COUGHLIN. What is the six-year schedule for permits issued, that is, how many permits will be issued in each of the next six years? Provide that for the record.

Mr. MILLER. Yes, we can provide that for the record.
[The information follows:]

SIX-YEAR PERMIT SCHEDULE

EPA intends to issue a total of 7,500 HWM permits over a six year period. Current estimates of the number of permits to be issued per year are as follows:

6-YEAR PERMIT SCHEDULE

Permit category	1981	1982	1983	1984	1985	1986
Major offsite	301					
Minor offsite	938	300				
Onsite	420	1244	1324	1324	1324	364
Total	1659	1544	1324	1324	1324	364

These estimates will be revised as soon as more recent information is available.

SOLID WASTE PROGRAM

Mr. COUGHLIN. The Agency is planning to double the number of people working on solid waste in 1981. Previous Agency attempts to increase personnel drastically have not been completely successful. Some of the problems experienced have been lack of space and inability to compete with industry in certain disciplines. Do you have adequate space to accommodate a near doubling of the solid waste program in 1981?

Mr. BECK. That is a very significant problem, particularly in headquarters.

Mr. COUGHLIN. Where are you going to put them?

Mr. DRAYTON. Most of this increase is in the regions, and the space issue varies from each region. The increase is less in headquarters. However, the Washington metropolitan area is just a very ridiculous situation as far as space is concerned.

Mr. MILLER. But doubling the size of the solid waste program will not involve quite as much space for hiring problems as it may appear since it is offset in part by losses in other programs. It is not a 100 percent increase. For instance, in the enforcement area, taking all media into account, we are gaining 158 positions (37 in Hazardous Waste Enforcement and 121 in Hazardous Waste Permits), but losing another 50 positions in other program areas, so it is a net gain of 108 positions.

Mr. DRAYTON. Furthermore, if you think of the regions which compose half the Agency, that is a much bigger base in terms of management ability to hire, as compared for example, with the toxic program which a few years ago was only 50 people and had to first build a management structure. Here we already have a management structure in place and building on a much larger base overall, as Jeff is suggesting.

Mr. COUGHLIN. Do you really believe you will be able to hire the number of people that you propose in 1981?

Mr. BECK. There are a couple of things that we have done to try to deal with that and to try to improve personnel management. One is that we are doing advanced hiring from anticipated Agency vacancies and have been now for the last few months.

The second thing, which is, I think, almost revolutionary here, is that having anticipated this problem in December, Bill Drayton put together a recruitment team to aggressively recruit people. He can tell us the successes that we are having in this area.

Mr. DRAYTON. The planning of this effort has been a broad one. We have articulated exactly what types of skills we need and clearly defined these for the regions. We have also added special capacity in the personnel management area to give priority attention to those cases. The hiring responsibility remains with the hazardous waste program in the regions, but we are trying to provide them with special technical ability and processing priority.

TCE

Mr. COUGHLIN. Let me ask a couple of questions, if I may, regarding the TCE problem. First, you were going to do additional studies of the toxicity of TCE itself?

Mr. BECK. Yes.

Mr. COUGHLIN. Can you tell me something about the progress of those studies at this time?

Mr. BECK. I cannot tell you the progress of it, but they are one of the ten organics that I indicated to you yesterday that we are going to be writing Maximum Contaminant Levels for next year, and we are starting to assemble, gather and get information on it.

I should also tell you that the TCE has become a problem that is not only limited to Pennsylvania.

Mr. COUGHLIN. I suspect that is going to be a national problem.

Mr. BECK. We have had a substantial amount of the problem showing up in Long Island. There have been pockets of California that I know of that have shown up with high concentrations of it in ground water, and so we are beginning to assemble the data from a variety of programs on that.

I might add that under a 208 program grant that was given to Nassau-Suffolk County on Long Island, a major part of that a number of years ago was a groundwater management program. It was through that program that we began to assemble some data, facts and information about TCE. It has become a self-inflicted hotfoot. We have a variety of programs that are going on at the regional level right now, and we will be coming out with national regulations next year.

Mr COUGHLIN. Thank you, Mr. Chairman.

Mr. TRAXLER. Did you have further questions at this point?

Mr. COUGHLIN. No.

PESTICIDES PROGRAM

Mr. TRAXLER. Let's move on to the pesticides program on page P-1. This program reflects some significant increases. 1980 current estimate is 9.5 percent above the budget estimate, partly due to Congressional action. The 1981 request of $74 million is 8.6 percent above the current 1980 plan. Two appropriation accounts, salaries and expenses, and research and development, reflect reductions in 1981. However, the abatement, control and compliance account is increasing $10,779,000, or 37.8 percent.

60-531 O - 80 - 16

In 1980, the authorization bill for EPA's pesticides program died in conference. The 1981 program also requires authorization. How can we recommend significant increases above the 1980 level until the authorizing legislation is passed? Does anybody know the answer to the authorization problems? This is a policy question. Why should we give you more money in 1981 for a program that requires Congressional authorization?

Mr. JELLINEK. My understanding, Mr. Traxler, of the reason why the authorizing bill died in conference was not related necessarily to the substance of the pesticide program. It was related to a disagreement between the Senate and the House on the one House veto provision. I don't think that failure to reauthorize should reflect any basic concern by the authorizing committee about the general thrust of the pesticide program. As you know, the House in general has consistently supported one House veto of regulations, and the Senate has consistently rejected it, and they just got tied up in the conference committee and never were able to get back together.

Mr. COSTLE. In the meantime we have to do what we have to do.

Mr. TRAXLER. What kind of problems would you have if this Committee didn't recommend pesticide funding until there is a 1981 authorization in place?

Mr. JELLINEK. We would have major problems.

Mr. TRAXLER. You might never have a 1981 authorization.

Mr. JELLINEK. We would close up shop.

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT

Mr. TRAXLER. Turning to page P–5, I noticed that certain pesticide manufacturers have raised court challenges concerning the constitutionality of the 1978 amendments to the Federal Insecticide, Fungicide and Rodenticide Act. What is the basis for those lawsuits?

Mr. JELLINEK. Briefly, the 1978 amendment permits EPA to use information provided by registrant A to make regulatory decisions on products requested to be registered by registrant B. They also permit us to disclose that information if it pertains to health and safety. Seventeen pesticide companies as well as the trade association have sued EPA, but in essence they are suing the Congress, claiming that that provision represents an unconstitutional taking of proprietary data, of their property, and because of that suit, major portions of our program are in jeopardy.

The ability for us to conditionally register pesticides was also provided by the 1978 amendments, and the ability for us to reregister pesticides under the generic standards approach is in jeopardy as well. If we lost those lawsuits, we will have to completely restructure our approach toward registration and reregistration, and will undoubtedly be back to this committee to discuss how we might carry out a restructuring of our program.

Mr. TRAXLER. Do you think you are in good shape in those lawsuits?

Mr. JELLINEK. Our lawyers think we are in good shape. We can win.

Mr. TRAXLER. What would be the effect on the pesticides program if you lost the cases?

Mr. JELLINEK. Well, we will have to restructure our approach. We will not be able to take the generic approach to reregistration, and we will have some great difficulty in conditionally registering the products.

Mr. COSTLE. It would be a major, major setback, for a sensible approach in trying to deal with a multiplicity of chemicals in the pesticide area.

Mr. JELLINEK. From a public policy point, it would be a major disaster. We would be operating once again in secret on information as to the health and safety of these products that won't be disclosed.

PESTICIDES EXPOSURE ASSESSMENT INITIATIVE

Mr. TRAXLER. You are requesting $788,000 and 11 permanent workyears in 1981 for a new initiative called Exposure Assessment. Why is this being established as a separate effort?

Dr. GAGE. The major gap in data to be used in the development of a full health-risk assessment associated with pesticides is in the area of linking the environmental levels of the pesticide with the actual exposure to human beings, and the Office of Pesticides personnel have been running into this problem quite acutely in the development of analysis, and has asked the Office of Research and Development to reprogram some of our experts into this area to fill this very important gap.

Mr. TRAXLER. Looking at the justifications, I see that one of the three main components of the health effects program is the "determination of the level of exposure to pesticides by persons environmentally exposed." The 1980 justifications also state, "In addition to EPA's need to document the environmental exposures to persistent pesticides, considerable attention is focused on the potential health hazards associated with the use of pesticides in agricultural situations."

How is this new activity different from work that the Agency was doing previously?

Dr. GAGE. Could you give me references, Mr. Traxler?

Mr. TRAXLER. Turn to page 1044 of last year's hearings, at the top of the page.

Dr. GAGE. Rather than delay the hearings at this point, could we look these up or possibly provide this for the record?

Mr. TRAXLER. Yes.

[The information follows:]

PESTICIDES STUDIES

The previous research which we have engaged in consisted of studies to determine the effects and the fate of pesticide compounds within the environment. In this regard various test organisms or groupings of organisms are subjected to the chemicals and the response is quantified. Studies of the fate of pesticides are directed at evaluating the rate of break-down and the eventual sinks of the chemical as it passes through natural ecosystems.

The Exposure Assessment research initiative is substantially different in that the concentrations of pesticides to which both natural systems and man are subjected to, will be determined. Thus, a given pesticide will be traced from the point of application through the plant-soil-water systems or the various routes it may take

to man. By monitoring the impacts and the concentrations through these various stages it will be possible to determine or predict risk/hazard potentials to both natural systems and to man.

INTEGRATED PEST MANAGEMENT

Mr. TRAXLER. Integrated Pest Management is addressed on page P-23. The Committee has been a strong supporter of IPM, and notes with pleasure that in 1981 the Agency is requesting $2.9 million, a considerable increase above the previous requests. Explain the following sentence which appears in the first paragraph under this account: "However, due to the $1 million cut in the 1981 program, and the co-funding of the '15 University IPM Consortium' project with USDA—Science and Education Administration, there is an increase of $514,000 in available funds." What does that mean?

Dr. GAGE. Getting to the substance of this, we are carrying ahead the $3 million which the Congress gave us for the multi-crop integrated pest management consortium, and in the mosquito control in rice land. We have been very fortunate, and I think this is a significant, natural development, to get the Department of Agriculture to commit to co-funding the multicrop consortium with us. Rupert Cutler, the Assistant Secretary of the Department of Agriculture, has committed their budget to provide $1.5 million for co-funding of this project. We are matching this with $1.5 million from EPA.

In our budget, we felt that we should, one, carry along our portion of the mosquito control, or the full amount for the mosquito control and our portion for the multicrop consortium, but in addition we felt that we should begin to put more emphasis on urban pest management, given the high levels of exposure of many people to quite a wide variety of pesticides and herbicides used in the urban environment, so that statement there in the first paragraph is a little bit awkward, but basically it means that we will be carrying ahead all of the commitments we have had in the past, and will have approximately $325,000 for the urban pest management initiatives.

Mr. COUGHLIN. Mr. Chairman.

Mr. TRAXLER. Yes.

Mr. COUGHLIN. I have to leave to keep a speaking engagement. I will have some questions to submit later for the record, if I may, on behalf of Representative Mark Andrews, my colleague from North Dakota. When I return, I will be interested in following the responses on 2,4,5-T, which I believe we discussed last year.

Mr. TRAXLER. What level of funding will be devoted to mosquito control in 1981?

Mr. GAGE. I believe that is being continued ahead at $500,000.

Mr. TRAXLER. What funds are targeted for the urban IPM program?

Mr. GAGE. We are planning to spend approximately $325,000 on Urban IPM. To clarify our total request for FY 1981, in addition to the three programs above, we will spend the balance of the $2.9 million for Regional IPM crop demonstrations, technology transfers, and in-house costs.

COSTS FOR PESTICIDE CONFERENCES

Mr. TRAXLER. How much financial support did you provide for the Ninth International Congress of Plant Protection and for a two-day working conference on Pest Control Strategies for the future? You can provide that for the record.

[The information follows:]

CONFERENCE ON PEST CONTROL STRATEGIES

The Office of Research and Development provided $30,000 to support the Ninth International Congress of Plant Protection and $6,420 to support the two day working conference on pest control strategies for the future.

INTEGRATED PEST MANAGEMENT SALARIES AND EXPENSES

Mr. TRAXLER. Detail also for the record how the requested $117,000 in salaries and expenses, will be used.

[The information follows:]

INTEGRATED PEST MANAGEMENT

The $117,000 requested in salaries and expenses will provide the IPM research program with technical support through Intergovernmenatal Personnel Act assignees, administrative support through service-oriented contractors for research planning and evaluation, and resources for publication of program and project reports.

PESTICIDES-REGISTRATION AND TOLERANCES

Mr. TRAXLER. Turn to page P-31, the Registration and Tolerances Program. In 1980, the registration activity is decreasing in total from $8,250,000 to $7,494,000 in the current estimate. However, the salaries and expenses account is increasing dramatically while abatement, control and compliance reflects a big loss. What accounts for the overall decline and the switch between these two accounts?

Mr. JELLINEK. Frankly, in the 1980 original estimate for salaries and expenses, we made a mistake and budgeted too low. We reprogrammed out of abatement, control and compliance in order to cover salaries and expenses. It was, a conscious decision to cover our personnel costs. Some of the increases in fiscal year 1981 that we are asking for in the pesticide program, although not in this particular account, reflect an attempt to pay back our contract program which was bled in order to cover salary expenses in 1980.

Mr. TRAXLER. I notice that your workyears and full-time equivalency declines. How will you use the salary and expense money?

Mr. JELLINEK. The workyear does decline somewhat in our estimates for 1980. It remains the same for 1981. The S&E money has been calculated to cover our projected needs for workyears. It is not more or less than we think is necessary to cover our needs at this point.

TOLERANCES PROGRAM

Mr. TRAXLER. The following sentences appears on page P–37 in connection with the 1980 tolerances programs. "In response to these recommendations, the Agency is now actively developing proposed program changes. Once these are agreed upon, additional resources may be required." How did the Interstate and Foreign Commerce Committee become involved with this question?

Mr. JELLINEK. That Subcommittee, which used to be chaired by Congressman Moss, and is now chaired by Congressman Eckhardt, has had a longstanding interest in the pesticide program, because one of the acts that we administer is the Food, Drug and Cosmetic Act, which is a Commerce Committee Act. That Act governs our tolerance-setting responsibilities and the Commerce Committee has for a number of years taken a close, careful interest in our tolerance activities.

Mr. TRAXLER. What program changes are under consideration in this area?

Mr. JELLINEK. The Science Advisory Board panel recommended a number of major changes in the way we calculate residue tolerances and the way we set average daily intakes of food. These changes are fairly technical, and involve different statistical methods of calculating the amount of food people intake, and a different approach toward safety factors in calculating intakes of food and the amount of food that we can permit people to eat with certain levels of pesticide residues on them.

When we get their final report, and as we analyze their recommendations, it may require some fairly significant changes in our tolerance-setting procedure. We don't know yet whether it is going to require significant additional resources, but we are just trying to warn you that it may, and if it does, of course, we will consult with the Committee.

RPAR DECISIONS

Mr. TRAXLER. From the program levels on page P–11, we see the final RPAR decisions in 1981 are estimated to be 15, the same as 1979 and 1980 current. However, on page P–38, we notice that funds for RPAR reviews increase from approximately $13 million in 1979 and 1980 to roughly $20 million in 1981. Deducting the $4 million requested for Silvex still leaves a considerable increase. How do you explain that increase?

Mr. JELLINEK. Two reasons. First of all, we have had more experience in doing these reviews; and secondly, we are getting into some of the tougher chemicals, the chemicals that involve more work, more analysis, and will therefore take more time and cost more. We are not able to say that each RPAR costs exactly the same as others. Some chemicals may have literally dozens and dozens of tolerances and maybe hundreds of uses. Reviewing that chemical is going to take more effort and time than a chemical that is fairly restricted in its application use. That is a general explanation. There may be a little inflation in there as well.

Mr. TRAXLER. Page P–39 of the justifications indicates that depending on the outcome of the court cases, the Agency may not be

able to produce the planned number of published standards in 1980 and 1981. What exactly do you mean?

Mr. JELLINEK. It goes back to my opening response to your first question. If the production of generic standards depends on our ability to rely on data introduced by registrants who believe that data is proprietary and if we cannot rely on that data, we will not be able to produce generic standards in the way we have proposed.

Mr. TRAXLER. How long before you receive the determinations from the court?

Mr. JELLINEK. Later this year, before 1981.

Mr. TRAXLER. Probably subsequent to our markup?

Mr. JELLINEK. Yes. Probably early in the fall. That is the best guess we have gotten from the lawyers. Once again, this is an attempt to alert you to a potential problem. We promise to come back and talk to you about it if the worst case materializes.

Mr. TRAXLER. We have some further questions dealing with the collection and disposal of Silvex, and we will postpone those until after the construction grant program. Mr. Coughlin has a particular interest in those questions also. We will recess at this time and return at 1 o'clock.

AFTERNOON SESSION

Mr. BOLAND. The Committee will come to order. We will turn to the construction grants program.

CONSTRUCTION GRANTS PROGRAM

You are requesting $3.7 billion for the construction grants program in 1981, an increase of $300 million above the 1980 estimate. The 1980 request of $3.8 billion was reduced $400 million by the Congress, partly because the program had developed very large unobligated balances from previous appropriations.

As the justifications have indicated, that situation has changed in the last year. The 1980 budget assumed 1979 obligations of $3.4 billion and an unobligated balance of $4.871 billion on September 30, 1980. Actual 1979 obligations were $4.257 billion and the current estimate for the September 30, 1980, unobligated balance is $2.893 billion. Is that correct?

Mr. BECK. That is correct.

Mr. BOLAND. The major reason the 1979 obligations were so much greater than expected was the tremendous level of activity in September of 1979. Is that correct?

Mr. BECK. There was a high level of activity through the summer, but yes, a tremendous amount of activity.

Mr. BOLAND. As a matter of fact, the obligations in September totalled $1.6 billion, or 33 percent of the year's action.

Mr. BECK. That is correct.

Mr. BOLAND. For the record, provide the number and amount of step 1, 2, and 3 awards for that period of time. Also, indicate the number of advanced water treatment projects that received final regional or headquarters clearance and were funded in September?

Mr. BECK. Yes.

[The information follows:]

STEP 1, 2, 3 PROJECTS

In September 1979, the EPA funded 187 Step 1 projects for $37 million, 173 Step 2 projects for $36 million, 414 Step 3 projects for $1.293 billion, and 121 Step 4 projects for $97 million (combination of Steps 2 and 3 grants). The remaining $182 million of the $1.6 billion funded in that month went for increases to previously funded projects. With respect to AWT review, EPA headquarters cleared 18 projects for funding in September, 1979. The regions have reviewed 178 AWT projects at a cost of $232.74 million from March through September, 1979.

ADVANCED WASTE WATER TREATMENT

Mr. BOLAND. Is there any indication that either regional or headquarters AWT reviews were compromised in the effort to obligate funds in September?

Mr. BECK. Absolutely not.

Mr. COSTLE. None. Mr. Chairman, normally that end of September date is significant in that funds that are not obligated by then can lapse or be reallocated. But the negotiations over these grants stretch back months.

Mr. BOLAND. Earlier in the fiscal year, the EPA estimated that several hundred million dollars might be available for reallotment as of September 30, 1979. However, only $25 million for one state, the State of Ohio, was actually reallocated. Is that correct?

Mr. BECK. Yes, sir.

Mr. BOLAND. In September 1977 the EPA—you were not there at that time, were you Mr. Beck?

Mr. BECK. I was watching it from a different part of the Agency.

Mr. BOLAND. In September 1977, the EPA dispatched some of its own employees to the states to accelerate the process and help insure that states would not lose money through the reallocation procedure. Let me ask you, did the EPA provide the states with any extra resources in September 1979 to expedite project applications?

Mr. BECK. Yes, we did.

Mr. BOLAND. How many states?

Mr. BECK. I don't know the exact states. I know where I was regional administrator we provided some of our key people to New York and New Jersey to assist them in developing projects.

Mr. LONGEST. The other state was Maryland.

Mr. BECK. There might have been some sporadic EPA assistance in some of the other states.

Mr. BOLAND. Have any September 1979 obligations subsequently been deobligated?

Mr. BECK. I don't think there have been any deobligations over the forecast of what we normally have. When we make a grant the projects need to go out to bid and that is where you get the precise number on what it actually costs.

Mr. BOLAND. I am asking whether any of the September 1979 obligations were deobligated?

Mr. BECK. What we have done is that we make grants to different projects and every one of them in our judgment were sound grants at what we judged to be the right level.

What tends to happen with regard to an obligation is that the grantee goes out to bid for the projects and sometimes the cost, because once you have bid the projects they alter a little bit and

there might be some slight deobligations, but nothing over normal operations and management of the program.

Mr. COSTLE. And nothing of special significance associated with those in September?

Mr. BECK. That is right. There was no attempt to obligate money for bogus projects, if that is what you mean.

Mr. BOLAND. You anticipated the next question because when you said, "Sound grants," I was going to ask whether or not you were satisfied that only quality projects received grant awards in September 1979. The answer is yes?

Mr. BECK. Yes, Mr. Chairman. One of the first things I did when I came in was ask for a re-review of those projects. I am satisfied that they were quality projects.

Mr. BOLAND. You agree with Chris, I assume Mr. Costle?

Mr. COSTLE. I would have not hired him if I didn't.

Mr. LONGEST. I think there is an important point on the deobligations. Now that we have obligated over $28 billion, the total amount deobligated represents only 4 to 5 percent. In addition, our records show that historically only 1.5 percent of the money obligated in the last month of a fiscal year was deobligated in the following fiscal year.

SEWER PIPE PROJECTS

Mr. BOLAND. How many sewer pipe projects were funded in September? For what amount? You may supply it for the record.

[The information follows:]

SEWER PIPE PROJECTS

In September 1979, EPA made total grant awards for all projects for $1.6 billion. Of this amount $1.147 billion, or 71 percent, was awarded to projects other than collection systems and major sewer rehabilitation. This compares with 53 percent made for such projects during the last two years. $457 million or 29 percent of the September awards was obligated for pipe projects in September. Thus, the September 1979 obligation total actually included a larger percentage of high priority projects than has been the norm over the last two years.

NEW YORK PROJECTS

Mr. BOLAND. How do you explain the New York situation. Governor Carey and Mayor Koch have been performing miracles up there right and left. You would know this too, probably better than anyone.

Mr. BECK. I was part of that miracle. In fact, maybe I could be referred to as the miracle worker.

Mr. BOLAND. Anyway, an unobligated balance at the end of the fiscal year of $220 million had been expected. You got it down to zero.

Mr. BECK. We were forecasting in the middle.

Mr. BOLAND. The actual balance of 1978 funds was zero, was it not?

Mr. BECK. That is correct.

Mr. BOLAND. Let me ask you why the EPA let New York buy $82 million worth of equipment for projects that won't be operational for years?

Mr. BECK. The reason for that, Mr. Chairman, is that probably the two highest priority projects in the United States of America are North River and the Red Hook in New York City. It has the largest volumes of raw sewage going into the waters of the United States from an environmental standpoint. The City of New York was in and under enforcement jurisdiction by us and we were negotiating an enforcement order with the City of New York in conjunction with the State of New York to force them to comply with the law.

When one looked at the allocation formula and the amounts of money available for the City of New York under what we presently had in the act, they came back and confronted us with the reality that if the State of New York lost the $228 million that they would never be able to get back enough money to build those projects.

So, we began to look very, very carefully at whether there was anything in those projects that we had design information on in step two that would be integral to any one of those projects. We were able to find major components of equipment that in fact are part of their secondary treatment plant and would be in all cases designed. We satisfied ourselves that they were the things that needed to be procured and it was based on that that we made the obligation of money.

Before making the obligation of money, Mr. Chairman, I came up and talked with key people on the Senate and House Public Works Committee with regard to their thought on the consistency of the Act. I was also quite concerned because at the same time I would be going through confirmation hearings and they embraced the principle that in fact it was a very serious problem.

I want to assure you, at no time was any determination made for political reasons. It was purely because of the responsibilities of the law and our perceptions of the needs there from a pollution protection standpoint. As a result, we were able to sign a court order and a consent decree that was agreed upon by the court which now holds the City of New York on a firm compliance schedule to meet the requirements of that law.

Mr. BOLAND. In terms of pollution control on line, wouldn't greater benefits have been received by using the funds for projects ready to be constructed?

Mr. BECK. The answer to that is that the project in North River and Red Hook would never have been on line, in fact, if we had not made this determination. I think the Agency has been on record in a number of forums saying that we think there ought to be changes in the reallocation formula and the time at which the money gets to the various states.

But with the constraints we presently have under the authorizing legislation, the Agency is obliged to use this system of obligating money.

Mr. BOLAND. When do you estimate the two projects in New York will be started and finished?

Mr. BECK. Red Hook, I believe the dates we have are somewhere around 1984 for completion and North River somewhere around 1989. That is not to say construction in these instances is not going forward. In fact, North River presently has a platform which the treatment plant will be built on in the Hudson River.

They are construction projects with very long lead times. They are the monsters of sewage treatment in this country. So, it is a long lead time but there is progression toward that.

Mr. BOLAND. As I understand it, the highest priority was attached to these two particular projects.

Mr. BECK. Absolutely. I felt very strongly from an environmental standpoint that these needed to go ahead. If the City of New York had its choice, I think they would have preferred to do nothing.

EXTENSION OF THE ALLOTMENT PERIOD

Mr. BOLAND. As the justification material indicates on page CG–1, one principal reason for extensive September obligations is that the Congress did not change the reallotment period as EPA requested from two years to three. Is that correct?

Mr. BECK. That is correct, and one of the reasons why so many of the projects moved in September was for that reason. People anticipated that they might have an extra year and when they found out they did not, the projects moved quicker.

Mr. BOLAND. Can you make a quantitative estimate of the effect of the two-year reallotment on September obligations? That is, if Congress had changed it to three years, how much less do you think September obligations would have been?

Mr. BECK. I could probably say that those projects that were obligated in September would have probably then been drawn out in a much more orderly pace over the fall. I don't think we could probably predict the exact number.

Mr. LONGEST. I would say it would be in the neighborhood of $600 or $700 million. We specifically asked the states the year before to plan on a potential extension for one year because we wanted to emphasize quality type projects, so the states were planning on a one-year extension.

Mr. BOLAND. What about the extenson of the reallotment period? Is this a recommendation that you have made or plan to make? What is the status?

Mr. COSTLE. We have made it and stand by it.

Mr. BOLAND. To whom did you make the recommendation? Is it before the House Public Works and Transportation Committee?

Mr. BECK. We made it last year on the 1979 reauthorization. We have reauthorization testimony next week before the House Public Works Committee and the following week before the Senate Public Works Committee, and that is one of the issues that we are presently making a final determination on.

IMPACT OF LEGISLATION CHANGES ON THE CONSTRUCTION GRANTS PROGRAM

Mr. BOLAND. Other possible legislative changes that could have a big impact on the operation of the construction grants program include changing the existing formula and creating a separate category of funds for big city projects. Of course, changes of this nature don't come under the purview of this Committee, but it would be interesting to hear your views.

Mr. BECK. The Agency right now, looking at 106 of the largest SMSAs in this country, knows that all of these are going to need investments of public works money. 73 of them are going to need pollution money for the purposes of getting up to secondary treatment. One of the things that we have done is to evaluate the needs of those 106 SMSAs and to juxtaposition them against the timing and allotment formula. The result comes up very deceiving.

We feel very strongly that if we are going to be dealing with a very tight budget, as we are in this request, with the same standards that are in the authorizing legislation for conformance with the effluent limitations there, that the reallotment formula needs to be re-examined and the timing by which the money goes forward needs to be re-examined. We have been on record saying that many times.

Mr. COSTLE. I guess the question in my mind, Mr. Chairman, is whether the Congress is ready to take on the allocation formula.

Mr. BOLAND. Why do you think that Committee isn't willing to take this on?

Mr. COSTLE. I think it is the complexity of it and they are trying to get a sufficient consensus in the Congress on what an alternative formula would look like. The thought that that might get so bogged down, it is just not feasible to do it.

1990 CONSTRUCTION GRANT STUDY

Mr. BECK. What we are doing, is putting together a complete and thorough diagnostic evaluation of a lot of facets of the construction grant program. It has become known as the 1990 construction grant study.

One of the major issues that we are dealing with is the funding issue. We have got a lot of public interest groups involved in it, and we are doing a lot of analysis. Our timing on the study is to have the funding issue done at the beginning of our next budget cycle.

So, we are planning in July, to do a complete rediagnosis. That is also tied to changes that we think need to be made in the authorizing legislation, not only for the issue of reallotment, but also how we are going to use water quality standards and a variety of other things.

Our intent is to have the funding issues done in the summer and the other aspects of the strategy done in the fall so that it would tie into a complete relook at the authorizing legislation next year. Right now, I don't think anybody really wants to handle the water bill for a complete new diagnosis at this point. So, we are preparing and doing that in great detail. It is now time. At $3.7 billion we are going to have to give up something.

Mr. COSTLE. Then there is the question that you raised at the start of these hearings about the new cut that is going on right now in terms of a balanced budget, what will happen to that $3.7 billion.

GAO STUDY OF CENTRAL TREATMENT FACILITIES

Mr. BOLAND. The General Accounting Office has been working on a report which questions building expensive central treatment facilities to correct insignificant water quality standard violations.

Although the report has not been issued in final form, I understand it is possible that it may contain a recommendation that Section 301(B)(1)(c) of the Federal Water Pollution Control Act, as amended, be changed to require a cost/benefit review.

This review would determine if advanced waste water treatment would result in significant water quality or health benefits. Additional amendment of Title II of the Act would be required so that the Federal government would only fund those projects in which benefits exceeded costs. Mr. Costle, what about your views on that proposal?

Mr. COSTLE. The thrust of the GAO report is essentially a challenge to some of the basic premises of the Act. The quarrel they have really is with Congressional intent. I really have some doubts in my mind about how practical a formal cost benefit evaluation would turn out to be, particularly because of the difficulty involved in trying to quantify benefits.

Right now the states have the right under the statute, based on their assessment of what they want to use a water body for, whether it is going to be for drinking water, recreation or whatever to make the judgment of how clean they want that water to be and then what level of treatment it is going to take to get to that point.

So, you have to, one, change the statute and, secondly, define a formal cost benefit mechanism. I don't know if you would define it in the same sense as we do water resource projects, dams and divisions where you have a set formula. I don't see how you do that same kind of formula in this area.

Mr. BOLAND. I don't think anybody can disagree with the fact that there would have to be substantial changes in the Act in order to accomplish some of the recommendations of the GAO.

Another possible recommendation of the report would be to amend Section 510 of the Act. Section 510 allows states to set effluent limits more stringent than those developed under water quality standards. One possible change to the law would be to make the states fund the cost of advanced treatment if they set effluent limitations which resulted in costs greater than benefits. If benefits exceeded costs, the Federal government would provide its share of the funding. Does that approach seem equitable to you?

Mr. COSTLE. Again, how do you measure and quantify the benefits?

Mr. BECK. I think that the problem in terms of the potential GAO recommendation is that if you have to document benefits before you go ahead with the cost, that is very, very difficult. On the other hand, I think that there is some latitude presently within the law which we are reasoning our way through right now. Basically, the law breaks into two parts.

It says we can design what we consider to be secondary treatment and there doesn't seem to be any problem in defining secondary treatment. Then it says that a plant can go to something beyond secondary if it needs to do that to meet water quality standards. The way the water quality standards section of the law is presently written, it says, "Fishable, swimmable streams where attainable." So, you can take a standard and write a criteria number.

We are reasoning our way through some opportunities that we have regarding attainability and how we would take that into account when we were making investments of money beyond secondary. We are doing that because we recognize that there are some real pressures with regard to the upper limits of our grant capabilities. The Agency's view is that we think AWT makes sense in certain instances. We think water quality standards are a vehicle by which we can determine where we should go beyond that, and we think that we need to do a little bit better job on how we improve standards and take into account the question of attainability.

In determining attainabiity, I think the Agency feels it would be very dangerous to go forward to a full cost benefit test. Then you are into a very, very difficult situation of making a benefit determination. It would just stymie our ability to go forward in certain instances to do that.

That is very much on our mind right now. It is something that we are wrestling with in regard to our anticipated reproposal of the 65 criteria. We therefore must make some determinations of where and how they ought to be adopted, and then to say if the states want to go to excesses beyond our criteria or adopt our criteria, how we will apportion the costs. But as to cost benefit, there is no question that we think that is important.

Mr. BOLAND. How much more difficult is it for the EPA to do cost/benefit analyses on these projects than it is for the Corps of Engineers to do it on theirs?

Mr. COSTLE. It is less the size of the project and more the intrinsic kinds of benefits that you are talking about. What is the benefit of a fishable, swimmable river, and how do you measure that, say, between Springfield and Hartford on the one hand and the Lomata River on the other? I don't think there is any easy way to come up with a formula.

Mr. BOLAND. Do you think every river ought to be fishable or swimmable?

Mr. COSTLE. If it could be. I don't think it can be. I think the states are reclassifying and classifying rivers according to feasibility in which implicit in that concept is economic impact, the feasibility of how much cleanup you can get for how much money expended.

In other words, the GAO seems to assume the states are just going hell bent for leather and will spend every dollar they can get. That is not the way we are seeing it happen.

EPA COMMENTS ON GAO REPORT

We sent a formal comment to GAO on their draft report. With your permission, I would like to submit it for the record.

Mr. BOLAND. Fine. We have a number of questions for the record, which deal with issues addressed in the draft GAO report, to be inserted at this point.

[The questions follow:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 5 1980

OFFICE OF
PLANNING AND MANAGEMENT

Mr. Henry Eschwege
Director
Community and Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We have reviewed the General Accounting Office's draft report, "Many Water Quality Standard Violations May Not Be Significant Enough to Justify Costly Preventive Actions." The opinion, expressed in the report, that the nation's water pollution control program is costly and complex is unassailable. The report's conclusions, however, appear to reflect a misunderstanding of the legislative objectives established by Congress in the Clean Water Act, and the primary recommendation fails to recognize the legal prerogative of states to define standards for protection of their waters which may exceed federal limitations. Congress clearly said federal water quality objectives are the minimum required, and that States may adopt more stringent standards of protection. We support the need for State discretionary authority in this area.

Recommendations calling for a moratorium on funding all variations of wastewater treatment beyond secondary are incompatible with the explicit Congressional intent to restore and maintain high standards of water quality nationwide. The report states the costs for meeting Congress' water quality objectives are not considered in the water planning process. This is inaccurate and moreover ignores the process by which States are required to consult with their citizens when proposing stream use designations, water quality standards, and treatment systems designed to have discharges compatible with water quality standards.

In many instances the States are adequately demonstrating that treatment beyond secondary is needed and represents a cost effective solution for reducing pollutant loadings to our waterways. EPA is screening State proposals seeking funding for advanced wastewater treatment processes. Our screening initiatives follow the directives established by the Appropriations Committees, and the review has resulted in considerable savings to the Federal Government and to local taxpayers that would have paid higher treatment plant operating costs had unneeded AWT proposals been funded.

The GAO report, based largely on an incomplete analysis of how AWT proposals are being reviewed by EPA, fails to note that we deleted or deferred funding for 23 out of 50 AWT proposals submitted by the States for review through December 31, 1979. After thorough analysis of these 23 projects we determined that sufficient documentation was not presented showing AWT processes were needed to meet water use designations. These AWT systems were not funded as proposed, saving $90.2 million in unneeded expenditures. We are now reviewing twenty-four additional AWT proposals. We believe that a complete analysis of our funding determinations shows EPA is prudently managing construction grant expenditures and is following the Appropriations Committees' directives to require sufficient documentation and fund only cost effective AWT processes.

We agree with the report's conclusion that the water quality planning process is complex, and that the maximum benefit should be sought for each water pollution control dollar spent. The opinion advanced, however, that some streams should not be protected from degradation because they are not "socially significant" is not a discretionary area for administrative determination. Congress clearly states in the Clean Water Act that all waters, regardless of location or accessability, should be protected from pollution and restored, if possible, to natural conditions. We agree with this Congressional determination to restore and maintain the quality of all of the nation's waters and have designed the national water quality regulatory strategy to achieve these national objectives as defined by Congress. Further, we must take serious exception with a GAO report which seems to be aimed primarily at excoriating the Agency for a faithful interpretation and implementation of federal law.

The draft report suggests EPA should ignore the Congressional objectives as defined in the Clean Water Act and encourage States to downgrade use designations and water quality standards. This position is supported by GAO's conclusion that imprecise models are being used as the basis for water quality standards, and that models are not a valid basis for determining effluent limitation requirements. Few models, even very expensive and refined models, can absolutely duplicate a complex natural system and conclusively predict how man's activities affect that system over time. Ample analytical techniques exist, however, and sufficient information is available to make informed judgments. All scientific opinions include a degree of uncertainty, and scientists will interpret the same data differently. In our water program we question the reliability of both modeling and scientific opinion, and the agency makes every effort to assure both are reasonably accurate.

The draft report's conclusion, however, that the agency's process for approving water quality downgradings is too rigorous seems incompatible with the point advanced on modeling. EPA has a policy on downgradings, and additional guidance is being prepared for use by the States which will amplify what factors must be considered so downgrading requests are adequately and

successfully justified. Generally, our policy requires that States demonstrate designated water uses and established water quality standards cannot be achieved because of economic hardships, natural conditions, or irreversible man-induced activities. Models are useful to States trying to meet these requirements, but they must be documented.

GAO appears to be advocating that we require scant documentation for supporting water quality downgradings and absolute documentation to support efforts aimed at achieving high water quality. Our position is to require adequate documentation to support both water quality downgradings and efforts to improve water quality. Eight States have sought water quality standard or stream use designation downgradings within the past two years. EPA found in one case that adequate justification was presented to approve the downgrading request, and we are reviewing the seven other downgrading requests. EPA will continue to review water quality standards and stream use designations, but the Clean Water Act requires we strive for high water quality within limits of natural conditions.

We appreciate the opportunity to comment on the draft report.

Sincerely yours,

BILL DRAYTON

William Drayton, Jr.
Assistant Administrator
for Planning and Management

60-531 O - 80 - 17

Water Quality Flows

QUESTION:

Pollution from waste treatment plants generally has more of an adverse impact on water quality and uses during low flows than high flows. Waste treatment plants are generally being designed to prevent water quality standards from being violated during the 7 day 10 year low flow. The 7 day 10 year low flow may be occurring, however, only 2 percent of the time. If there is not a significant adverse impact on water quality and uses by using another low flow such as a 6 day 9 year low flow, the Federal Government could reduce the amount of construction grant funds appropriated each year.

What would be the impact on a) water quality and b) water uses if waste treatment plants were designed for a low flow higher than the 7 day 10 year low flow?

ANSWER:

Water quality as measured in a chemical sense would reflect the proportionate increase in pollutant concentrations. The increased pollutant loads would be the ratio of the adopted design flow to the 7Q10 flow. The effects of the pollutant increases impact uses are discussed.

The fishable-swimmable goals of the Clean Water Act are directly impacted by the designation of a design flow for allocating waste loads. There are two principal concerns. First, the recreational uses of streams occur principally during the summer-fall low flow season. Therefore pollutant effects are maximum when the public desires to use the water. Second, resident biological assemblages reflect the worst conditions that appear in streams rather than average conditions. Increased pollutant loads may only cause significantly deteriorated water quality conditions for a short period but that may be sufficient to substantially reduce or eliminate the pollution-sensitive sport fishery. It has been found that many pollutant impacts on stream life reflect the most stressful condition and not the average. For example, fish growth is controlled by the daily minimum dissolved oxygen concentration, not the daily mean concentration.

Experience has shown that the achievement of water quality standards at the 7Q10 flow rate provides the continuity necessary to maintain aquatic life at even more severe drought flows and satisfactorily protect stream uses over time.

Predicted and Actual Water Quality

QUESTION:

There seems to be a substantial amount of uncertainty surrounding what happens to water quality as pollution loads are increased or decreased. Mathematical modeling is being used to justify AWT and project what happens to water quality under various pollution load conditions. If mathematical modeling is not substantially eliminating the uncertainty, maybe less funds should go towards AWT until more certainty is achieved.

Has the Agency ever compared what some models predicted would happen to water quality to what actually happened? If so, how much variance was there? If not, why hasn't such a comparison been made to determine how effective modeling really is?

ANSWER:

Independent studies have been conducted to estimate the difference between predicted and actual water quality. For example, one recent study of the validity and credibility of a large number of calibrated and verified models of dissolved oxygen found that the median relative error between predicted and observed values was about 10%. The adequacy of a given water quality model as a tool in the decision-making process is generally established in several ways. When a water quality model is first developed, as a general tool, it is generally subjected to validation tests to ensure that it appropriately and adequately represents the real system being modeled. Next, when the model is used to analyze a specific waterbody, the model is calibrated and verified to ensure that the model reliably simulates the specific waterbody being studied. Calibration is used to match the model with existing conditions, while verification is used to check the performance of the model with different conditions, different stream flows.

Reclassifications

QUESTION:

At the present time the types and degree of information EPA requires for downward re-classifications varies. It seems somewhat inappropriate for EPA to require an extensive amount of information to downward reclassify a stream when it did not require the same amount of information when the use classifications were originally set.

What are the types and degree of information required from states that EPA would be satisfied with to justify downward reclassifications? How can EPA revise its downward reclassification review process to eliminate situations where states decide not to request any downward reclassifications of uses because of the expensive time-consuming process involved?

ANSWER:

EPA requires States to justify downward reclassifications based on:

1) Natural background conditions
2) Irretrievable person- induced conditions; or
3) Widespread and substantial adverse social and economic impact.

There have been very few such reclassification requests to date under 1) and 2). In response to those under 3), the Agency requires that both an environmental and economic analysis is used to compare the environmental benefits which may be lost to any cost savings associated with a less stringent use classification. On small streams with few point sources, the analysis may be completed in a few days. In more complex situations, such as a valuable estuarine shellfish producing area, a more complex and, therefore, more costly study may be required.

The Agency is presently preparing additional guidance to the regions and States. This guidance will delineate the type and amount of economic information that States should collect in support of an economic downgrading request. This will have the effect of clarifying the requirements and will insure more consistent and expedited decisions among the ten EPA Regions. The draft guidance document will be available in the next two or three weeks.

Fishable/Swimmable Goal

QUESTION:

There seems to be some question concerning what level is adequate to meet the fishable/swimmable goal. If the nation can substantially achieve this goal with a D.O. minimum of 4 mg/l and daily average of 5 mg/l, a substantial amount of Federal funds could possibly be saved by not requiring a minimum D.O. level of 5 mg/l. Thus, waste treatment plants could be designed to remove less pollutants without adversely impacting on the fishable/swimmable goal.

Why does EPA headquarters recommend a minimum of 5mg/l D.O. when at least two EPA regions, in contrast, recommend minimums of 4 mg/l and daily averages of 5 mg/l?

ANSWER:

The minimum 5 D.O. criterion was established for the protection and propagation of fish based on the most recent scientific information available.

EPA headquarters has recommended regional disapproval of 5 average/4 minimum D.O. criteria that are not adequately justified and will continue to require environmental and scientific data that documents the validity of less stringent criterion. If sufficient data are presented to justify revising the 5 minimum concentration for all warm water fish species, then the Agency will change the existing requirement. Until that time, all deviations from the 5 minimum criteria must be justified on a case-by-case basis.

It should be emphasized that EPA does recognize that fish can survive at lower D.O. concentrations and, in fact, promulgated a 5 average/4 minimum D.O. criterion for Mississippi. This criterion was based on evidence that natural waterway conditions, particularly high temperature, precluded attainment of the 5 minimum criterion year-round indigenous fish had adapted to the lower D.O. levels and could propagate and live under a less protective condition.

Needs Survey

QUESTION:

Waste treatment plants designed to meet a minimum of 5 mg/l D.O. have to be built so that the water quality never goes below 5 mg/l D.O., for a certain length of time. If the plants are designed to meet an average D.O. of 5 mg/l, the D.O. level can drop below 5 mg/l for some parts of the day. If the drop in D.O. level does not affect the fishing/swimming goal, a substantial amount of Federal funds going to AWT can be saved by designating less sophisticated plants.

Is the $10 billion estimated to be required in the Needs Survey for AWT based on meeting a minimum or average of 5 mg/l D.O.? If based on a minimum, how much above the $10 billion will be needed?

ANSWER:

The 10 billion estimate is based primarily on meeting an average D.O. of 5 mg/l. If based on a minimum, the estimate would increase to about $12 billion.

The Agency's current position is that the minimum D.O. standard should not be violated at any time. Using this approach, it is therefore necessary to design to achieve an average daily D.O. somewhat higher than the minimum. For example, if the minimum D.O. standard is 5.0 mg/l, a facility would ordinarily be designed to achieve a 6.0 mg/l D.O. This 1.0 mg/l difference when reflected in the water quality analysis, will result in much more stringent treatment levels.

In practice, the water quality analyses and resulting treatment levels are often based directly on a daily average D.O. of 5.0 mg/l despite the current Agency position to the contrary.

This issue is currently under review and Agency guidance will be issued shortly.

The assumption that the fishing/swimming goal is not affected if the D.O. level falls below 5 mg/l is falacious. Plants designed to achieve a lower average will have a negative impact on fish. In fact, any reduction, whether an occasional variance to a D.O. of 5 mg/l or a lower average D.O., has some adverse effect. Laboratory evidence shows that various life processes of fish are detrimentally affected whenever the oxygen dissolved in the water is less than saturation. The damage increases as the D.O. is reduced to the point where rapid death occurs from suffocation. Obviously a lethal depression of D.O. must not occur at any time of the day. EPA believes that a minimum

dissolved oxygen concentration of 5 mg/l, while not optimium, provides protection for the most oxygen-sensitive life stages: reproduction and fry rearing. EPA requires the States to have a water quality criterion in their standards of a minimum of 5 mg/l, except in cases where a lesser criterion is justified. Several EPA Regions have approved dissolved oxygen criteria of an average of 5 mg/l with a minimum of 4 mg/l where justified.

Pollution Duration

QUESTION:

EPA presumes that the concentration of a pollutant in a stream will always be the same. Waste treatment plant costs may be reduced, however, if higher concentration levels occurring infrequently still allow the fishable/swimmable goal to be met.

Why does EPA's criteria presume continuous exposure when in reality we know that exposure of pollutants vary in duration, intensity, frequency, and extent?

ANSWER:

The criteria are developed on laboratory data which utilize continuous exposure of species to a pollutant at a uniform level. However, the ambient in-stream criteria are expressed both as a 24-hour average and an instantaneous maximum. This does allow for fluctuations in pollutant concentration, duration of exposure, and frequency of occurrence within a 24-hour period. Therefore, the criteria do recognize pollution duration, intensity and extent.

Unverified Water Quality Monitoring

QUESTION:

Models are verified to determine the reliability of proposed AWT effluent limits on water quality. If models are not verified, AWT may be required without a strong assurance that such treatment will significantly improve water quality.

Would EPA accept an effluent limitation that was determined by a model that was not verified? If so, under what specific conditions?

ANSWER:

In general, EPA requires verified models or the equivalent for high levels of municipal treatment, e.g., BOD removal to less than 10 ppm. However, EPA will accept effluent limitations for less stringent levels of treatment based upon unverified water quality modeling if the discharge is into an effluent dominated stream and if the POTW has a design capacity of less than 10 MGD. When these two conditions are met, a simplified water quality analysis may be performed using limited field data and available information on decay rates, combined with a sensitivity analysis to ensure that adequate data is available for an informed decision.

Since our review of advanced waste treatment projects has indicated that some projects do not have adequate water quality analyses, EPA is developing better program guidance to States and Regions for conducting wasteload allocations and for calculating total maximum daily loads.

Ammonia - Toxics List

QUESTION:

Some States and local government officials have expressed concern that EPA's proposed toxicity standard will require more sophisticated and costly waste treatment. There is considerable debate that the standard will improve water quality and enable the nation to meet the fishable/swimmable goal. Thus, unless the ammonia standard substantially improves water quality, more construction grant funds will be spent than needed.

Has EPA determined what the economic impact will be if its proposed ammonia toxicity standard is implemented? If not, why is EPA proposing such a change without first evaluating what such an impact will have on the American public? If yes, what will be the increase in number and cost of AWT facilities needed to comply with the change?

ANSWER:

EPA has proposed adding ammonia to the section 307(a) toxics list. Pollutants are added to this list solely on the basis of toxicity, presence, or a number of other environmental factors. Although pollutants which are identified on this list are given priority consideration for regulation, adding a pollutant to the list has, in itself, no direct economic or regulatory effect other than precluding the availability of economic or environmental variances for industrial dischargers.

Regulation of the pollutants on the 307(a) list is a separate action which will require a technical and economic impact analysis.

Phased Construction of Plants

Question:

EPA is requiring phased construction for the larger AWT plants. It seems reasonable that EPA would want to test the impact that various AWT processes might have on water quality for smaller plants as well. In this way, the Congress will have better information on the cost/benefits of each AWT process and how such processes will improve the overall water quality of the Nation.

Why doesn't EPA require more phased construction in view of the uncertainty surrounding water quality and public health benefits?

Answer:

EPA allows but generally does not require phased construction of either large or small advanced treatment plants. Such phased construction may be necessary, however, if EPA funding of certain advanced treatment processes such as filtration is deferred pending further water quality studies or other justification as a result of advanced treatment project reviews.

Phased construction of advanced nitrification processes is usually neither practicable nor cost effective. Nitrification usually reduces dissolved oxygen demand of effluent and reduces effluent contribution to ammonia toxicity. In comparison to secondary treatment, it costs less on a milligram per liter of oxygen demand removed basis and it has a relatively low proportion of overall capital costs. At a relatively low cost, nitrification can significantly enhance water quality by increasing dissolved oxygen resources and reducing ammonia toxicity.

In addition to the high benefit per dollar expended for nitrification, EPA found that it is often costly or cumbersome to phase in nitrification as a later construction project. Adding a separate nitrification process to a secondary facility later will cost much more than designing for and constructing nitrification and secondary treatment at the same time because designing for nitrification initially requires only relatively low cost design changes of the secondary treatment aeration facilities. For small community systems especially, either oxidation ditches or ponds can be designed initially to provide for nitrification at very small incremental costs. Costs of adding nitrification later, if found to be necessary, are much greater

A tertiary filtration process, as an add-on to nitrification, generally costs far more on both absolute and per unit oxygen demand removed bases than nitrification. Thus, EPA headquarters has already directed the regions to defer construction of filtration unless and until sound water quality analyses fully justify such advanced treatment.

AWT REVIEW PROCESS

Mr. BOLAND. Let's talk a few minutes about the AWT review process. It was initiated, of course, in response to the conference report accompanying the 1979 HUD-Independent Agencies appropriations bill. The final procedures were issued March 1979, so they have been in effect just about one year. How many projects have been reviewed at headquarters in this time?

Mr. BECK. 52.

Mr. BOLAND. How many were rejected or sent back for further justification?

Mr. BECK. 11.

Mr. BOLAND. What dollars savings can you attach to the review process?

Mr. BECK. $90 million, but that is not a true dollar savings. It was $90 million in costs that we deferred. If those projects go forward, they will cost money. Also, with the delays required for reviewing the 52 projects, we estimate the figure at $93 million in inflationary costs.

Mr. BOLAND. For the record, provide the same information for the regional reviews.

Mr. BECK. Yes, sir.

[The information follows:]

REGIONAL AWT REVIEW

The Regions have reviewed 178 AWT projects through September 1, 1979 at a cost savings of $28.64 million.

Mr. COSTLE. Mr. Chairman, if I could add a couple of comments on this. We have, as you know, instituted that intensive review. Those projects with incremental costs of $1 million or greater are reviewed at headquarters and all others in the regions. Chris gave you the basic figures. I don't think there is any question that the reviews have helped scale back some project components on the basis that they were not justified, and it caused the regions clearly to be more rigorous in their reviews and project assessment.

As Chris knows, it has markedly slowed down the program. Each project has been delayed an average of about four months. Our estimates indicate that the inflationary costs of these delays on purchasing power of the grant dollar are about equal to or may exceed the amount of money saved by deferrals.

Mr. BOLAND. I take it from what you have just indicated that inflationary increases approximate savings?

Mr. COSTLE. Well, that is what we are afraid that it might be.

Mr. BOLAND. But for the future, it is significant.

Mr. COSTLE. Yes. I would also advise you, Mr. Chairman and the Committee, that these reviews have been challenged in court and serious questions have been raised about our legal authority to conduct a review of AWT projects.

Mr. BOLAND. What is the status of the court case involving the Galesburg, Illinois, project?

Mr. BECK. There are negotiations going on today between the Department of Justice and our people and the Attorney General's staff. So it is a very delicate time obviously for us to talk about that.

Mr. BOLAND. What is the total size and cost of that project as designed?

Mr. BECK. We will submit that for you for the record.

[The information follows:]

SIZE AND COST OF GALESBURG PROJECT

The Advanced Treatment Project at Galesburg, Illinois is a 10.7 m.g.d. plant costing $29.5 million.

Mr. BOLAND. Can you indicate what the cost would be if it was without AWT?

Mr. BECK. Yes.

[The information follows:]

GALESBURG WITHOUT AWT

The cost for Galesburg without AWT would be $21.4 million.

LOCATION OF AWT PLANT

Mr. BOLAND. Is it on a particular river?

Mr. LONGEST. It is not a large river. It is a small stream.

Mr. BOLAND. How large is Galesburg? You may supply that for the record.

Mr. COSTLE. We will come up to you forthwith with the recommendations on what the statutory implications of that are.

[The information follows:]

LOCATION OF GALESBURG PROJECT

Galesburg's 1975 sewered population was 38,100. By 1995 that population is expected to be 48,000. The city of Galesburg is located on Cedar Creek.

GALESBURG AWT REVIEW

Mr. BOLAND. Why did the AWT review process reject it originally?

Mr. BECK. The reason for the review process rejecting it was a question of the adequacy of the documentation that the project was needed to meet the adopted water quality standard.

So, it went basically to the modeling effort that correlated the relationship of the effluent from the plant to the receiving water and its ultimate impact.

Mr. COSTLE. Mr. Chairman, parenthetically, if it would be all right with you, I would like to send up a note following up on our discussion about the benefits, the difficulty of doing benefits analysis in this area, so that you will have a little more thoughtful exposition of it in the record.

[The information follows:]

AWT REVIEW PROCESS

In order to evaluate the potential improvement in water quality that may occur as the result of a given treatment level, mathematical model simulations are performed.

The accuracy or certainty of predicting the impacts of waste discharges is limited by the following considerations.

1. The natural aquatic environment is a very complex system in which a large number of factors govern the physical, chemical and biological processes;

2. Mathematical water quality models are tools which approximate real world conditions and thereby allow us to analyze complex natural processes in a relatively simple and manageable manner;

3. Due to the lack of understanding of certain natural processes, some assumptions must be incorporated into the predictive analysis;

4. In some cases, ambient water quality data is either limited or is not entirely appropriate for input into a complex model. In other words, the model predictions are only as accurate as the quality and quantity of the input data which in turn may be limited by the resources available.

5. Water quality impact predictions are tested (verified) with existing data which may or may not be representative of conditions existing in the future.

Given these limiting factors, present modeling techniques, if carefully done, permit a realistic assessment in most cases of beneficial water quality impacts of a given treatment level.

Mr. BOLAND. Did the Agency answer the Galesburg complaint by February 26, as required?

Mr. BECK. A representative of the General Counsel's Office is in the room, and she indicates that we have answered it.

Mr. BOLAND. Let me make this statement in reference to the case. The major issue of the Galesburg case is that Illinois developed water quality standards which the U.S. EPA approved and that EPA issued National Pollutant Discharge Elimination System permits which set forth effluent limitations for the Galesburg plant which can be met only by treatment greater than secondary. The easy course of action for EPA in the Galesburg case or in similar situations that may arise is to assume that the standards are correct and that the effluent limitations contained in the NPDES permits must be met to ensure no violation of the standards. That course will lead to the construction of many expensive treatment facilities which may not be necessary.

What we are seeing from work performed by the General Accounting Office, the Committee's Investigative Staff, outside consultants and the Agency itself is that a thorough review is needed of all the factors which lead to the construction of expensive AWT projects. Do you agree with that?

Mr. BECK. And prospectively it is extremely important that we do that.

Mr. BOLAND. I know that the Agency has developed a National Municipal Policy and Strategy which addresses some of these issues. But it seems the policy document is too narrowly focused to be truly effective. Would you agree?

Mr. BECK. The municipal strategy that has been developed covers six categories. Those six categories cover all the various potential classes that a municipality can fall into.

Going from your previous question to what I think is implied in the second question that what we need to do is go out and amplify how on the revisions of permits prospectively there needs to be a much more careful analysis of the cost implications in the municipal treatment plant, a much more careful analysis to make a determination that when the permit is written it is truly needed to meet the water quality standards, and a much more careful analysis prospectively when there are revisions of water quality standards that they are truly needed and attainable.

It is that that we understand through this process and it is that that we agree we should do. We will be amplifying that in our policy guidance and directives to the programs to accomplish this.

Mr. MILLER. There are severe limitations to that in permitting in that if a state is issuing the permit there is no way that we can object to the issuance of the permit because we think it is more stringent than necessary to meet water quality standards.

If we are issuing the permit, a state may by certification under Section 401 require limitations that are more stringent than we might think are necessary to meet water quality standards. So, under the present law we are extremely limited on how well we can fight them.

NATIONAL MUNICIPAL POLICY AND STRATEGY

Mr. BOLAND. What has been the response of State groups to the policy?

Mr. BECK. Are you talking about the municipal enforcement strategy or the AWT review?

Mr. BOLAND. The National Municipal Policy and Strategy.

Mr. BECK. I think that part of it has been pretty favorable.

Mr. COSTLE. They sought some clarification. They said you have enforcement on the one side and telling us we have obligations, but you have a grant program on the other hand that has the keys to the bank in terms of our being able to solve that problem. So, the response I have gotten personally has been very positive. It is obvious that EPA has tried to put the two halves of this thing together.

REALISTIC GOALS FOR WATER QUALITY

Mr. BOLAND. What about the Association of State and Interstate Water Pollution Control Administrators' recommendation that the 1983 "fishable and swimmable" goal and the 1985 zero discharge goal be amended to something more realistic. Would you agree with those recommendations?

Mr. COSTLE. I think just about everybody is skeptical that we will ever get to zero discharge. The real argument is how useful it is to have that target in the Act. "Fishable and swimmable," that is a desirable objective. It should be reachable in most cases in this country. There are clearly going to be rivers, simply because of their industrial character, on which that is going to be very, very hard to achieve.

Mr. BOLAND. By 1983?

Mr. COSTLE. By 1983 or 1985 or probably 1990.

Mr. BECK. In fact, the Act speaks of it only as a goal and it states after "fishable and swimmable," the words "where attainable."

Mr. COSTLE. That is the real limiting factor.

OBLIGATION OF CONSTRUCTION GRANTS

Mr. BOLAND. Page CG-3 of the justifications indicates that there are 17 or more states that will obligate all funds available to them in 1981. Provide for the record a list of these states. Also list all the states which obligated 75 percent or more of 1979 funds by December 31, 1979, and the state's EPA estimates will obligate 90 percent of 1979 funds by March 31, 1980.

Mr. BECK. Yes, we will.

[The information follows:]

CONSTRUCTION GRANTS OBLIGATIONS

The 17 States that will obligate all funds available to them in fiscal year 1981 are Arizona, California, Connecticut, District of Columbia, Louisiana, Maine, Maryland, Mississippi, Montana, Nebraska, New Hampshire, Oregon, Rhode Island, Washington, West Virginia, Wisconsin, and Wyoming. In addition, 2 trust territories, American Samoa and Northern Mariana Islands will also obligate all available funds in fiscal year 1981.

The 12 States and territories that obligated 75 percent or more of their 1979 funds by December 31, 1979 are Arizona, California, Illinois, Mississippi, New Hampshire, Northern Marianas, Oregon, Pennsylvania, Rhode Island, Virginia, Virgin Islands and Washington.

We estimate that 19 States and territories will be using 90 percent or more of their fiscal year 1979 funds by March 31, 1980: American Samoa, Arizona, California, Illinois, Maine, Minnesota, Mississippi, Nebraska, New Hampshire, Northern Marianas, Oregon, Pennsylvania, Rhode Island, Trust Territories, Vermont, Virginia, Virgin Islands, Washington and Wisconsin.

STATES ASSUMING DELEGATION

Mr. BOLAND. The 1979 amendments to the Water Act authorized the use of construction grant funds to pay for administrative expenses of states assuming delegation under the program. How many states have assumed delegation?

Mr. BECK. We have delegated to 32 and we expect ten more potentially will take the program in the next year.

Mr. BOLAND. Will you provide for the record a table which indicates when States received partial and/or full delegation? Also, indicate by state, the amount of 205(g) funds in 1979, 1980 and 1981?

Mr. BECK. Surely. I think this is probably a misnomer in the way we use the terms. 32 states have agreed to accept delegation. It will take them many years to get the full delegation.

It is an agreement to delegate that we have signed with 32 states and an agreement to delegate that we anticipate signing with another ten states, but there are one or two states that are fully delegated at the present time.

[The information follows:]

State Delegation of Administration of EPA Construction Grant Program

	Delegation Agreements Signed	Grant Funds Available Under Section 205(g) ($000) FY 1979	FY 1980	FY 1981
TOTALS	33			
REGION I				
Connecticut	6/1/79	917	742	808
Maine	4/16/79	621	503	547
Massachusetts	9/21/79	2,447	1,981	2,156
New Hampshire	10/6/78	730	591	643
Rhode Island				
Vermont	5/11/79	414	335	365
REGION II				
New Jersey	9/26/79	2,958	2,395	2,606
New York	12/26/78	8,798	7,122	7,751
Puerto Rico				
Virgin Islands				
REGION III				
Delaware				
Maryland	1/10/79	2,301	1,863	2,027
Pennsylvania	7/2/79	3,612	2,925	3,183
Virginia				
West Virginia	7/11/79	1,483	1,200	1,306
Dist.of Columbia				
REGION IV				
Alabama				
Florida				
Georgia	10/26/78	1,608	1,302	1,417
Kentucky				
Mississippi	12/12/79	800	648	705
North Carolina	12/26/79	1,640	1,328	1,445
South Carolina	3/15/79	975	789	859
Tennessee				
REGION V				
Illinois	8/3/78	4,303	3,483	3,790
Indiana				
Michigan	3/30/79	3,422	2,770	3,014
Minnesota	3/14/79	1,548	1,253	1,364
Ohio				
Wisconsin	10/2/78	1,616	1,308	1,423
REGION VI				
Arkansas				
Louisiana				
New Mexico				
Oklahoma	2/29/80	769	622	677
Texas	9/8/78	3,614	2,926	3,184
REGION VII				
Iowa				
Kansas				
Missouri	5/30/79	2,067	1,674	1,821
Nebraska	7/31/79	456	369	402
REGION VIII				
Colorado	9/27/79	761	616	670
Montana	7/9/79	414	335	365
North Dakota	8/17/79	414	335	365
South Dakota	4/6/79	414	335	365
Utah	9/27/79	414	335	365
Wyoming	5/21/79	414	335	365
REGION IX				
Arizona	3/29/79	643	520	566
California	8/17/78	6,586	5,332	5,802
Hawaii				
Nevada				
American Samoa				
Tr.Terr.of Pac.Islds.				
Guam				
REGION X				
Alaska	12/7/78	414	335	365
Idaho	3/5/79	414	335	365
Oregon				
Washington	8/17/79	1,465	1,186	1,291

DELEGATION PROVISION IN AMENDMENTS

Mr. BOLAND. Can you provide a brief background of the delegation amendment?

Mr. BECK. Well, it was one of the major changes that came out of the mid-course correction in the 1977 amendments. There were strong views in the Senate not necessarily wanting states having a predominant role here and the House feeling otherwise.

I think one of the other things that was increasingly true is that as we began to look at our ability under Section 106, the grant program in the Clean Water Act, for the states to do anything adequate with those sums of money, that it became clear that there needed to be some additional vehicle for getting funding. That didn't become apparent until 1976 or 1977. It was then recognized by the Congress and dealt with in a total sense.

Mr. BOLAND. Does EPA favor tying the 205(g) to the authorized level of funding?

Mr. BECK. No, but we recognize that 205(g) tied to low appropriation levels does not allow some states sufficient funds.

CORPS OF ENGINEERS AGREEMENT

Mr. BOLAND. EPA is spending about $22 million yearly for an interagency agreement with the U.S. Army Corps of Engineers. How is the agreement working? Are you satisfied with the support you are getting from the Corps?

Mr. BECK. We are very satisfied.

Mr. BOLAND. How many workyears did EPA get from the Corps in 1979?

Mr. BECK. 460 workyears.

Mr. BOLAND. How did that compare with your plan?

Mr. LONGEST. The agreement is for 600 workyears. That is our goal, but we have not been able to work up to that goal.

Mr. BOLAND. There is no way you can do this job without the Corps, is there?

Mr. LONGEST. That is correct. We rely on them in particular on Step 3, initial construction. Initially, the states were hesitant about the Corps coming in, but now we are getting positive feedback. Some of the states that were strongly against the Corps are now coming to us saying they would like to have the Corps involved in the Step 3 work.

Mr. BOLAND. How many workyears are you paying for in fiscal year 1980 and 1981?

Mr. BECK. 540 in 1980 and 580 in 1981.

Mr. LONGEST. So dollarwise it will be approximately $22 million in each year.

RECOVERIES IN CONSTRUCTION GRANTS

Mr. BOLAND. Last year the Committee's investigative staff raised serious questions concerning the high level of recoveries and the long delays between Step 3 award and start of construction for the certain projects. The justifications under municipal source control indicate obligations from recoveries were $377 million in 1979, well above the plan. The justifications also address the problem of pre-construction lags. It does not appear that you have made much progress in these areas in the past year. Would you agree?

Mr. LONGEST. We have made significant progress in the lag area. It peaked about 18 months ago. The total dollar amount of projects not under construction within six months was up to $2 billion. We managed to get it to a low of $700 million. Currently it is at $900 million. Our goal has been 10 percent of the 1978 obligation, which would be $450 million. If we could maintain that lag, we feel we would be doing very well. So, there has been significant progress, but we have a lot more work to do.

Mr. BECK. There is probably one other thing that will influence it rather dramatically; that is, that as the economy becomes more difficult for the construction industry they are likely going to move in more aggressively with regard to using the sums of grant money. The slowdowns in the construction sector that we are anticipating will also influence very dramatically the movement of money more quickly toward the sewage treatment program.

GAO REPORT ON CONSTRUCTION GRANTS

Mr. BOLAND. In a November 16, 1979, letter report to the Administrator, the General Accounting Office stated that the Agency, "Does not evaluate the adequacy of the warranty provisions of contracts awarded by grantees for equipment and supplies used in constructing treatment facilities or how well grantees exercise their warranty rights." Has the Agency developed its own guidelines and regulations to redress this particular issue?

Mr. LONGEST. We are currently working on that as a result of the GAO report. The interesting thing here is that many times the warranty runs out after the project has been closed out. In other words, we have backed off from the project, we have made the last payment, and the audit is complete and the facility belongs to the grantee. So, it has been difficult on our part to find resources and also to have the legal liability to go back into that project once we have closed it out.

Mr. BOLAND. Do you have any estimate of the cost grantees have absorbed repairing equipment under warranty that should have been borne by either the general contractor or the equipment manufacturers?

Mr. LONGEST. No, sir.

COST ANALYSES

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you very much, Mr. Chairman.

I was necessarily absent during the time in which you discussed the forthcoming General Accounting Office report. You do not now prepare cost benefits analysis for various waste water treatment proposals?

Mr. COSTLE. Not in any formal sense as is used, for example, by the Corps of Engineers and the Bureau of Reclamation.

Mr. BECK. In the Step 1 planning process, which is the preliminary step before going to design, we evaluate a whole variety of treatment alternatives and treatment cost alternatives as well as what will be derived in terms of different levels of pollution reduction.

Mr. COSTLE. We do cost effectiveness studies.

Mr. COUGHLIN. What is the difference between the cost effectiveness study and the cost benefit study?

Mr. COSTLE. I think cost benefits is a kind of magic word that means different things to different people. We do do analysis, of course, of alternative forms of treatment to achieve alternative levels of pollution reduction.

What I think of as a formal cost benefit is that you have a column over here that says costs and a column over here that says benefits.

The point I made earlier when the Chairman asked a similar question is that it is very hard to quantify the benefit side of that scale in order to construct it in a manner similar to the way the Corps of Engineers or the Bureau of Reclamation does cost benefit analysis on water resource projects, dams or whatever.

Mr. COUGHLIN. You can quantify it to some extent when you are talking about health questions and such things, correct?

Mr. COSTLE. For example, if you are talking about reducing the presence of a toxic discharge from, say, 100 pounds a day to one pound per day, it is very hard to calculate what the health benefits of that will be to a community ten miles downstream, except that you know that you have reduced significantly the risk when that downstream community draws that water in for drinking water.

You have probably reduced the cost they would have had to treat it, but it may not be entirely possible to determine what a given level of contaminant in the water actually translates into in terms of health impairment. That is my point.

Mr. COUGHLIN. Would it impose a significant additional burden on you to do cost benefit studies?

Mr. COSTLE. I don't know how you would do them, frankly, given the difficulty in trying to quantify benefits. A lot of the benefits we are talking about are those associated with fishable and swimmable water. How do you assign a dollar value to that?

Mr. BECK. I just don't think that we could run a program under that situation. I want to go back and just amplify for a second some of the things we do do by way of example.

Just recently I had the opportunity to review some of the projects in Southern California. One of the purposes of the treatment in Southern California is to reduce viruses on some of the swimming areas downstream from the plant. In the evaluation and normal analysis, people are looking at what alternative levels of treatment will give you, in terms of virus protection and exposure protection, to people using those beaches.

I think at that level the Agency has the ability to do analysis and has the ability to make judgments in terms of certain determinations, but if one had to go to the next steps before determination would be made—that is to say, well, there will be 45 less people who get some sort of virus infection and as a result of that we have this much savings and that savings offsets the cost of making the investment for the treatment—we could not do that. We just could not do that.

But I think that the program that we manage goes to the first step, and the first step is to begin to array what we think will be the reductions and some of the improvements that will be seen by various alternative choices.

Mr. COSTLE. Even if you come up with a hypothetical model for filling that last gap that is some way of estimating or giving a quantitative estimate of the number of incidences of certain kinds of disease, nobody would ever agree with the model. You would always be arguing about that.

Mr. COUGHLIN. We are just talking about AWT plants here.

Mr. BECK. There are many AWT plants that we want to go ahead with. If that burden were placed on the Agency to go to AWT and that was a determination before we could make an investment of dollars, it would be litigated until the cows came home. Citizens who didn't want to pay the cost for hooking up might litigate it, as would municipalities who did not want to go forward with it. Or, the Agency would hold up because of that in cases where they did not want to make the investment.

It would undo the ability to go to advanced waste treatment. That would put a burden on it that would force it to fall. That is not something that we want to occur because I think advanced waste treatment is important in certain instances.

Mr. COSTLE. You were not here a few minutes ago when we talked about the kind of cost analysis that we do perform on AWTs in terms of saying what are we paying for, how much are we paying and what do we think we are going to get out of this and is it really necessary to meet that extreme standard and is that extreme standard in reality attainable.

So, I would not leave you the impression that we don't do cost studies or analysis. Maybe you could, depending on how you want to stretch the narrow definition of cost benefits, probably even call a lot of what we do cost benefits analysis mainly because that is an elastic term.

AWT PROGRAMS

Mr. COUGHLIN. As you know, the Subcommittee has expressed reservations about the AWT program for a number of years. It is not easy to get a grip on it but there is, I guess the gut feeling at least on the part of this Member, that we may be going further in the AWT program than is reasonable.

Mr. COSTLE. I think a number of things are really coming together to discourage that. The fact that there has to be more up-front discussion of what the ongoing operation and maintenance costs of treatment is, and what the community buying into that is causing people to ask that question at the local level.

We were discussing earlier the limits under the statute on our ability to influence that in the local communities, and their own determination of their water quality standards, and their determination in the enforcement area of permanent conditions necessary to achieve that, and the limits of our review of that.

The fact is that these are expensive plants, not only to build but to run and operate, and people are increasingly asking themselves hard questions.

Mr. COUGHLIN. About the operating expenses in particular?

Mr. COSTLE. Yes. I think the review that we have been doing on AWT projects has been a very helpful thing to do. There is some question about how much money we save. We think it is terribly important prospectively that this review ability be there. It does add to the length of time associated with a project, and currently there is some legal question about our authority, which is in litigation, but by and large I would report back to you that it was a very intelligent thing to have done.

PHOSPHATE REMOVAL

Mr. COUGHLIN. Based on current EPA policy (RPM 79-11), phosphorus removal is considered treatment more stringent than secondary and not advanced waste water treatment.

Mr. COSTLE. I think that one of the things that is central to the determination of whether you go to nitrogen or phosphate removal goes to the question of what you want to do with regard to stopping eutrophication. There are a couple of chemicals that cause eutrophication. One is phosphate and one is nitrates. In many water bodies where you have discharges you have high volumes of phosphate, and so if you increase the nitrification you get a eutrofication action.

You want to remove the nitrates, that would stop it. You have alternative situations where you have high nitrates and if you contribute phosphate you get eutrophication. So often the determination, in terms of the treatment alternative, is a function of the nature of the receiving water, and that often then becomes the cost determinant. That often is the thing that makes the determination of choice of control.

Mr. LONGEST. That is correct. Basically, all you are doing to remove phosphates is adding coagulants to the treatment process, which gives you a great deal more sludge.

Mr. COUGHLIN. There are very few capital costs?

Mr. LONGEST. Basically, yes, it is a chemical operation.

Mr. COUGHLIN. Phosphorus removal could really then not be categorized as Advanced Wastewater Treatment, if it is that kind of a system?

Mr. LONGEST. We put it in a middle category, AST, Advanced Secondary Treatment. It is a little greater than secondary but not quite advanced waste treatment.

Mr. COUGHLIN. Thank you, Mr. Chairman.

ADMINISTRATOR'S REVIEW OF AWT

Mr. BOLAND. Let me ask this question, because one of the statements on page CG-3 causes me some concern. That would be the third paragraph from the bottom, the last sentence in that paragraph: "In accordance with the conference report of the 1979 appropriation for construction grants, the EPA administrator is now reviewing all wastewater treatment projects more stringent than secondary, and with costs greater than $3 million."

As you indicated, the administrator's review is required for projects for AWT in amounts greater than $1 million by the 1979 Conference Report. In action on the 1980 bill, the House lifted the

threshold to $2 million while the Senate raised it to $3 million. Since the construction grants paragraph was not in disagreement, the conference report was silent on the issue. When the conference report was brought up on the House floor, I indicated, in order to clarify the matter for the Agency that the $3 million threshold was acceptable. The point I want to make is that the $3 million limit applies only to money in the 1980 bill. Funds carried over from 1979 used for AWT projects are still subject to the $1 million limit contained in the 1979 Conference Report.

I know this interpretation has been made to your staff, and I just wanted to be sure that the Agency is proceeding on that basis. Is that correct?

Mr. LONGEST. Yes.

Mr. COSTLE. In fact, I had a letter that I intended to send to you, and rather than mail it I just brought it up, that essentially tries to capture that, to make sure that we do have a clear understanding.

PLANT OPERATOR TRAINING

Mr. BOLAND. The wastewater treatment plants have experienced a number of difficulties throughout the United States, have they not?

Mr. BECK. Yes, they have.

Mr. BOLAND. They are complex, of course.

Mr. BECK. They are a very complex piece of machinery.

Mr. BOLAND. And I suppose that one of the most difficult things in the successful operation of the plant itself is the personnel. What are we doing about training personnel?

Mr. BECK. We have in our budget some money which is available for training of personnel, and the manpower that we have committed to it in 1980 is 43 workyears and 40 in 1981. We run a set of training programs in a variety of different activity areas. We have been doing some things with regard to rural projects, explaining to people what needs to be done there.

With regard to training specifically for the municipal operators, the truth of the matter is that the Agency has not done an awful lot in that regard, but we have and are adopting an alternative strategy by which we hope we can accomplish that. In each one of the delegations that we have established for the states under Section 205(g), we are encouraging the states to take on the leadership to start to work on operation and management problems and to start to work with the municipalities.

OPERATION AND MAINTENANCE PROBLEMS

At the same time, in this budget we have a $500,000 request, to provide on-site technical assistance and training to municipal treatment plants with O&M problems to demonstrate the most cost effective and efficient methods for resolving these problems.

Mr. BOLAND. I could suggest a plant for you. I am thinking about a multi-million dollar plant up in western Massachusetts, in the Springfield, area. It has had some problems in operation particularly with reference to the effluent that is emptied into the river, and also with the odor. That is an abomination. I am sure you can give

us a report on this some time. I am sure you are not familiar with it specifically.

Mr. BECK. No, I am not.

Mr. BOLAND. It is a large plant. It is a very complex one. There are a lot of pipes, a lot of valves, a lot of connections. It has been in operation probably four years, maybe longer. It has had considerable problems, particularly with reference to the odor and sludge disposal.

SLUDGE DISPOSAL

What about the sludge problem in municipal plants?

Mr. BECK. That is also a difficult problem. There are basically three general categories of disposal, one of which we will be doing away with as a result of the Marine Protection and Sanctuary Act. It either can be ocean dumped, incinerated or land disposed. We are coming up with certain new alternatives with regard to co-disposal options, energy alternative-type things, but sludge disposal has been one of the problem areas that municipalities have faced in terms of dealing with its residues from these plants.

Mr. COSTLE. It is interesting that a lot of the alternatives people are now looking at were not being aggressively explored until the Congress did enact the ocean-dumping statute, and put municipalities under the gun to find other solutions.

There is a fascinating experiment going on in Pennsylvania where the city of Philadelphia is exchanging sludge, putting sludge into trucks that brought coal in. That sludge is now being taken out to former strip-mine areas in Pennsylvania, and is being used in accordance with very strict criteria within the state in terms of slope, eligibility, et cetera, to essentially refurbish the soil of these mined-out areas. They are getting a ground cover in the first year, and it is working very well.

OUTLOOK FOR OPERATION AND MAINTENANCE PROBLEMS

Mr. BECK. Mr. Chairman, I think that if we were to look to the 1982, 1983, 1984 budgets of the Environmental Protection Agency that we would be seeing major initiatives in certain areas of operation and management of municipal waste treatment systems, and I think in 1982, 1983 and 1984 you are going to see us participating far more actively with regard to the financial management problems that municipalities are facing, because those two things are interconnected.

These systems need to be operated and maintained and it is based on user charges and operation, and management is going to need some technical initiatives and training. Our hopes are that as we get more and more delegations under 205(g) with the states actually picking up a lot of the grant program or, for that matter, the oversight of the municipal program, that we can begin to shift some of our people into those areas, and that will be an opportunity area for growth. I think that we just felt in this year's budget that we couldn't do it because we were still so overwhelmed in just managing our money, which is where too much of our attention goes. Not enough of our attention goes to managing the things that we have built. That is the challenge that we see in the out years. It

is just that we couldn't bring ourselves to do it this year. See you next year on that.

EPA MANAGEMENT OF CONSTRUCTION GRANTS PROGRAM

Mr. BOLAND. Thank you very much.

May I just for the record congratulate EPA in bringing Mr. Beck aboard as the Assistant Administrator for Water and Waste Management. This is a terribly expensive program. I think one of the most significant parts of the whole program is the management of the $45 billion, and who knows how many more billions will go into this program in the next few years. One significant aspect of the program is that it has been carried forward with few corruption or fraud problems. That was not so with the huge highway program that had many, many problems attached to it.

Mr. COSTLE. I continue to worry about it, because the potential is clearly there, given the sums of money that are involved.

Mr. BOLAND. You don't worry about it too much with the staff that you have pulled together now, do you?

Mr. COSTLE. No, but that is an awful lot of money. We are now up to a point where we have got about $19 billion in Step 3. Having the Corps out there on the site is helping. We have got a first-rate audit staff, but it is a very small staff compared to the amounts of money, when you look at other Federal agencies around town in terms of audits and audit coverage. The amount of dollars per auditor, that is, dollars that an auditor has to be accountable for, is considerably less than in our case.

I am very proud, and the Agency should be proud, and I appreciate your commendation on that, Mr. Chairman. They have done a heck of a job. It is a thin layer of people. Do you have a sense, Mr. Chairman, over the period that I have been coming up before this Committee, that the Agency's management of this program is in fact improving?

Mr. BOLAND. Yes, no doubt about it. This Agency has one of the toughest jobs in government. It touches the lives of everyone in this nation. In many respects, and as I said when we opened the hearings, the responsibilities and duties that have been imposed upon you by the Congress and by rule and regulation, place an almost impossible burden on the Agency. But I think in the past few years this Agency has grown magnificently. You have only been in place ten years. In every year you get additional responsibilities, and every year there are new problems that you have to be concerned about.

TEMIK

For example, I read an article in the New York Times the other day on Temik, a chemical used to control the Colorado potato beetle. Then I sought out a Member from Colorado and he said he never heard of the Colorado Potato Beetle. Actually that chemical was withdrawn by Union Carbide.

Mr. JELLINEK. Yes, but Temik, which is Union Carbide's brand name for Aldicarb, was voluntarily withdrawn from use only in Long Island.

Mr. BOLAND. But now the potato farmers are planting less; probably half of the crop that they planted last year. What is your position on Temik?

Mr. JELLINEK. We are looking at similar situations around the country and trying to come up with a decision on whether further action ought to be taken where it is used in soil types that could lead to contamination of water supplies in other places in the country. We have not concluded that review yet. We are looking at it.

Mr. BECK. The 208 areawide agency in Long Island got a grant for groundwater evaluation and a lot of information came out with regard to the groundwater contaminations. Temik was one, that is the tradename chemical, that came out of that 208 plant. Sometimes we do come across new problems, and we have to confront them.

Mr. BOLAND. It is my understanding that one of the problems in this area is increased by groundwater problems. Does Long Island have a high water table?

Mr. BECK. Very high. The aquifer in some places is just a very few feet underground. A lot of the Northeast has very high water tables, and that is why we are having a lot of groundwater problems.

EPA DISPOSAL OF CHEMICALS

Mr. BOLAND. We will turn to pesticides on page P–43. The EPA is requesting $4 million in 1981 to collect and dispose of the chemical Silvex. In February 1979 the Agency banned a similar product, 2,4,5-T. What specific section of the law provides the Agency with authority to remove and to dispose of chemicals? Has it ever been used before?

Mr. JELLINEK. It has been used before but not to this extent. Section 15 of FIFRA entitles registrants to indemnification if the agency suspends a chemical and then that chemical is cancelled, if the registrant can prove that he suffered losses, and if the registrant can also demonstrate that he did not have knowledge that the chemical was unregisterable. Section 19 of FIFRA then says that any chemical that is so cancelled under such a scenario may be delivered to EPA for disposal, if the registrant so wishes. So in essence, the disposal responsibility is the Agency's responsibility if we act in the way that I have just described.

USE OF 2,4,5-T

Mr. BOLAND. Did the Agency's Scientific Advisory Panel conclude last fall that 2,4,5-T poses no "substantial hazard to human health or to the environment"?

Mr. JELLINEK. That is not quite right. We asked the science advisory panel to review our intention to include in a cancellation proceeding uses of 2,4,5-T that we had not suspended earlier that year, and to take a look at the scientific basis for our decision to include those uses which were not suspended in the same cancellation hearing that covered the uses that were suspended. They concluded a variety of things, one of which was that they did not think that we should hold that particular hearing. They also con-

cluded, and I think the exact words were that 2,4,5-T used in those uses were not imminent hazards, and we never said they were, or else we would have suspended them earlier in the year. We would agree that in those uses they are not imminent hazards but that was not the question that we asked them.

Can I make a procedural point here, Mr. Chairman? Doug Costle, under the Administrative Procedure Act and the procedures set up by FIFRA, is barred from participating in a hearing discussion on the merits, on the substance of this 2,4,5-T suspension. Steve Gage is a member of the appeal panel and is also barred from participating. I have not talked with Doug about 2,4,5-T in over a year.

Mr. COSTLE. I was learning quite a bit.

Mr. JELLINEK. It is a fairly complicated legal requirement.

APPLICATOR TRAINING PROGRAM

Mr. BOLAND. I appreciate the problem. We will move on to applicator training. Turn to Federal and State program support. On page P–44, under the 1980 program, I notice a contract has been negotiated to evaluate training programs. What is the cost of the contract, and who will execute it?

Mr. JELLINEK. I don't know the exact cost of that contract. I think that the contract went to the Educational Testing Service of Princeton, New Jersey, to evaluate the training program. I will double check on that and provide the information for the record.

[The information follows:]

In 1979, the Educational Testing Service of Princeton, N.J. was awarded a contract for $101,275.00 to develop a pilot study for evaluating the training program. This study was completed in April 1979. Following this, a second fixed fee contract of $320,000.00 was awarded to ABT Associates, Inc. of Cambridge, Mass. to develop and administer a questionnaire and to evaluate the program.

APPLICATOR CERTIFICATION

Mr. BOLAND. Why are you proposing transferring the applicator certification program to the Office of Enforcement in 1981?

Mr. MILLER. The main activity in that program is state assistance and servicing grants. If you look at the pesticide enforcement grant activity, it is slightly more than double the applicator training program grant, and we thought we would gain efficiencies by administering them together. There is basically no change in direction or policy or anything else to be inferred from that transfer. It is just efficiencies of administration and it cut down somewhat on the paperwork burden to states.

INDEMNIFICATION PAYMENTS

Mr. BOLAND. Has the Agency made any indemnification payments under Section 15 of the Federal Insecticide, Fungicide and Rodenticide Act? Are there any plans to do so in 1981?

Mr. JELLINEK. We have not made any on the Silvex cancellation, although a number of claims have been filed which are being reviewed.

Mr. BOLAND. So you don't have any plans to do so in 1981, as of this moment?

Mr. JELLINEK. We don't have any plans to make any indemnity payments.

ADMINISTRATIVE HEARING PROCEDURES

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman. I confess to confusion on this 2,4,5-T and Silvex question. This is something that we went into last year, and you cannot discuss it here because the Administrator is here.

Mr. JELLINEK. I think last year Mr. Costle wasn't here. Let me just try to explain briefly. The procedure is set up by the law.

Mr. COSTLE. This is in the statute.

Mr. JELLINEK. Yes, it is in the statute. Once the Administrator makes his basic decision to cancel, it goes through a series of administrative hearings, where the record for any final decision is based on those administrative hearings. The Administrator is then completely withdrawn from the proceeding until the record is complete, and is not allowed to have any ex parte communications at all. As I say, I am not allowed——

Mr. COUGHLIN. With his own staff?

Mr. JELLINEK. That is right.

Mr. COSTLE. I can isolate certain members of the staff who have to essentially work under the same rules.

Mr. JELLINEK. Dr. Gage and some other members of the staff are set aside as an advisory panel to the administrator.

Mr. COSTLE. The whole point of the procedure is that by the time I am to make a final decision by law, that decision must be based on the written record that is the result of all the administrative hearings, which are adjudicatory-type hearings and usually chaired by an Administrative Law judge. I am suddenly wearing a judicial robe and a gray wig and I am like the court of appeals, so I have to behave like a judge, literally.

I don't want to inhibit this discussion so I think what I will do is just step out in the hall for a couple of minutes and let you speak with Steve. I think that will be the easiest thing.

Mr. JELLINEK. I can discuss any procedural aspects of the indemnification. That is no problem. It is the substantive issues involving the suspension itself. One way to explain it is that once we begin this process, the chemical is put on trial. A suspension is like a preliminary injunction, and then the actual trial is the cancellation hearing. In the trial, the Administrator becomes the judge, the agency staff becomes the prosecution, and the registrants become the defense. Any communication with the judge can only be done on the record, and cannot be done ex parte.

Mr. BOLAND. Mr. Coughlin, with Mr. Costle and Mr. Gage removed from the hearing, please feel free to proceed with questions you may have concerning 2,4,5-T and Silvex.

CANCELLATION OF 2,4,5-T

Mr. COUGHLIN. It is still unclear to me, your Scientific Advisory Council and the No. 2 study, which was shown to be in error on the basis of the University of Oregon critique, I am not sure why we are not reinstating 2,4,5-T and Silvex.

Mr. JELLINEK. Let me briefly review the history. 2,4,5-T and particularly its dioxin contaminant have been chemicals of concern for more than ten years. Dioxin in particular, has been demonstrated in laboratory tests to be extremely toxic at low levels down to parts per trillion. The animal data on the toxicity of this chemical is indisputable. EPA, up until early last year, had not had very good exposure of data. The health effects of any of these chemicals, pesticides or whatever, are a function of both toxicity and exposure. Dioxin is extremely difficult to analyze at low levels, although it is extremely toxic at low levels and we have not over the years been able to make the exposure case.

Late in 1978 we did conduct an epidemiological statistical study, known as the Alsea II study, of miscarriages in several counties in Oregon. We believed that study demonstrated a statistical correlation between an increase in miscarriages and the spraying of 2,4,5-T. Although we still did not have at the time solid exposure data, we felt that the connection between the very strong animal study and some indication of potential human effect, was enough to cause us to suspend the use of that chemical until we could sort out the long-term risks and benefits at a cancellation hearing.

That suspension was done for three major uses: forest uses, rights of way uses, and pasture uses. The uses that we suspended were those in which we felt the exposure pattern was similar to the forest use around Alsea, Oregon. We did not suspend rangeland or rice uses because we could not make a case for similar exposure. The question that was put to the science advisory panel was, should we, based on the evidence available, include consideration of the rangeland and rice uses in the overall cancellation?

They said that we should not, but they did not disagree with us on most of the scientific findings. As I said to the Chairman, their rationale for us not cancelling it was because it doesn't pose an imminent hazard. That was not the question we asked them, so we have gone ahead and put the rangeland and riceland uses into the same general proceeding as the other suspended uses.

Oregon State has come out with studies which it says discredit our Alsea epidemiological study. We just don't accept that. Frankly, my understanding is that the Oregon State study was conducted not by toxicologists but by foresters, and we have in the past year in preparing our case for the cancellation hearing developed a considerable amount of evidence in addition to the Alsea II study that frankly strengthens our resolve to continue to pursue the final cancellation of 2,4,5-T for these uses.

Mr. COUGHLIN. Thank you. I have some questions I indicated earlier that I would submit for the record that were given to me by our colleague Mark Andrews from the State of North Dakota, and I would like them to be submitted at this point.

Mr. BOLAND. Fine.

[The information follows:]

ROTATIONAL CROP TOLERANCES

Question. For some time now the EPA's Pesticide Office has been considering a program of granting tolerances for inadvertant residues of pesticides in rotated crops. What is the status of this program and when do you expect to issue the first tolerance?

Answer. the Agency has assigned priority to the development of a policy for establishing tolerances in rotational crops. Tolerance setting is a rather complex science and consequently procedures for doing this are not easily developed. Under the draft policy, tolerances could be set for rotational crops, follow-up crops, and for crops re-planted in the event of target crop failure. Current policy is to use rotational crop restrictions when residues are expected to be found in the rotational crop. The proposed policy allows the Agency to reduce the rotational restriction interval, i.e., 18 months to 12 months, or to eliminate the restriction by setting tolerances in rotational and follow-up crops.

Registration and Hazard Evaluation Divisions are currently working on several of the procedural issues. The Agency is currently reviewing the herbicide, Antor, for rotational crop tolerances. A decision on this submission is expected shortly. Several other requests have been received by the Agency and will be processed during the next few months.

Issuance of Tolerances

Question. The Agency's failure to act in this area is depriving agriculture of much needed materials by putting severe restrictions on their use. If a pesticide already has a temporary or permanent tolerance established in a treated crop and the residue in a rotated crop is essentially zero or negligible, why is there a delay in the issuance of the tolerances for the inadvertant residues?

Answer. It is necessary, first of all, to determine the level of residues in the rotated crop. Such a determination can only be made on the basis of data which must be submitted by the registrant. The lack of such data requires the imposition of crop rotation restrictions on the label of the product if the persistence and nature of the chemical or its metabolites is such that succeeding crops can end up with residues.

Agricultrual Needs

Question. I have received a number of inquiries from farmers in my state as well as from the staff of the Agronomy Department at North Dakota State University regarding the availability of herbicides for our important agricultural crops. In particular, there is concern about an apparent lack of sensitivity on the part of EPA as to the timing of registrations and other decisions. A delay in only one month in the issuance of a registration, tolerance, or experimental permit can deny the agricultural community the use of a needed product for an entire year. This is particularly true for a herbicide. Is the EPA sensitive to this concern?

Answer. The Agency is very aware of the agricultural needs for herbicides and other pesticides and has demonstrated that awareness on many occassions. The creation of an Emergency Response Team in the Registration Division is an example of our sensitivity to the need for fast action in handling Emergency Exemption requests. The Agency has assigned high priority to the review of Experimental Use Permits since timing for experimental programs are often critical. Our implementation of conditional registration authority has also resulted in the timely registration of pesticides even when not all data was submitted, where determinations could be made that there would be no significant increase in risks during the period required for conducting tests to obtain the needed data.

Antor-Herbicide

Question. Specifically, I am interested in the herbicide Antor which has an application for registration pending and there is a delay because of the Agency's failure to act on the policy of establishing a tolerance for inadvertant residues in follow crops. Will the Agency be able to reach a decision so that the farmers of North Dakota will have Antor available for the 1980 growing season?

Answer. As indicated in a previous answer, Antor is the prototype chemical for applying rotational crop tolerance policy. The policy and program should be operational within three to four weeks. However, at this time there is a need to characterize the residues before a decision can be made as to whether tolerances are necessary for rotational crops. An Experimental Use Permit has been granted for Antor on soybeans and sugar beets, with a rotational crop restriction, so a limited amount of the product will be available to growers as a part of the experimental program. Registration of the product, however, will not be issued in time for the 1980 season since data questions, other than crop rotation, are at issue.

HERBICIDE-DIALLATE

Question. Further, with regard to the herbicide diallate (Avadex), the staff on North Dakota State University reportedly submitted information to the EPA in the fall of 1977 on the benefits of this material in response to an RPAR. To date no decision has been made as to the outcome of this RPAR.

Why has it taken EPA so long to come to a decision?

Is the benefit data submitted over two years ago still valid or will another analysis be done essentiall starting the process over again?

When will the farmers of North Dakota have an answer as to whether or not this product will continue to be available?

Answer. The diallate proposed Decision Document (PD 2/3) has been delayed because several of the toxicological studies which form the basis upon which the chemical was registrated were performed by Industrial Bio-Test Laboratories, Inc. Validation of these studies was completed in the latter part of 1979. A fact sheet in the IBT validation process is provided below.

The benefit data submitted is still considered to be valid. The PD 2/3 contains benefits information taken from the assessment report prepared by the United States Department of Agriculture which incorporated the North Dakota State University data?

The Diallate PD 2/3 is now in policy review. Barring any unforeseen delays, the document giving the proposed Agency Division should be available for public review and comment within 90 days. However, a final decision will not be made for about 9 months because the Agency will need to incorporate comments received from the review by the United States Department of Agriculture and the Agency's Scientific Advisory Panel.

In 1976 the Food and Drug Administration inspected Industrial Bio Test (IBT) Laboratories in Illinois and found serious discrepancies in the way animal toxicology studies were conducted at IBT as well as discrepancies between the final reports of such studies and the raw data. These deficiencies may have undermined the scientific integrity of some of these studies.

As a result of FDA's findings EPA scientists conducted several follow-up audits at IBT facilities. EPA's registration files contain over 4000 studies performed by IBT. The Agency has asked industry sponsors of IBT studies to audit their toxicology data in three phases. The first phase includes studies of chronic feeding, reproduction, teratogenicity, oncogenicity, neurotoxicity and metabolism which firms have submitted in support of petitions for tolerances. The second phase will include studies that companies have submitted for the registration of products for home use. The third phase will involve studies supporting other major uses of pesticides.

It is the first phase in which EPA is presently involved. Approximately 640 studies will be audited by industry sponsors and reviewed by EPA. EPA has entered into a cooperative agreement with the Canadian government to apportion the workload related to the examinations of audits in those cases where identical data have been submitted by registrants to support registrations or tolerances in both countries.

DATA AUDITING PROGRAM—IBT AUDITS

BACKGROUND

Case referred to the Department of Justice in April, 1978.

A cooperative agreement for sharing the validation review workload was reached with Canada in July, 1978.

Audit manual developed for use by registrants in October, 1978, followed by a conference held for registrants during the same month.

Four hundred and fifty-six validation reports were received from sponsors (139 of these refer to compounds to be handled by Canada).

One hundred and fifty-four validation reports have been reviewed to final conclusion of validity by Canada.

One hundred and sixty-nine preliminary reviews [1] have been completed by SPRD.

Forty-five validation reports have been reviewed to final conclusion of validity/invalidity by EPA.

Comprehensive review of data base begun for three compounds. The output from such review is a conclusion regarding whether a compound may be safely allowed to remain on the market while the invalid studies are being repeated.

---

[1] A preliminary review consists of a thorough review of microfiche raw data and validation report to insure the accuracy and thoroughness of a registrant validation report.

New IBT policy set forth, calling for completion of all sponsor validations by February, 1980 and *de facto* invalidation of IBT long-term rodent studies.

FISCAL YEAR 1981 ACTIVITIES

Completion of review of all IBT validation reports.

Continue comprehensive review of about 18 compounds with serious deficiencies in their toxicology data base as determined by validation effort.

60-531 O - 80 - 19

Table I-1. Diallate IBT Studies

Type of Study	IBT No.	Status	Remarks
Fish & Wildlife			
8-Day LC_{50} Mallard Duck	651-3026	Valid	
8-Day Dietary LC_{50} Bob-white Quail	J-6672	Valid	
8-Day Dietary LC_{50} Bob-white Quail	J-6673	Valid	
8-Day Dietary LC_{50} Bob-white Quail	651-3025	Valid	
4-Day Fish Tox	665-3027	Valid	
Fish & Wildlife	A-6675	Invalid	No raw data
Fish & Wildlife	A-6674	Invalid	No raw data
Fish & Wildlife	A-6849	Invalid	No raw data
Acute Studies			
4-week Pilot oral study	8531-9714	Valid	
Pilot feeding study/mice	8532-9820	Invalid	Incomplete raw data
Acute Inhalation	59-13-3	Invalid	No raw data
Acute cholinesterase	8530-9030	Valid	

Table I-1 (continued). Diallate IBT Studies

Type of Study	IBT No.	Status	Remarks
Subacute Studies			
Subchronic oral	59-13A	Invalid	No raw data
Subchronic oral	59-13-2	Invalid	No raw data
Subchronic oral	59-13	Invalid	No raw data
Subchronic oral	59-13-1	Invalid	No raw data
Chronic Studies			
Teratogenicity/rabbits	651-5254	Invalid	Deficiencies in experimental design
Mutagenicity/mice	622-5252	Invalid	No raw data
Neurotoxicity/chicken	8580-9119	Valid	
Chronic feeding/rats	622-5250	Invalid	Incomplete raw data

EPA Authority

Question. I feel these questions need to be addressed because EPA's delays and failure to act are causing the farmer's costs to increase and are adding to the inflationary burden. How does EPA go about being the registerer of pesticides and still carry out its prime mandate to protect the environment? There seems to be a conflict here and it appears that the environment comes first and agriculture second.

Answer. EPA receives its authority to regulate pesticides from the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This Act embodies the philosophy that those who would most directly benefit by government approval of a pesticide product should bear the burden of proof that their product will not pose the risk of unreasonable adverse effects to man or the environment. Unreasonable adverse effects are defined to mean "any unreasonable risk to man or the environment taking into account the economic, social, and environmental costs and benefits of the use of any pesticide. The FIFRA requires that all pesticide products be "registered" before they enter commerce following an evaluation against this statutory risk/benefit standard. Thus in registering a pesticide EPA requires a great deal of information on the long and short term effects of the product, including data on environmental chemistry (what happens to the pesticide in the environment after it is applied), effects on non-target organisms, and chronic health effects, such as cancer. Registration is granted only if the Agency can determine that the use of the product, in accordance with its labeling directions and precautions, will not pose the risk of adverse effects.

Clearly, the prime mandate of the FIFRA is to protect human health and the environment. And it is also clear that there may be conflicts between human health concerns and the needs of pesticide users. However, the FIFRA is not a "no-risk" statute, but a "risk/benefit" statute. It is this "risk/benefit" standard which enables EPA to consider both human health and user concerns in a reasonable and balanced fashion. So long as the hazard data do not indicate a particular problem with a pesticide, the Agency usually assumes benefits balance the risks and the product may be registered or continue to be registered. When hazard data do indicate problems, the Agency specifically considers benefits data in depth in order to reach a final regulatory decision which reflects a careful and responsible balancing of risks and benefits. There have been no major pesticide regulatory actions resulting in the significant restriction or cancellation of products in which extensive benefits analysis was not done.

In carrying out this dual responsibility the Agency has not imposed excessive costs on society. Costs of pesticide regulation are imposed on users in two ways—through the purchase price of pesticide products and as EPA's pesticide regulatory activities affect the availability of pesticide products. Estimates for 1979 indicate that about $5.1 billion is expended for pesticide chemicals in the U.S. Agriculture accounts for nearly two-thirds of this total; industry and government use for about 25%, and home and garden use for 12%. But while pesticides can be extremely important to the user, the costs of use can be comparatively small. In agriculture for example, expenditures for pesticides in 1979 were $3.2 billion or only about 3% of farm production expenditures in the U.S. And of the total value of user expenditures for pesticides in 1979, EPA estimates that only a small portion, or approximately 1.7% is attributable to EPA registration-related R&D expenditures ($80 to 85 million).

With regard to product availability, approximately 35,000 pesticide products are registered, formulated from some 1,400 different pesticide active ingredients. Since EPA has been administering the program, more than 120 of these active ingredients have been registered for the first time. During the same period out of the more than 100 pesticides reviewed intensively EPA has taken action to cancel or suspend partially or completely registrations of approximately 35 pesticides—only 12 of which can be considered major actions. The total impact of these 12 cancellation/suspension actions over the lifetime of the impacts is estimated to be about $256 million or less than $1.16 per person in the U.S. Assuming that the impact of these 12 actions is the major impact of all such actions, then the total economic impact for all 35 pesticides affected by cancellation or suspension is in the range of $1.16 to $1.50 per person, an acceptable cost considering the potential risks continued use of these most hazardous pesticides would have posed.

Soybeans and Sugarbeets

Question. How many new pesticides for soybeans and sugarbeets have been registered in the past two years (including additions to existing labels)?

Answer. One new pesticide ("new chemical") has been registered during the past two years for use on soybeans, and two new pesticides for use on sugarbeets. These are:

(1) Soybeans: Fumi-cel[R] (Magnesium phosphide).

(2) Sugarbeets: Cytex[R] [cytokins as kinetin (seaweed extract)]; Nortron[R] (ethofumesate).

Statistics on Registrations

Question. How many new products and uses have been cancelled, suspended, or restricted in the past two years, as opposed to how many new products and uses have been registered.

Answer.

a. "Old Chemicals" (active ingredients which have been used for pesticides in the past).

Cancellation or suspension actions were taken against 10 pesticide chemicals, affecting a total of 107 uses during the past two years (FY 1978 and 1979).

Regulations have been issued for the classification of restricted use pesticides during the same period, affecting all uses of 35 pesticide chemicals.

One other pesticide was classified as restricted, but only for one use.

On the other hand, registrations for 470 uses of 31 pesticide chemicals were accepted during FY 1978 and 1979.

b. "New Chemicals" (active ingredients not listed in the ingredient statement of any currently registered product). No new chemicals were cancelled or suspended during the past two years.

Three new chemicals (four products) were classified as restricted.

A total of 22 new pesticide chemicals were registered, with more than 39 uses.

Silvex

Question. Why is EPA requesting proposals for disposals of the 30,000,000 pounds of lawn fertilizer containing small amounts of silvex?

Answer. On February 28, 1979, the Administrator suspended, on an emergency basis many registrations of pesticides containing 2,4,5-T and silvex. This covered home and garden use registrations of silvex pesticides, including some dry lawn fertilizers and some liquid herbicide formulations. These registrations were suspended because the products are contaminated with dioxin (TCDD) an extremely toxic substance, and because their use presented an imminent hazard to human health. The Administrator determined as stated in the suspension order, that home and garden uses of silvex products presented an especially serious risk, despite the relatively small percentages of silvex in such products, because they are used primarily by untrained applicators in residential areas where the risk of human exposure is great.

Subsequent to the suspension order, 17 registrants of silvex products voluntarily cancelled their home and garden use registrations, accepting EPA's determination that such uses presented an imminent hazard. These cancellations were incorporated in individual agreements signed by each registrant, in which the registrant also agreed to recall its cancelled products from its customers, and to store such products pending their transfer to EPA for disposal. EPA is required by section 19 of FIFRA to "accept . . . for safe disposal a pesticide the registration of which is cancelled . . . [because of imminent hazards] if requested by the owner of the pesticide." The agreements between EPA and the 17 registrants establish certain procedures for implementing section 19.

Currently, EPA is in the process of carrying out this statutory responsibility by seeking proposals from potential contractors for the disposal of an estimated 30,000,000 pounds of silvex-contaminated fertilizers which are expected to be collected by the 17 registrants. [Disposal of liquid silvex pesticides is being planned separately for technological and economic reasons].

EPA/USDA Cooperation

Question. The February 15, 1980 issue of SCIENCE Magazine carried an article on James Allen's misuse of government grant monies in his involvement with research into health effects of toxic chemicals. Why is EPA making grants which duplicate the effort in pesticide benefit assessments conducted by the USDA? If EPA grants go beyond USDA, then shouldn't these funds be transferred to USDA for granting to prevent possible duplication? Isn't there an agreement between USDA and EPA that the USDA would be responsible for benefit data relative to the RPAR process?

Answer. Under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA is mandated to register and permit use of only those pesticides that are demonstrated not to pose unreasonable adverse effects to man or the environment. By law, the "reasonableness" of pesticide effects are to be determined through analysis and comparison of both the risks and the benefits of each pesticide's uses. While the burden of providing sufficient data concerning a pesticide's potential hazards rests with the registrant, it is often difficult to gather comparable benefits data. So long as the hazard data do not indicate a potential for serious risk, the benefits of a pesticide are usually assumed to balance the risks without actual extensive examination of its benefits. However, when the hazard data do indicate a particular problem with a pesticide it is necessary to have reliable benefits data to weigh against the hazard data in order to reach a balanced decision about the use of that pesticide.

During the past several years, EPA has increasingly realised that economic impact analyses can be improved by drawing upon economists and other analysts located in field positions near the sites where the problem pesticides are actually used. Also, it has been found that basic data on the economic profile of the affected region are more readily available to these field experts, as are data and literature pertaining to the specific problem pesticide and the alternatives actually used.

Thus the Office of Pesticide Programs, EPA has entered into Cooperative Agreements with eight State universities, which provide mutual funding for conducting analyses of the costs and benefits that accompany the use of pesticides. These economic analyses contribute to and improve the soundness of EPA's risk/benefit pesticide regulatory decisions on problem pesticides that are undergoing intensive reviews through the Rebuttable Presumption Against Registration (RPAR) process.

These eight Cooperative Agreements were initiated in accordance with the USDA/EPA Memorandum of Understanding (signed in December 1976, under which EPA works cooperatively with USDA and the States to evaluate the benefits of pesticides under RPAR review) and in consultation with USDA/State management of the National Pesticide Impact Assessment Program (NPIAP).

This Memorandum of Understanding is included as part of the Cooperative Agreements with each of the eight universities to ensure that parties to the Cooperative Agreements are fully aware of the need for proper coordination during implementation of the Cooperative Agreements. The stated purpose and the policy of the USDA/EPA Memorandum is to ensure that EPA and USDA work together to develop objective and accurate data on problem pesticides for purposes of EPA decision-making. The Memorandum of Understanding does not transfer responsibility totally from one agency to another in any respect.

Within this cooperative framework a USDA/EPA/State assessment team evaluates the benefits of the use of an RPAR's pesticide versus control alternatives and studies the economic impacts which would occur if regulatory action were taken. The new Cooperative Agreements are designed to supplement—not duplicate—RPAR assessment efforts with increased inputs from the States.

In some instances, the work conducted under the Cooperative Agreements goes beyond that by USDA since there is not always an active USDA/EPA/State Assessment Team to perform the benefit analyses required. Many uses of pesticides on which EPA must make decisions are not agricultural uses, (e.g., industrial, commercial, and public health), and may be of little or no interest to USDA in line with its mandates.

Congress has mandated EPA to administer the FIFRA regardless of whether or not USDA chooses to participate in the analysis on a given problem pesticide. For this reason, EPA must each year commit resources in the form of Agency staff, extramural contracts and cooperative agreements to ensure that the needed economic analyses are conducted. USDA has been given by the Congress separate funds for contributing to the various pesticide assessment activities, in addition to that provided by EPA. The USDA and EPA, however, operate on a cooperative basis at all levels, ranging from the highest levels down to the coordinators of individual projects to ensure that duplication of effort is avoided.

The Cooperative Agreements at the eight universities have been in effect a relatively short time (since October 1979), but are already meaningfully contributing to RPAR benefit assessments without duplicating efforts. The Agency places a high priority on continuing to conduct economic analyses on problem pesticides at an accelerated rate to move ahead with decision-making on problem pesticides. The Cooperative Agreements are important inputs to help EPA make decisions on schedule and to improve the quality of the decisions.

[Additional information was received and is on file with the Committee.]

RADIATION PROGRAM

Mr. BOLAND. Turn to page R-1, the radiation program. The total request of $72,702,000 is $520,000 greater than the 1980 current request. Permanent positions are remaining constant at 215, although there is an increase of seven in the current estimate. Full-time equivalency decreases 4 to 248.

Are you familiar with the $65 million, urgent supplemental request the President transmitted to the Congress last December, in response to certain recommendations in the Kemeny report?

Mr. HAWKINS. No, sir, I am not. This was a supplemental for what Agency?

Mr. BOLAND. It was a supplemental request for the Federal Emergency Management Administration, the Nuclear Regulatory Commission, and the Department of Energy.

Mr. HAWKINS. I am familiar with the FEMA. It is a coordinating institution that is charged with coordinating various responsibilities of Federal agencies. EPA's responsibilities are essentially limited to the review of state emergency response plans as well as our monitoring activity which we are carrying out under our environmental radiation air monitoring survey program.

Mr. BOLAND. Basically, the purpose of the supplemental request is to define and strengthen government Agency roles in the case of future incidents similar to Three Mile Island. The NRC will have primary on-site responsibility and FEMA will have principal off-site responsibility—including evacuation plans. There are statements on pages R-4 and R-5 of the justifications relating to the new Federal response posture concerning nuclear accidents. Let me read the statement on page R-4: "EPA will assist in the development and testing, of state, local and Federal plans to respond to emergency situations involving nuclear events or large, unexpected releases of radioactivity."

The statement on R-5 is: "In 1980, the regional radiation staffs will stress the development of State emergency response plans."

Are you coordinating your work with the NRC and with FEMA to avoid duplication of effort?

Mr. HAWKINS. Yes. FEMA in fact put out draft regulations designed to assign responsibilities to a variety of Federal agencies, and those regulations when put in place in final form will be the coordination document, because it will be a coordinated set of agreements among agencies, and we are doing that.

THREE MILE ISLAND

Mr. BOLAND. What amount of resources, people and dollars did the Agency devote to responding to the Three Mile Island incident?

Dr. GAGE. The total cost of the ongoing effort at Three Mile Island has probably cost the Office of Research and Development over $500,000 in FY 1979 and we have had as many as 21 people involved at the peak. We estimate $125,000 will be spent in FY 1980.

Mr. BOLAND. Do you currently have people stationed at Three Mile Island?

Dr. GAGE. Yes, we do. We have been given the responsibility by the White House to continue the long-term monitoring at Three Mile Island. We have two EPA full-time employees there, and we have probably another four employees who have been picked up on a temporary basis to help us run the monitoring network.

Mr. COSTLE. We deployed a monitoring network.

RADIATION POLICY COUNCIL

Mr. BOLAND. On the bottom of page R–4, the establishment of a Radiation Policy Council is mentioned. You have sort of come full circle in this, haven't you? In 1970, an existing Radiation Council was abolished and its functions were tranferred to the new EPA. What are the differences between that council in 1970 and the new one?

Mr. HAWKINS. Mr. Chairman, there is quite a difference. This Radiation Policy Council was one of the recommendations made by what has come to be known as the Libassi committee report. This report is a review of all Federal radiation protection activities. It was undertaken at the President's request and was completed last summer.

This Radiation Policy Council is designed to coordinate the various radiation activities of government agencies. It was not designed to remove any responsibilities from the agencies that currently hold them. One of the areas that the Council is going to be evaluating is the Federal guidance function, which, as you mentioned, was transferred to EPA from the predecessor council.

However, the Radiation Policy Council is not charged with taking over that Federal guidance function. Rather, it is charged with evaluating the guidance function and evaluating how Federal agencies have responded to the guidance which EPA has issued. I think there has been some concern raised by this committee and others, about the way in which Federal agencies have responded to the guidance that EPA has issued.

Mr. BOLAND. Which agencies are members of the new Council?

Mr. HAWKINS. The member agencies besides EPA, are DOD, Justice, Commerce, Labor, HEW, DOT, Energy, VA, NSF, and FEMA. NRC is invited to participate.

Mr. BOLAND. How are you proposing to fund the activities of the Council in 1980 and in 1981?

Mr. HAWKINS. Until there is a separate appropriation developed and requested by the Agency, we are going to have to await the establishment of the activities of the council. What EPA intends to do in the interim is to continue the kind of interagency coordination that our staff has attempted to undertake in the past.

Mr. BOLAND. Doesn't this Council have to be authorized in order to receive appropriated funds?

Mr. HAWKINS. I believe our General Counsel has advised us that an authorization would be required.

RADIATION EXPOSURE

Mr. BOLAND. On page R-9, the Agency is requesting $2,990,000 for health and ecological effects. Will you provide for the record the amounts and sources of estimated radiation exposure for the average U.S. citizen? For example, how much is from background sources, how much from airplane trips, how much from X-rays, and so forth? Can you do that?

Mr. HAWKINS. We can provide a copy of our report on the radiological quality of the environment that should shed some light on that.

[The information follows:]

BODY RADIATION DOSE EXPOSURE

The U.S. average for annual whole Body Radiation Dose Exposure is 182 millirems. This exposure includes 102 milligrams from natural sources and 80 millirems from sources resulting from human activity. A more detailed break out is as follows:

Sources and average millirems whole body

Cosmic	44.0
Internal	18.0
Terrestrial gamma	40.0
Natural occurring radiation 102.0	
Medical X-ray	72.0
Radiopharmaceuticals	1.0
Fall out	4.0
Occupational	.8
Nuclear power	.003
Miscellaneous	2.0
Human origin	80.0
Total	182.0

NONIONIZING RADIATION

Mr. BOLAND. And on page R-10, why is the Agency studying the effects of FM radios on rats? What could possibly be done even if a problem was detected?

Dr. GAGE. The major concern that we have about large sources of non-ionizing radiation would be exposure in the vicinity of transmitter and receiver stations, where there are reasonably high energy densities associated with those steps. In the general environment, the energy density associated with non-ionizing radiation appears to be low enough. It is of no great concern, but around transmitters the energy density builds quite high.

Of course, there are a number of accounts of health effects such as cataract formation, people working in microwave radiation during and after World War II, and a variety of other allegations not all of which have been fully substantiated. So what this non-ionizing radiation research program—and I should point out this comprises the entire effort that the agency has in radiation research—is trying to determine if at lower levels of radiation exposure there are subtle chemical effects which should be taken into

account and are not taken into account now in the advisory guidelines for non-ionizing radiation sources.

Mr. BOLAND. What about your research on possible health effects of microwave ovens?

Mr. HAWKINS. Mr. Chairman, if I might clarify the radio study—we are not having rats listen to the radio.

Mr. BOLAND. I wouldn't think so.

Mr. HAWKINS. It is exposing them to the transmitted signals which are in the frequency which is characteristic of FM radios.

Dr. GAGE. A good point. I have a 16-year-old daughter who seems to carry one around next to her ear. I am concerned about that but not for the same reasons.

Mr. BOLAND. I am glad you gave that explanation. I can tell you, because this is one of those that when you get to the floor——

Mr. HAWKINS. I thought I had edited that out of the budget justification.

MICROWAVE OVEN RESEARCH

Mr. BOLAND. How about the research on microwave ovens; has that research discovered any possible health effects?

Dr. GAGE. We have pretty good indications that there are some very subtle biochemical effects, but we are not at all clear at this time whether those would translate into health effects. We see from our studies that the microwave radiation is not uniformly absorbed by the body. In other words, there are certain parts of the body, even of the brain, which preferentially absorb radiation of different frequencies. We observe that in those areas there are changes in, say, phosphorus concentrations, other sources of biochemical changes, which may have some interference with nerve impulses moving through the brain. It is too early to tell at this point whether those will have any manifestation and behavioral effects.

RADIATION MONITORING AND TECHNICAL SUPPORT

Mr. BOLAND. Page R-13, indicates a new activity, monitoring and technical support. You are looking for $191,000 in 1981. There was no provision for this in 1979, no budget estimate in 1980. Why not?

Dr. GAGE. This is a new area which we have established, recognizing that, in fact, we have been providing quality assurance in the radiochemistry area for a number of years, but have been carrying it under the air and water quality assurance accounts. With the Three Mile Island accident and with the involvement of many different government laboratories in making measurements up there, it became very clear to us at that time that there was a wide discrepancy among the various measurements. So, we accepted more of a full-time role here in providing quality assurance samples and measurement techniques to our three laboratories involved in radiation measurements, Food and Drug Administration laboratories and to a number of others who have been involved in this very critical effort.

RADIATION STANDARDS AND GUIDELINES

Mr. BOLAND. How many standards and guidelines have been proposed and finalized under EPA's radiation program since its inception. What is planned for 1980 and 1981? You may supply that for the record.

[The information follows:]

RADIATION PROTECTION STANDARDS AND GUIDELINES

EPA has established as of March 1980 the following "Radiation Protection Standard and Guides:"

National interim primary drinking water regulations (Radionuclides)—Final promulgated July 9, 1976. Effective June 24, 1977.

Environmental radiation protection standards for nuclear power operations—Final promulgated January 13, 1977. Effective date: Section 190.10(a) December 1, 1979 for all operations except the milling of uranium ore, for which the date is December 1, 1980; Section 190.10(b) December 1, 1979 for radioactive materials generated by the fission process after this effective date except for Kr-85 and I-129, for which the effective date is January 1, 1983.

Radiation Protective Guidance to Federal Agencies for Diagnostic X Rays—Final promulgated February 1, 1978.

EPA radiation regulatons now in progress include:

Uranium mill tailings:

Inactive sites, proposed February 1980. Final January 1981.

Active sites, proposed October 1980. Final September 1981.

High-level waste standard, proposed June 1980. Final September 1981.

Ocean disposal:

Packaging criteria, proposed September 1981.

Siting criteria, proposed September 1981.

Residual radioactivity (decommissioning), in progress.

Low-level waste, in progress.

RCRA:

Phosphate mine and processing waste, final June 1980.

Uranium mine waste, final June 1980.

Zirconium processing waste, final June 1980.

Occupational guidance:

General, proposed June 1980. Final March 1981.

Special groups, proposed June 1980.

Protective action guides:

Airborne releases, proposed April 1981.

Food pathways, in progress.

Nonionizing guidance, proposed March 1981

Clean Air Act, 2 proposed in fiscal year 1981 (Most likely candidates coal-fired plants, elemental phosphorous, uranium mines).

RADIATION ENVIRONMENTAL IMPACT ASSESSMENT

Mr. BOLAND. Why is the 1980 program for Environmental Impact Assessment increasing $446,000 and 10 positions, especially in light of a $1 million or 20 percent shortfall in 1979?

Mr. HAWKINS. This program consists of several major activities. The major reason for the increase is to better support our standard setting activity—we do a lot of field surveys to give us the background to develop standards—and in particular, we are attempting to get a much better handle on some of the contamination problems associated with uranium, mill tailings, and mining. This effort will help us to carry out our responsibility to set standards for inactive and active uranium mill tailings sites under the legislation which was adopted at the end of 1978.

RADIATION FROM COAL-FIRED PLANTS

Mr. BOLAND. And on page R-18, why is the radiation program studying coal-fired electric generating plants? Isn't there sufficient work being done in the air program?

Mr. HAWKINS. Because coal-fired power plants are a potential radiological hazard, I have organized the power plant work so that the radiological issues are dealt with in the radiation program. I have done so because of the unique health risks and the unique factors of exposure that are inherent to the radiation area. The power plant issue arises because in this country, different kinds of coal often contain significant levels of uranium and thorium, which can be present in the fly ash that is emitted from the stacks. We have to do an evaluation to see what types of health risks might be posed, and to see whether standards are appropriate for those types of sources.

EQUIPMENT FOR RADIATION PROGRAM

Mr. BOLAND. Will you list for the record the amount and type of equipment planned for purchase in 1980 and 1981 for the radiation program?

Mr. HAWKINS. Yes. I might add, Mr. Chairman, that I have had the radiation program staff and the air program staff in Durham, N.C., closely coordinate with each other, because obviously the methods that we use to calculate the air quality dispersion of these pollutants are very similar. We want to make sure we are using the same kinds of assumptions when we are trying to make relative risk assessments. In addition, the emission control technology is very similar, so there is a coordination between the two staffs. We will on your second question provide the instrumentation and equipment requirements for the record.

[The information follows:]

EQUIPMENT FOR RADIATION PROGRAM

The following list of equipment is slated for procurement during FY 1980 to upgrade our Emergency Response capability at EPA's Eastern Environment Radiation Facility in Montgomery, Alabama. During fiscal year 1981 a similar list of equipment will be purchased for our Radiation Laboratory in Las Vegas, Nevada. These purchases will allow EPA to maintain fully equipped Radiation Emergency Response team in both the Eastern & Western United States.

Alpha spectrometer system	$5,000
Air sampling equipment	8,000
Gas sampling Xe—Kr	8,000
Pressurized ionization chambers for 20 sites	180,000
Two-way radios for 20 sites	25,000
Field noble gas analyzers	15,000
TLD reader and TLD's	10,000
Meteorological equipment	2,000
Geli detector	18,000
Van for field chemistry	40,000
A/C generators	6,000
LBBC for van	12,000
Mobile telephone	3,000
Computer terminal	3,000
Video tape system	3,000
Carryall	12,000
Beta counting system	8,000
IPC	4,000
2 spectrometers	40,000
Miscellaneous supplies and equipment	23,000
Total	$425,000

Additionally, the upgrading & maintenance of the ERAMS System will require the following additional equipment purchase.

High resolution lithium drifted germanium detectors	$43,000
Low background beta systems	17,000
Air pumps for field stations	10,000
Miscellaneous equipment for high voltage power supply (2 systems)	5,000
Total	$75,000

RADIATION EMERGENCY RESPONSE

Mr. BOLAND. Can you explain the changes in the radiation program implementation depicted on page R-21? Also, explain how EPA reviews and tests state emergency response plans.

Mr. HAWKINS. The changes in the program reflect an elimination of the state program support account, with a compensating increase in the monitoring and analysis account. The state support account consisted of laboratory support to the states. We are now including this in the monitoring and analysis account so that all of the laboratory resources are in one place. We will continue to provide the same level of laboratory support to the states.

With respect to the reviewing of the emergency response plans, our regional office staff are members of interagency task forces which are charged with reviewing these plans. The regions will also provide prereview counseling with the states. The tests of the plans will most often involve a telephone-based simulation of an emergency, but may include a full field mobilization which stops short of actually evacuating people from the test area.

The purpose of this test is to find out whether the people and agencies, who are supposed to put into effect a radiological emergency response plan, can be reached now and can execute their roles and to confirm that the program is up to date and ready to go, if an emergency should occur.

RADIATION MONITORING

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. Thank you, Mr. Chairman.

Back in 1969 I became the first member of Congress ever to intervene legally in a nuclear licensing proceeding, and that was not involved in an objection to nuclear power per se, but a concern about a plant being (a) safe; and (b) not being detrimental to the environment. One of the things that that procedure showed, and it seems rather prophetic now looking at Three Mile Island, was that at least in our judgment the placement and the number of radiation monitoring devices and the monitoring of the monitoring devices was inadequate.

Is that EPA's responsibility now to determine the nature of the monitoring devices, the placement of monitoring devices?

Mr. HAWKINS. In a word, no.

Mr. COUGHLIN. Whose responsibility is that?

Mr. HAWKINS. For site-specific monitoring with respect to licensed facilities, it is the Nuclear Regulatory Commission's responsibility.

Mr. COUGHLIN. Does EPA establish any standards for those or not?

Mr. HAWKINS. We have a separate monitoring system for which the states do the field work. It is called environmental radiation ambient monitoring systems (ERAMS). One of the things that we are doing with that system since Three Mile Island is to convert the standby air monitoring stations to continuous operations. In the past, we used these standby air monitors only following a nuclear test shot. The last time was following the Chinese tests.

We have now decided to operate them on a continuous basis, so that we will have background levels to be used as a base line in the event of any additional accidents that may occur. EPA does not, however, have any formal responsibility for evaluating the monitoring capability around licensed nuclear facilities.

Under the Clean Air Act of 1977, we have been charged with regulating radionuclide releases to the air, where it is determined to present a hazard. It is conceivable that, under that authority, we could pursue an oversight role for the adequacy of monitoring in and around nuclear facilities. There is nothing in this budget request that supports such a role and we have no current plans to pursue such a role. If we were to do so, it would have to be in accordance with a memorandum of understanding with the Nuclear Regulatory Commission.

EPA ROLE IN RADIATION

Mr. COUGHLIN. I guess I am a little confused as to exactly what EPA's role is in radiation.

Mr. HAWKINS. EPA's role in radiation is greatest in the areas other than licensed nuclear facilities. Our role in radiation is in setting general environmental standards and we have such a standard for the nuclear fuel cycle. We provide guidance for a variety of other activities, such as medical X-rays, which is by far the largest man-made source of radiation exposure to humans in the United States.

We are developing standards for uranium mill-tailing sites, both active and inactive under that legislation. We are developing standards for the disposal of high-level radioactive waste, and we will

have standards under development standards for low-level radioactive waste as well.

There are a number of other standards which we have in progress, which I will be supplying for the record in response to the Chairman's question, but essentially the area in which we have the least role is with respect to licensed nuclear facilities.

Mr. COSTLE. Basically, with respect to nuclear power plants what we do is to set out guidance. We say that a hypothetical person is standing on the boundary of a nuclear power facility, that is, the plant boundary, what is the maximum exposure that that person ought to receive. That is essentially no more than a guide. We cannot take the next step and go inside that plant boundary and get into the business of nuclear engineering.

In the past—I am simplifying it at this point—the basic rule of thumb has been to drive that number as low as technology will allow you to drive it, because there is a general scientific consensus that there is probably no such thing as a safe level of exposure, but there is, however, an amount in the neighborhood of 160 millirems a year of background radiation that the average persons receives, so again zero risk is not a feasible thing just because of naturally occurring radioactive exposure.

Mr. COUGHLIN. Do you get into determining what allowable levels you can have in a burp from a nuclear facility, and not interfere with the overall level of radiation that is permissible?

Mr. HAWKINS. We have what we call a protective action guide for a variety of circumstances including accidental air releases. That is not a regulatory document. It is a level of anticipated exposure in which some form of protective action should be considered. In many respects it is the groundwork for radiological emergency response plans. Additionally, as Mr. Costle has explained, we have the uranium fuel cycle standard which is a fence line exposure limit. It requires the Nuclear Regulatory Commission to set design and operating specs for licensing facilities that will be sufficiently tight so that you will minimize the risk of exceeding that line exposure standard.

Mr. COUGHLIN. Thank you, Mr. Chairman.

NOISE PROGRAM

Mr. BOLAND. The 1981 request for the noise program, beginning on page N-1 is $12,927,000, a decrease of $147,000 below the 1980 current estimate. Positions decline by 6 in 1981, and full-time equivalency drops 22. The 1980 current estimate reflects tremendous changes between appropriation accounts. What about this?

Mr. HAWKINS. Yes, Mr. Chairman. I believe you are referring to the $12.8 million budget estimate for salaries and expenses, shifting to $4.9 current estimate.

Mr. BOLAND. That is true.

Mr. HAWKINS. The explanation for that is simply that in the budget statement in 1980, we failed to state the breakout in the justification between salaries and expenses and contracts. The correct breakouts are now provided, and I can read to you or provide for the record what those numbers were a year ago.

Mr. BOLAND. Provide it for the record.

[The information follows:]

NOISE PROGRAM BY APPROPRIATION

The 1980 budget estimate for the noise program was submitted using the appropriation structure under which we operated from 1973–1979:

[In thousands of dollars]

Abatement and control	11,949
Enforcement	1,004
Total	12,953

The narrative submission supporting our budget estimates spoke to the extramural (grants, contracts, interagency agreements) funds contained within the requests. Unfortunately, the noise program neglected to state the amounts of extramural funds. We do have the figures which were omitted from the submission. When you compare those amounts to the ones now shown in the 1980 current estimate, the change becomes minimal:

1980 CURRENT ESTIMATE

[In thousands of dollars]

	1980 submission—		1980 current estimate	Difference
	Budget estimate	Should have reflected		
Extramural funds:				
Environmental noise strategies and standards		4,376	4,276	−100
Noise program strategies implementation	175	3,896	3,573	−323
Noise enforcement		307	302	−5
Total	175	8,579	8,151	−428

NOISE RESEARCH

Mr. BOLAND. On pages N–3 and N–4 appear references to "investigations" of health effects and "coordination of Federal research on noise." But a noise program has not been reestablished within the Office of Research and Development. Is that correct?

Mr. HAWKINS. That is correct.

Mr. BOLAND. How can you coordinate effectively Federal noise research when you don't fund or perform research yourself?

Mr. HAWKINS. There is research that is supported with EPA resources, and which is carried in the budget. The research dollars that EPA uses essentially serves to leverage the research activities of other agencies which have many more resources that can be devoted to this effort. We find that noise research is often most focused for EPA's purposes when we have a little bit of money in it in order to help guide the contract. This approach has been quite successful. We are able to leverage quite a bit of activity from agencies like the Department of Transportation and the National Institutes of Health.

We are coordinating with Dr. Gage on the conduct of all such research. Essentially, the program is so small that both Dr. Gage and I have felt strongly that it could be more effectively managed by the noise program itself, rather than a very small fraction of a person's time in the Research and Development Office.

Mr. BOLAND. Can you provide for the record the amount of leverage that you mentioned?

Mr. HAWKINS. Yes.

[The information follows:]

COSUPPORT FOR NOISE EFFECTS RESEARCH

Noise effects research typically requires multidisciplinary efforts. This is particularly true for the non-auditory health effects area, where a combination of expertise in acoustics, biomedical, and behavioral science is required. Thus, it is with non-auditory health effects research that the greatest potential for interagency cooperation and co-support exists. EPA recognizes that it must take the lead in beginning to establish the scientific and medical significance of these effects before substantive interest from other agencies can be expected. EPA has assumed its interagency coordinating role through a number of actions.

Established Interagency Advisory Committee on Noise Effects Research, with participants from numerous governmental agencies including several NIH representatives.

Established contacts with several programs at NIH and elsewhere relevant to various categories of noise effects:

NICHHD: Effects on children/fetal effects.

NIHLB: Epidemiological and behavioral medicine sections—cardiovascular effects.

NIEHS: Physiological effects/fetal effects.

NIMH: Behavioral and performance effects/sleep.

NIOSH: Physiological effects/performance.

NASA: Behavioral/community response/sleep.

DOD: Behavioral/physiological effects.

Held workshop on noise, stress, and cardiovascular disease involving scientists from government and the acoustic and biomedical research communities.

Obtained the assistance of consultants/experts who possess outstanding credentials in research on hypertension, cardiovascular disease, and stress physiology.

Convened a working group of the National Academy of Sciences on the health effects of long-term noise exposure.

Participation in and sponsorship of national and international symposia on the health effects of noise for the purpose of promoting the dissemination and evaluation of research findings.

Preparation of multi-year research plans for selected research areas, and the presentation of these plans for review by both governmental and non-governmental experts.

Through 1980, EPA has made some progress in arranging co-support for noise effects research:

IAG with NIEHS to support primate research on noise related cardiovascular effects (NIEHS provides approximately $45K/year for four years).

Pending IAG with NINCDS to support Fels Longitudinal study on effects of noise on children (NINCDS will provide approximately $40K/year).

IAG with Air Force/AMRL to support a variety of health and welfare related studies (AMRL provides personnel and equipment).

IAG with Army/CERL to support construction noise community survey study (CERL provides personnel and equipment).

EPA, in planning research for FY's 1981 and 1982, has made estimates regarding possible levels of co-support for research on the non-auditory physiological effects of noise.

1981: $150K of co-support from NIHLB and/or NIOSH to help support animal and human experimental research or the cardiovascular effects of noise.

1982: Approximately $275 of co-support from NIHLB/NIOSH/NIEHS. Most of these funds would be applied toward the cost of conducting a small-scale prospective, epidemiological study of the adverse cardiovascular and related effects of chronic noise exposure.

NOISE PROGRAM REQUEST TO OMB

Mr. BOLAND. Is the $348,000 decrease in salaries and expenses attibutable primarily to the Agency's ZBB procedures?

60-531 O - 80 - 20

Mr. HAWKINS. Yes, it is due to a reduction in workyears. The reduction in workyears and salaries and expenses was a direct result of the priority setting that the Agency had to do.

Mr. BOLAND. What was the Agency's request to OMB for the entire noise program?

Mr. HAWKINS. The OMB request for the noise program was $13.3 million and 101 permanent full-time equivalent workyears.

NOISE REGULATIONS

Mr. BOLAND. On page N–7, the program levels are listed. Previous justifications had included regulations proposed and issued. What regulations were proposed in 1979? Which are planned for 1980 and 1981?

Mr. HAWKINS. In 1980 and 1981, the actions include final rulemaking on motorcycles, final rulemaking on buses, final rulemaking on the rail carrier, property-line standard. We did have a final rulemaking on railyard sources in 1980.

Mr. BOLAND. Were any of those regulations proposed in 1979?

Mr. HAWKINS. No. The buses were proposed in September 1977.

Mr. BOLAND. Why don't you list for the record what the regulations are that were proposed in 1979 and also which are planned for 1980 and 1981. Also, the regulations that were promulgated in 1979, and what the plans are for 1980 and 1981.

[The information follows:]

STATUS OF NOISE CONTROL
REGULATORY ACTIONS

EPA's noise control regulatory activity consists of existing promulgated and future proposed regulations.

The following noise emission regulations have been promulgated by EPA:

PRODUCT	NRM	LEVEL	EFFECTIVE DATE
Medium/Heavy Trucks	4/76	83dB	1/78
		80dB	1/82
		Reserved	1/85
Portable Air Compressors	1/76	76dB	1/78
Trash Compactors	10/79	79dB	10/80
		76dB	7/82
Interstate Motor Carriers	10/74	86(operation)	10/75
		88(stationary)	10/75
Interstate Rail Carriers	12/75	Various**	12/76
Source Regs		Various**	12/79
Interstate Rail Carriers Source Regs	12/79	Various**	1/84

EPA is presently working on the following proposed regulations:

Product	NPRM	NRM	LEVEL	EFFECTIVE DATE
Buses (Exterior)	9/77	6/80	83 dB	9/81
			80 dB	9/85
			77 dB	9/87
Buses (Interior)	9/77	6/80	86 dB	9/81
			83 dB	9/85
			80 dB	9/87
Wheel & Crawler Tractors	7/77	12/82	Various*	Under Discussion
Motorcycles	3/78	7/80	83 dB	1/82
			80 dB	1/84
			78 dB	1/87
Interstate Rail Carrier Property Line Standards	4/79	1/81	Various	1/85
Low Noise Emission Products	5/77	9/80	Various	Under Discussion

* Different sizes and horsepower
** Standing & moving standards for locomotives and rail cars

MOTORCYCLE NOISE REGULATIONS

Mr. BOLAND. Did one of the proposed 1979 regulations deal with motorcycle noise?

Mr. HAWKINS. The motorcycle noise regulation was proposed in 1978 and we are projecting a final rule by July 1980.

Mr. BOLAND. When was the comment period over with respect to final rule? It was sometime this year, correct?

Mr. HAWKINS. That is correct. The comment period was over almost nine months ago. The very long period of time is due to the fact that we have basically one project officer per regulation in the noise area. We are stretched very thin. Our project officer on the noise regulation in motorcycles went to work for Mr. Drayton, so we had to train a new project officer. It is a difficult situation. We are stretched so thin that we tend to lose our base level of expertise with one personnel decision like that.

Mr. BOLAND. Does the proposed rule affect any existing motorcycles?

Mr. HAWKINS. No, it is newly manufactured motorcycles.

Mr. BOLAND. What is the total cost and the cost per motorcycle of the proposed regulations?

Mr. HAWKINS. The costs in the final regulation will depend on what level of control is finally selected and the schedule for implementation. But we will provide you the cost calculations, either the proposed cost calculations or our updated cost calculations for the proposed levels.

[The information follows:]

COST OF MOTORCYCLE REGULATIONS

EPA's motorcycle regulation package, expected to have an effective date of January 1, 1982, is estimated to have Annualized Costs to the economy from 223.1 million to 335.1 million dollars. This represents an average price increase of 7.4 percent per unit sold and a reduction in demand in the range of 5.4 to 9.5 percent.

Of 998,186 new motorcycles sold in the U.S. in 1978, 90 percent of the units were imported from Japan while the remaining 10 percent were manufactured in the U.S. or other countries.

NOISE ECONOMIC AND HEALTH STUDIES

Mr. BOLAND. What about the estimated costs of about $224 million for the regulation package? We have information from the EPA that indicates an increase of approximately $140 for each new motorcycle manufactured. Is that about right?

Mr. HAWKINS. That may well be the cost for the final level of 1978 decibels. I would have to confirm that for the record, Mr. Chairman.

Mr. BOLAND. What economic and health studies has the Agency performed to support the proposed regulations?

Mr. HAWKINS. We do a very substantial cost effectiveness analysis for all of the noise regulations that includes a great deal of field work to calculate the types of sources that will be controlled, the costs of the technology, the number of sources, and the noise reduction levels that will be experienced at the various standards and various schedules.

I think an interesting example of the kind of work we have to do is in the railyard sources. One of the things we did was to get

aerial photography of a representative sample of all the railyards in the country so we could determine the kinds of neighborhoods in which they were located, whether there were any residences nearby, whether there were any business or commercial areas nearby and it turned out that aerial photography was the most effective way to get all that information because all the census tract data was too out of date. We then took all of that information and were able to use it in order to calculate benefits as a result of various noise strategies.

BENEFICIARIES OF MOTORCYCLE NOISE REGULATION

Mr. BOLAND. Did we ask whether or not the proposed rule is for the protection of the motorcyclist or for the pedestrians?

Mr. HAWKINS. It is intended to deal with community noise exposures; that is, the exposure of people on the sidewalk and in their yards.

Mr. COSTLE. As I recall, there is also, at least in the initial comments I saw after the proposal, a real disparity between the ability of the foreign manufacturers of the bigger bikes to meet a standard and the cost associated with that and that of at least one of the major domestic manufacturers.

Mr. HAWKINS. Yes. I think it is fair to say that the Japanese manufacturers are probably going to be meeting the noise levels without much push from EPA. That is something that they have pursued as a marketing strategy. Their goal is to broaden the base of appeal for motorcyclists so that people who don't regard themselves as motorcycle buffs don't feel taken back by the suggestion that they might buy a motorcycle. One of the things the Japanese manufacturers intended to do was adopt a marketing strategy to civilize the motorcycle.

NOISE DISRUPTED SLEEP

Mr. BOLAND. On the bottom of page N-11 we have an interesting sentence. I can provide some volunteers for this study. It says "a major sleep study to be started primarily to examine the health consequences due to noise disrupted sleep." What is the estimated length and cost of the study?

Mr. HAWKINS. The funding in fiscal 1980 is $50,000 and in fiscal 1981, $100,000.

Mr. BOLAND. I presume humans are going to be involved here.

Mr. HAWKINS. Yes. This does not have any connection to the rats listening to the FM radios.

Mr. BOLAND. What do you hope to learn from this study? I understand this is a very serious problem. It does impact upon the health of people who are aroused as a result of noises, whether the noise comes from snoring—incidentally, are you studying that too?

Mr. HAWKINS. I doubt it.

Mr. BOLAND. Tell us what you hope to learn from this study that has not been already demonstrated by other studies?

Mr. HAWKINS. I think, Mr. Chairman, what has not been demonstrated is whether there are any health consequences from sleep disruptions. We all know that if you look at the marketplace, just

go to any drugstore and you will see that millions of dollars are being spent by people who value sleep.

There is a marketplace test that says people do value sleep. We can provide you with information about the millions of dollars that are in the economy on sleep aids, although that says something about people's psychological and pocketbook evaluation of value of sleep, it doesn't say anything about whether there are significant health effects associated with sleep disturbance. So, there is a serious purpose to this. The amount of money in this research program is so small that we cannot afford to spend it on something silly or frivolous.

Mr. COUGHLIN. It is hard to believe that there has never been a study on the health effects of interrupted sleep.

Mr. HAWKINS. Well, the fact is that the whole subject of health effects of noise is one that is extremely poorly covered in terms of U.S. research.

Mr. COSTLE. The fact of the matter is that there has been a lot of European study on it. They are much more concerned about it over there. Some of that research is quite fascinating in terms of the impact on cardiovascular diseases.

They have done some epidemiological work to prepare workers under one set of noise conditions in the environment versus workers in others, and they do find a real correlation between certain kinds of diseases, bona fide health diseases in the former as opposed to the latter. There has been very little work like that done in this country. It suggests that we may in fact be overlooking a substantial health effect causing problem.

Mr. HAWKINS. I might just say an interesting but unfortunate psychological fact about noise is that we tend to make light of it because most of us feel as though we can cope with its associated annoyance.

It is because it's such a common phenomenon, we all tend to feel that its impact is simply limited to that short term. We tend to have a psychological disconnect when anyone suggests there might be a serious health effect associated noise exposure. In fact, it appears that there may well be a significant contributor to human disease.

Mr. TRAXLER. Will you contract this out?

Mr. HAWKINS. I suspect that it is being done in conjunction with another government agency.

Mr. COSTLE. It is probably through NIH, but we will check. I will have to tell you that I asked for more money from OMB for non-auditory noise health effects research than they were willing to give. So, I happen to think we have been paying too little attention to what the noise effects on health systems really are. We certainly should know more than we know now.

Mr. TRAXLER. Some of the other agencies that deal with contracting out grants have been rather skillful in designing a program, and they are extremely careful about what they entitle it. That saves them a lot of grief along the way, and you might want to closely examine their practices.

EACH COMMUNITY HELPS OTHERS (ECHO) PROGRAM

Mr. BOLAND. On page N-14 you talk about the ECHO program. That is an acronym for Each Community Helps Others. How many of these are in existence and how many are planned for 1980 and 1981?

Mr. HAWKINS. Ninety-two communities have participated in the program to date, and I will have to provide you the program schedule for 1980 and 1981.

Mr. BOLAND. Will you provide some examples of the "out-of-pocket" expenses that EPA funds in the ECHO program?

Mr. HAWKINS. Yes; I can tell you generically what they are. The ECHO program gets volunteers from cities that have active and successful noise programs and who are experienced at solving specific kinds of noise problems. They are experts in the real world.

These experts are sent to another city which has a similar kind of problem so they can help train people on how to solve the problem. The out-of-pocket costs are the costs of traveling there and the costs of meals and lodging. What is not paid, is any salary for the individuals. That is borne by the community's noise program.

Mr. COSTLE. I believe they are subject to the same travel restrictions and ceilings on travel that we impose on Federal employees.

Mr. HAWKINS. I believe that is right.

GRANT RECIPIENTS IN 1979 THROUGH 1981

Mr. BOLAND. Will you provide for the record a list of all grant recipients in 1979, 1980 and 1981. Include the amount of each grant.

[The information follows:]

COOPERATIVE AGREEMENTS

FY 1979

The EPA Office of Noise Abatement and Control established cooperative agreements with states, substate jurisdictions, localities and universities under the auspicies of the Quiet Communities Act of 1978.

The following states received grants to "start-up" a noise program in FY 1979:

Colorado	Dept. of Health	$27,990
Delaware	Dept. of Natural Resources	25,000
Florida	Dept. of Environmental Regulation	45,000
Nebraska	Dept. of Environmental Control	26,473
New Mexico	Health & Environmental Dept.	17,000
North Dakota	Dept. of Health	28,008
Ohio	Dept. of Health	27,293
Utah	Dept. of Social Services	25,000
		$221,764

These states received the indicated grant monies to fund a state ECHO (Each Community Helps Others) program in FY 1979.

California	Dept. of Health Services	$28,000
Connecticut	Dept. of Environment	35,644
Washington, DC	Council of Governments	42,750
Minnesota	League of Minnesota Cities	38,000
New Jersey	Dept. of Environmental Protection	35,109
Oregon	Dept. of Environmental Quality	28,414
Washington	Dept. of Ecology	30,000
		$237,917

The following localities received grants in FY 1979 to foster a noise program in their communities:

Brookline/Newton	Massachusetts	$12,000
Stanford	Connecticut	12,170
Teaneck	New Jersey	14,250
York	Pennsylvania	9,279
Kingsport	Tennessee	9,500
Mentor	Ohio	2,200
Akron	Ohio	12,000
Norman	Oklahoma	12,000
St. Louis County	Missouri	10,000
Thornton	Colorado	7,600
National City	California	12,000
*Boise	Idaho	14,172
		$127,171

* Grant Not Accepted

Demonstration grant monies were awarded to the following entities during FY 1979:

New Orleans	Louisiana	$ 49,774
Des Moines	Iowa	28,297
Port Authority	Massachusetts	31,610
Chicago	Illinois	25,000
Portland	Oregon	11,414
State of Oregon		33,978
State of New Jersey		34,440
National Institute of Government Purchasing		60,000
National Association of Neighborhoods		35,474
Delaware Valley Regional Planning Comm.		130,000
		$439,987

The Regional Technical Assistance Centers were established in FY 1979 and funded as follows:

	1979	1980
University of Hartford	30,000	60,000
Rutgers University	30,000	60,000
University of Maryland	30,000	60,000
North Carolina State University	30,000	60,000
Illinois Institute of Technology	30,000	60,000
University of Texas at Dallas	30,000	60,000
University of Iowa	30,000	60,000
University of Colorado	30,000	60,000
University of California at Berkley	30,000	60,000
University of Washington	30,000	60,000

EPA ECHO

The annual cost of EPA's ECHO Program, since its inception as a pilot program in FY 1977 is as follows:

FY 1977 (pilot)	40K
FY 1978	89K
FY 1979	139K
FY 1980	125K
FY 1981 (proposed)	125K

The following communities have received assistance through the ECHO Program thus far in 1980:

Portland, ME
Stanford, CT
Salem, MA
Kingsport, TN
Cumberland City, NC
St. Cloud, MN
Bay City, MI
Des Moines, IA
Salina, KS
St. Louis County, MO
Sioux Falls, SD
Rapid City, SD
Ogden, UT
Norfolk, VA
Ocean City, MD
Savannah, GA
Macon, GA
Taos, NM
Kansas City, KS
Davenport, IA
Clark County, NV
Bellevue, WA
Lewiston, ID
Raleigh, NC
Laramie, WY
Wilsonborough, PA
Ohio Department of Health
Oskaloosa, IA
Boston, MA
Phoenix, AZ
Jersey City, NJ
Philadelphia, PA
Teaneck, NJ
Akron, OH
Binghamton, NY
Minneapolis, MN
Oklahoma City, OK
Portland, OR

It is estimated that the ECHO Program will provide assistance to 65-85 communities in each of the years 1980 and 1981.

FUNDING FOR QUIET COMMUNITIES

Mr. BOLAND. How much will the quiet communities experiments in Spokane and Kansas City cost in 1980 and 1981?

[The information follows:]

STATE AND LOCAL NOISE CONTROL RESEARCH AND DEMONSTRATION PROGRAM—QUIET COMMUNITIES PROGRAM (QCP)

The Quiet Communities Program (QCP) is a multi-faceted research-oriented field study and demonstration program designed to provide EPA with a finely tuned State/local technical assistance program directed at the development of community noise programs. The program is also designed to produce an optimized noise program which will make the most efficient use of EPA and community resources, while at the same time producing the most accurate methods of gathering technical data. It will provide participants with a well structured enforceable noise program tailored to specific community needs, and will create a noise program with transferability from one community to another, regardless of differences in community size, demography, geography, and industrial make up. As a demonstration program, QCP is also designed to provide visibility of community noise control program successes in order to motivate communities to develop and initiate noise abatement programs. To the extent that the community's program is successful, the QCP program is designed to serve as an actual functioning model to other communities.

In September 1977, EPA launched its first QCP Research and Demonstration project in Allentown, Pennsylvania. This was one of three pilot two-year projects to demonstrate the application of the best available techniques for local noise control. Two additional pilot QCP demonstrations were initiated in June 1979 in Spokane, Washington and Kansas City, Missouri. These programs include a community noise assessment program, local noise control strategy development, noise control legislation, and an enforcement program. The emphasis of the QCP effort is on total community involvement and action, aided by EPA guidance and fiscal support. (EPA has funded $40,000 a year for a two-year period to each of the three QCP pilot project communities through subcontracts from several of EPA's management services contractors.) Additional financial assistance under Title IX of the Older Americans Act is enabling these pilot project communities to involve its older citizens in various facets of their respective programs.

Allentown has completed the first four stages of the program: (1) a comprehensive assessment study to identify and define their noise control needs; (2) development of a local noise control strategy incorporating the assessment data; (3) development and passage of a responsive noise control ordinance; and (4) development and implementation of responsive noise control and enforcement programs. A reassessment of the effectiveness of Allentown's noise ordinance and enforcement program is planned.

Spokane and Kansas City are currently involved in comprehensive assessment studies to identify and define their respective noise control needs. Spokane is expected to reach the second stage of the QCP program, development of a local noise control strategy, in early 1980; Kansas City in mid-1980.

The research experiences demonstrated in these three QCP pilot projects is expected to be made available to other communities in the form of a Research and Demonstration report by late 1981.

Total funding for this program, by year, has been: Fiscal year 1977—$70K; fiscal year 1978—$182K; fiscal year 1979—$0; fiscal year 1980—$150K; fiscal year 1981 (estimated)—$50K.

QUIET COMMUNITY EXPERIMENTS

Mr. BOLAND. Are any other quiet community experiments planned?

Mr. HAWKINS. Allentown, Pennsylvania, was the first. But Spokane and Kansas City are the ones currently in operation. I don't believe we have other programs planned in addition to these three for fiscal 1980 and 1981.

LISTEN PROGRAM

Mr. BOLAND. What about "Listen"? What is that?

Mr. HAWKINS. That is an automated computer-based technique that is used for the purpose of developing least cost strategies for local noise control programs.

Data is collected in the form of community noise measurement and surveys of peoples attitudes about the noise sources they encounter. This data, along with other information, is fed into the computer which is programmed to select the least cost options that the community might want to pursue in order to reduce its noise problem.

Mr. BOLAND. Mr. Coughlin?

Mr. COUGHLIN. No questions.

Mr. BOLAND. Mr. Sabo?

Mr. SABO. Thank you, Mr. Chairman.

RELATIONSHIP TO FAA'S AVIATION NOISE ABATEMENT ACTIVITIES

I am curious about the relationship of your program and the FAA's airplane noise abatement activities.

Mr. HAWKINS. That is a very interesting experiment in government design. Under the legislation that is set up to regulate aircraft noise, EPA proposes regulations. Those regulations go into the Federal Register and then the Federal Aviation Administration decides what final action to take on those regulations. They either can take no action——

Mr. SABO. What happens if there is no action? They go into effect?

Mr. HAWKINS. No. They go into a book from which I occasionally report when people inquire as to what happens to things we propose. Nothing happens. That is part of the problem.

I don't think either we or the FAA think it is a very happy division of responsibilities. Essentially what you have is a situation in which EPA has the responsibility to propose but never take final action on any regulation. Since the chickens really never come home to the roost at EPA, there is a tendency to not ask perhaps the hardest questions one might about the proposal. The proposal goes forward, despite our best efforts in a way that perhaps has not anticipated all the real world problems.

It hits the FAA. They spot the real world problems. They have not been responsible for developing the regulation in the first place, and they don't like to be in the position of perhaps appearing to back down from what EPA has proposed. Consequently, you get a very difficult situation.

The staff at EPA feels frustrated and the staff at FAA feels they are being put in a bad light by the EPA staff. It is a wonder we have much in the way of effective aircraft regulation at all.

Mr. SABO. Do they have to accept or reject your proposed regulations? Do they have authority to modify?

Mr. HAWKINS. They can do any one of those three things—accept, reject or modify.

Mr. SABO. What is the track record of what has happened?

Mr. HAWKINS. I can provide that for the record. I believe there have been eleven submissions to FAA. Please understand I am not

making a complaint about FAA interests or motivation or activity. It is just a very difficult situation.

I can provide a copy for the record of the specific noise regulations which we have submitted for FAA action and the FAA disposition for those submissions.

Mr. SABO. Offhand, do you know what the ratio is approximately?

Mr. HAWKINS. Yes. We have transmitted eleven proposals. They have taken final action on one and portions of three others. They have decided not to take action on five and portions of three others. They have held public hearings on the remaining two and not decided anything.

Mr. COSTLE. Over what period of time is that?

Mr. HAWKINS. This is since 1974.

Mr. SABO. Could I get a copy of that?

Mr. HAWKINS. Yes. There is not much in the way of resources in that activity in the 1981 budget, as you might anticipate from my rather frustrated dissertation.

[The information follows:]

STATUS OF AVIATION NOISE REGULATION PROPOSED BY EPA TO FAA

EPA is required to propose aircraft noise regulations to the FAA for evaluation and consideration for promulgation. To date, FAA has promulgated four such proposals, issued decisions not to prescribe five proposals, and taken no action on two proposals. The status of all such proposals made to FAA by EPA is as follows:

AVIATION NOISE REGULATIONS PROPOSED BY EPA TO FAA

Title	Date to FAA	Status/Decision
Noise Standards for Propeller Driven Small Airplanes	6 Dec 74	Decision not to prescribe, 23 Dec 1976
Noise Abatement Minimum Altitudes For Turbojet Powered Airplanes in Terminal Areas	6 Dec 74	Decision not to prescribe, 29 Nov 1976
Civil Subsonic Turbojet Engine-Powered Airplanes: Noise Retrofit Requirements	28 Jan 75	Resulted in "retrofit/ replacement rule" which is basically similar to EPA proposal. 23 Dec 76
Fleet Noise Level Requirements	28 Jan 75	Decision not to prescribe, 29 Nov 76
Aircraft Noise Requirements: Civil Supersonic Airplanes	27 Feb 75	Resulted in decision basically similar to EPA proposal.29 June 78
Reduced Flap Setting Noise Abatement Approach for Turbojet Engine-Powered Airplanes	29 Aug 75	Decision to prescribe, 29 Nov 76
Visual Two - Segment Noise Abatement Approach for Turbojet Engine-Powered Airplanes	29 Aug 75	Decision not to prescribe, 29 Nov 76
Two Segment ILS Noise Abatement Approach for Turbojet Engine-Powered Airplanes	29 Aug 75	Decision not to prescribe, 29 Nov 76
Airplane Noise Requirements for Operation to or from U.S. Airports	13 Jan 76	Resulted in decision basically similar to EPA proposal. 29 Jun 78
Noise Levels for Turbojet Powered Airplanes and Large Propeller Driven Airplanes	1 Oct 76	No Action by FAA to Date
Airport Noise Regulatory Process	22 Oct 76	No Action by FAA to Date
Takeoff Procedures for Aircraft Noise Control	Project Report in Preparation	
Noise Standards for Helicopters	Under Evaluation	
Noise Standards for Short and Reduced Takeoff and Landing Aircraft (STOL and RTOL)	Under Evaluation	

PHYSICAL IMPACT OF NOISE

Mr. COSTLE. A very interesting fact about noise is that it is one of the very few biological effects where the reaction of the human body is absolutely involuntary. You hear a sharp sound and your system involuntarily reacts to it. It is not something that you can physically control.

So, even though you might adjust your mind to the fact that there is a certain noise level, it might be causing your system to generate more adrenalin, and it will just continue to do so.

Mr. HAWKINS. Yes. I think that Mr. Costle's point is closely related to what I was saying before, psychologically we may feel we are getting along with noise but in fact our bodies, are still reacting even though we are not reacting on a conscious level. Our blood pressure may be increasing, our cardiovascular system may be reacting in a dangerous and unhealthy way.

Mr. COSTLE. There is a lot we don't understand about noise. Interestingly, the more the Europeans do research on it, the more concerned they are about it. Most of the literature today is essentially European.

INTERDISCIPLINARY PROGRAM

Mr. BOLAND. We will turn to interdisciplinary program on page I-1. The 1981 request is $27,241,000, an increase of $900,000 above the 1980 current estimate. Looking on page 1115 of the 1980 hearing volume, I note that the 1980 interdisciplinary request was $53,102,000 and that permanent positions totaled 244. Why don't those figures appear in the 1980 budget estimate column on page I-1?

INTEGRATED ENVIRONMENTAL ASSISTANCE

Dr. GAGE. The major difference is in the area of integrated assistance. Mr. Drayton can respond to that.

Mr. BOLAND. Shouldn't that have appeared in that column?

Mr. DRAYTON. In terms of the budget estimate for 1980, it should be there. This is part of the President's budget request, yes.

Mr. BOLAND. Then why aren't they there?

Dr. GAGE. Shown on page I-5, the request for integrated environmental assistance was deleted because the authorization for integrated environmental assistance was not passed. I believe that whole column was modified, possibly inappropriately, but at least modified to delete reference to the integrated environmental assistance.

Mr. BOLAND. That is the amount you requested last year. Well, in any event, you will put the correct figure in there next year.

CARCINOGEN ASSESSMENT GROUP

Page I-8 indicates that the Carcinogen Assessment Group conducted a risk assessment in 1979 on 2,4,5-T which led to an emergency suspension. Page P-42 in the pesticides program indicates than "major contracts for scarce risk and benefit analytical expertise were put in place in 1979." Since the Pesticides Office

was also doing this type of work, why did the CAG get involved in the 2,4,5-T issue?

Dr. GAGE. Let me clarify their role. The Carcinogen Assessment Group has been doing carcinogen assessment activities for the Office of Pesticides program as well as for the other regulatory development offices in the Agency. There were, of course, many factors that were considered in the 2,4,5-T suspension, such as the possible relativity of 2,4,5-T to premature abortions or miscarriages. But there definitely was a concern that there was some evidence of carcinogenic potential in the 2,4,5-T and particularly associated with the dioxin contaminants. CAG did the analysis for the office and passed it over as part of the regulatory package.

ANTICIPATORY RESEARCH PROGRAM

Mr. BOLAND. As you know, the Committee has not been a big supporter of this program in the past.

Dr. GAGE. Well, I believe you are probably pointing toward the anticipatory research program.

Mr. BOLAND. Our position is not that it does not have merit, but because it appears that the Agency does not seem to have a current policy or coherent policy for determining whether a program belongs in the interdisciplinary area or in a specific medium.

Too many projects seem to wind up in more than one area or flow in and out from year to year. What about that?

Dr. GAGE. I think in the past couple of years there was probably a reasonable basis for that charge. What we tried to do in putting together this fiscal year 1981 budget is to make very clear any interconnections or overlaps between the anticipatory research budget category and other parts of the agency.

In a couple of instances we are carrying research funds both in the anticipatory research budget category and in another research budget category. For instance, in acid rain research, we are carrying research funds in the energy budget, as well as the anticipatory research budget. We have very carefully coordinated the development of the entire acid rain program and have assured ourselves that there is no overlapping in funds. It has been possible, through the use of anticipatory research funds from several parts of the program, to develop the very strong program that we have going into fiscal year 1981. Without the use of these funds we would not have been able to move as quickly as we have been able to in mounting the acid rain research program.

ENVIRONMENTAL CRITERIA AND ASSESSMENT OFFICE

Mr. BOLAND. For the record, will you relate the work of the Environmental Criteria and Assessment Office (water) on the criteria for the 65 pollutants to that of the Office of Research and Development (in water quality) and the Office of Water and Waste Management? You talk about this on I-9, third paragraph.

Mr. COSTLE. Yes. In fact, that would be a good way to show that mix.

[The information follows:]

Toxic Pollutant Criteria Development Document

Water quality criteria for the 65 pollutants listed in Section 307(a) are being developed jointly by two offices within the Office of Research and Development (ORD) and within the Office of Water and Waste Management (OWWM).

The Environmental Criteria and Assessment Office (Water) in ORD, is responsible for the preparation of the human health portion of the toxic pollutant criteria development documents that EPA is preparing as part of its toxic pollution control program. The Environmental Criteria and Assessment Office (Water) provides the scientific information and develops criteria for the protection of human health from the presence of these pollutants in ambient water or in aquatic organisms found in these waters and consumed by man. The Office of Research and Development, through its Environmental Research Laboratories, is also preparing scientific information and criteria for the protection of aquatic life from the presence of these 65 pollutants in ambient water.

The Office of Water and Waste Management, through the Criteria Branch of the Criteria and Standards Division, is responsible for the technical accuracy of both sections of the criteria documents, their conformance to Agency format and policy, and for the coordination of effort between the preparers of the two sections of the documents as well as between other Agency offices impacted by ambient water criteria development. The Branch is also responsible for the preparation of an introductory section of the criteria document, for its publication, including a Federal Register notice of availability, and the development of policies for implementing these criteria.

ANTICIPATORY RESEARCH PROGRAM ACTIVITIES

Mr. Boland. The anticipatory research program is described beginning on page I-11. It is comprised of three main elements: center support research, innovative research and strategic assessment and special studies. For the record provide the positions and funds devoted for each activity in 1979, 1980 and 1981.

The 1979 acid rain program is addressed on page I-13. For the record provide the amounts devoted to acid rain research in 1979, 1980 and 1981 by media.

Dr. Gage. Yes, I will.

[The information follows:]

Anticipatory Research Program

The Anticipatory Research Program is comprised of three main elements: Center Support Research, Innovative Research and Strategic Assessment and Special Studies. The resources for these three elements in 1979, 1980 and 1981 are:

	1979		1980		1981	
	Dollars (x1000)	Permanent positions	Dollars (x1000)	Permanent positions	Dollars (x1000)	Permanent positions
Center Support Research	1,125	5	2,420	5	2,770	5
Innovative Research	2,256	37	3,141	40	3,275	24
Strategic Assessment and Special Studies	5,776	27	9,178	33	8,700	29
Total	9,157	69	14,739	78	14,745	58

Acid Rain Research

The amounts devoted to acid rain research in 1979, 1980 and 1981 by media are:

[In millions]

MEDIA	1979	1980	1981
Anticipatory	$1.7	$2.4	$2.5
Energy	1.6	2.9	4.4
Air	0.6	0.2	
Total	3.9	5.5	6.9

PROPOSED RESEARCH CENTERS

Mr. BOLAND. The four research centers proposed in 1980 are not the same four proposed in the 1980 justifications last year. Why is that?

Dr. GAGE. We had extensive review of the numerous proposals that had been made for the environmental research centers. We have consulted with panels of the National Academy of Sciences, with the President's Office of Science and Technology Policy and with our own Science Advisory Board. We have, in this year's submission, the very best suggestions that we have been able to garner from a variety of sources.

Mr. BOLAND. The Ultimate Waste Elimination Research Center—that was proposed last year. The Intermediate Transport Research Center, that was proposed last year, and the new one is the Ecosystems Research Center. I take it that the Marine Sciences Research Center is a new one, too, is that correct?

Dr. GAGE. Yes. Those two are the new ones that have emerged through consultation with a variety of scientists.

Mr. BOLAND. What is the purpose of the Ecosystems Research Center?

Dr. GAGE. We have had a longstanding criticism from our Science Advisory Board that we have not put more research effort into the area of understanding what is really happening in natural ecosystems once stressed by environmental pollutants.

Most of our work, while it has many times gone under the title of ecological effects research, has really been environmental biology. We take a certain species of fish and subject it to a certain poison in a tank and then we try to extrapolate those results to what it might mean in the world out in nature. We have done very little work in looking at either scaled models of national ecosystems or natural ecosystems themselves.

Our research on ecosystems is in response to an accumulation of five years of very strong criticism from our Science Advisory Board to undertake, with a major university, a system which really begins to look at the complications that come from many interactions within an ecosystem.

CONGRESSIONAL REDUCTION TO ANTICIPATORY RESEARCH PROGRAM

Mr. BOLAND. Last year the Congress reduced the anticipatory research program by $2 million in 1980. Yet, the 1980 plan in the 1981 justifications has nearly all the same components as last year. Is that correct?

Dr. GAGE. Essentially that is right.

Mr. BOLAND. Where did the Agency apply the $2 million reduction?

Dr. GAGE. The $2 million reduction came directly out of the anticipatory research program. What we had to do was scale down each of the components within that program to absorb the $2 million cut. So we ended up actually deferring projects.

Mr. BOLAND. So, you were spending less on each of the component research areas, I take it.

Dr. GAGE. Yes, that is right. As you can see on page I-11, the reduction in the total research funds in this category dropped from $16,883,000 to $14,739,000. That in fact reflects the $2 million reduction taken in the anticipatory research account.

Mr. BOLAND. Page I-11, in the middle of the first paragraph, indicates a transfer of personnel and projects to other media. Is this one way of circumventing Congressional action on this activity?

Dr. GAGE. No. This transfer is proposed for fiscal year 1981. As we will discuss in the next media, Toxic Substances, approximately 20 positions are to be transferred out of anticipatory research to move over and address problems related to the toxic substances category. So, this is not a transfer already effected, but one proposed for 1981.

NUMBER OF ACTIVE RESEARCH PROJECTS

Mr. BOLAND. Page I-22 indicates the Agency has 2,500 active research projects. Page I-4 indicates that there are more than 3,000. What is the correct number of projects?

Dr. GAGE. I would say that is just a problem of incorrect drafting. I can have that for you.

Mr. BOLAND. What do we have, 2,500?

Dr. GAGE. Can we provide that for the record?

Mr. BOLAND. All right.

[The information follows:]

RESEARCH PROJECTS

EPA's very large research program includes projects which take several years to complete as well as others which are initiated, conducted, and completed in a matter of months. Hence, at any given time, the number of active research projects being conducted under the auspices of our Office of Research and Development can range from as few as 2,500 to as many as 3,500. The discrepancy in the numbers submitted in our recent justification results from this fact. That is, both of the numbers in the justification were correct at slightly different times.

As of early March, 1980, the Office of Research and Development has 3,312 active research projects. This count includes our contracts, grants, interagency agreements, cooperative agreements and in-house research projects.

TOXIC SUBSTANCES

Mr. BOLAND. Mr. Traxler?

Mr. TRAXLER. No questions, Mr. Chairman.

Mr. BOLAND. Mr. Sabo?

Mr. SABO. No questions, Mr. Chairman.

Mr. BOLAND. We will move to the toxic substances program, beginning on page TS-1. The 1981 estimate is $106,002,000, an increase of $11,356,000 above the 1980 current estimate. Positions

increase 86 in 1981 to a total of 743. Full-time equivalency changes from 765 in 1980 to 854 in 1981.

PERSONNEL PROJECTIONS

Let's look at the personnel situation for a minute. Actual 1978 figures were well below target. Last year the Committee questioned the Agency on this and on the likelihood of attaining the revised 1979 personnel targets. The original 1979 permanent position goal was 574, was later revised to 556.

Mr. Jellinek, I quote you on page 459 of the 1980 hearing volume. "We have very high confidence that we are going to be able to have the number of personnel on board that we are projecting for 1979 and for 1980." Now, you made basically the same statement a moment later in that hearing. But I see on page on TS-1, that actual permanent workyears were 377, a shortfall of 179, or 32 percent. The Committee thought that your original 1979 estimate was too high and they reduced it marginally. But with hindsight a much larger reduction would have been in order. What about this?

Mr. JELLINEK. The only thing I can say is that we were overly optimistic in projecting what we would make in 1979. I think, however, that having the target to shoot for helped us build some momentum and that momentum has now been reached. We are delivering commitments averaging close to 50 hires per quarter. We currently have on board nearly 400 people and expect to go over that next month, in fact, this month.

We do expect to get very close to delivering not only our positions, but also our full-time equivalency by the end of this year. I think our latest projections bring us close to 95 percent or so in 1980. Our personnel office, which takes a much closer look at these things than we do, agrees with our projection. With the personnel office, we have worked out a specific hiring plan, and we are meeting or beating that hiring plan. So the numbers are developing for 1980.

Mr. BOLAND. Were you affected by the freeze?

Mr. JELLINEK. In 1979 we were. We were slowed down by the freeze and the space situation.

Mr. DRAYTON. I would like to add that through January of this year this office met 80 percent of its year-end objective of 526 positions. That is for the whole media.

Mr. BOLAND. Do you have personnel goals by month for 1980?

Mr. JELLINEK. That is right.

Mr. BOLAND. You gave us some figures a moment ago. Where do you currently stand? How many people are on board?

Mr. JELLINEK. As of the end of 1979, we had 353 people on board. As of the end of March, we expect to have 420 on board. We have right now approximately 390 or so, I don't have an actual figure for today, but I believe that last week it was around 390.

FISCAL YEAR 1980 WORKYEARS

Mr. BOLAND. What about the number of workyears? How many workyears have you funded so far this year?

Mr. JELLINEK. I don't have the exact figure for that right now.

Mr. BOLAND. You can supply that for the record.

Mr. JELLINEK. We expect to make about 95 percent of our workyears for 1980.

[The information follows:]

Toxic substances program workyears funded as of February 9, 1980

Office of Pesticide Toxic Substances	140
Office of Enforcement	15
Office of Research and Development	44
Regional offices	33
Total	232

FISCAL YEAR 1979 PLANNED VERSUS ACTUAL RESOURCES

Mr. BOLAND. The 1979 plan submitted in the 1980 budget was $58,951,000. Actual was $61,531,000. Is the difference soley attributable to prior year unobligated balances or is it a combination of that and using unnecessary personnel compensation funds for other items?

Mr. JELLINEK. I can't speak for the entire media. For my program, the 1979 current estimate was $41 million and we came in at $41.4 million. So perhaps Bill Drayton or someone else can answer for the rest of the media.

Mr. BOLAND. Let me suggest that certain appropriation bills have carried a provision which prohibits using funds provided for object classes 11, 12 and 13 for any other purpose. I don't suppose you would have any problems if we included such a provision in this bill, would you?

Mr. JELLINEK. I would not.

CONGRESSIONAL REDUCTION APPLIED TO HEALTH AND ECOLOGICAL EFFECTS

Mr. BOLAND. On page TS-9 the health and ecological effects activity was reduced $5 million by Congress in 1980. Will you supply for the record how that reduction was applied?

Dr. GAGE. I will, Mr. Chairman.

[The information follows:]

HEALTH AND ECOLOGICAL EFFECTS REDUCTION

The $5 million reduction in the health and ecological effects program was applied against the $15 million toxic substances public health initiative. This decrease reduced the health effects activities by $2 million and ecological effects by $3 million.

The activities impacted by this reduction in fiscal year 1980 include the development of testing methods to predict exposures to environmental chemicals and their effects, the development of short-term testing methods designed to predict acute and chronic toxicity of chemicals, and the development of methods to predict the movement and fate of chemicals in the environment from release to exposure.

HEALTH AND ECOLOGICAL EFFECTS PROGRAM INCREASES

Mr. BOLAND. The program reflects a significant increase in 1981—$8,263,000. Does this include funding for programs not done in 1980 due to the Congressional reduction?

Dr. GAGE. In part, Mr. Chairman. In planning for our fiscal year 1980 activities, we developed a multi-year plan which included the

full funding we requested in the President's budget for fiscal year 1980. Obviously given the $5 million cut, we had to defer and, in fact reorient, a number of projects. Therefore, some of the activities included in the fiscal year 1981 are naturally the best activities we feel we should undertake to support the implementation of the Toxic Substances Control Act.

Mr. BOLAND. Why are positions increasing by 53 in this activity for 1981?

Dr. GAGE. This is an allied move to shift more of the resources in the Office of Research and Development to support the Toxic Substances Control Act.

As I believe you yourself pointed out several times earlier in the hearings, the preponderance of staff within the Agency is still in the traditional air and water accounts. By taking some fairly stringent measures during the past budget cycle we were able to reprogram people from the pesticides account, from the water quality account and from the anticipatory research account to the support of Toxic Substances Control Act activities.

AUTHORIZATION COMMITTEE RESPONSES TO FISCAL YEAR 1981 REQUEST

Mr. BOLAND. Last year the House Authorization Committee on Science and Technology, as I understand it, reduced this account. What kind of response have you had this year to your request?

Dr. GAGE. In the hearing before the House Authorization Committee, Mr. Chairman, we received no questions whatsoever on this particular account. One of the factors which that Committee quoted last year as justification for the reduction was the lack of leadership in our Health Effects Research Program. That deficiency has been adequately made up in the past year. We have Dr. Vilma Hunt who is a very enthusiastic and hard-working person bringing some real leadership to our Health Research Program. So, I don't know of any other objections the Authorization Committee could have at this time for that work.

RISK ASSESSMENT

Mr. BOLAND. Turn to page TS-13, on the bottom of the page. How does the risk assessment performed under the Toxics Program differ from the risk assessments performed under Interdisciplinary Research which we discussed earlier?

Dr. GAGE. The risk assessment performed under Interdisciplinary work is really a synthesis, analysis and interpretation of existing research results, both those developed from within the Agency's research program and those developed from other research programs. In other words, it is an analysis basically conducted on paper.

The work described here on the bottom of TS-13 is actually in-laboratory research experiments using animal test models to determine the effects of exposure to toxic substances.

FINANCIAL SUPPORT TO NATIONAL TOXICOLOGY RESEARCH

Mr. BOLAND. Turn to page TS-15, the second paragraph. What financial support does the EPA plan to provide to the National Center for Toxicology Research in 1981?

Dr. GAGE. The Agency plans to provide, as we have since fiscal year 1979, $5 million in support. ORD's portion of that is $4.5.

Mr. BOLAND. Do you know what percentage of the total funding that represents?

Dr. GAGE. That represents about 20 percent. The Food and Drug Administration provides the rest of that support.

MATHEMATICAL MODELS DEVELOPMENT AND VALIDATION

Mr. BOLAND. On page TS-17, why do you need an additional $1 million in 1981 to expand efforts to develop and validate multimedia mathematical models?

Dr. GAGE. One of the real pressing needs for development under the Toxic Substances Control Act is in the area of movement, transport and fate of toxic substances in different parts of the environment.

Mathematical modelling is being done to develop computer programs which can be used by industries when they produce a new chemical. They can insert the chemical and physical properties of the chemical into the computer program and then we can begin to simulate how that chemical might move through the environment, be degraded in the environment, bioaccumulate, whatever.

PREMANUFACTURER MODIFICATION COSTS

Mr. BOLAND. Turn to toxic substances strategies on page TS-34. The Agency proposed premanufacturer notification requirements in January 1979. Is that correct?

Mr. JELLINEK. That is correct.

Mr. BOLAND. And when were final regulations issued?

Mr. JELLINEK. We reproposed in October and we expect to promulgate final regulations later this year.

Mr. BOLAND. Arthur D. Little Company, which performed EPA's economic impact analysis, concluded: "50 percent of chemicals currently being introduced for commercial sale would not be introduced if the TSCA notification costs are $10,000 per chemical." But Little's and many industry estimates are that costs of completing the proposed EPA notification requirements may be more than $10,000. Does the final rule take these economic factors into consideration?

Mr. JELLINEK. The Little study was a preliminary study done on a very limited data base, and making some very constraining assumptions. The latest updated economic analysis by Arthur D. Little, done by the same team, has concluded that the cost of filling out that notice form would range from around $1,200, for the mandatory parts of our notification form, to approximately $8,000 or $9,000, if firms claim information to be confidential and provide appropriate substantiation.

We are doing some very detailed and rigorous economic analysis to help us complete this regulatory process. As a matter of fact, the

reason why the regulations will not be promulgated until later this year is because we are waiting for further economic analysis.

Mr. BOLAND. If the notification costs run that high, would the companies refrain from the introduction of commercial sale?

Mr. JELLINEK. I think that if they ran as high as $1,000 to $9,000——

Mr. BOLAND. Yes. You say $1,000 to $9,000.

Mr. JELLINEK. Yes.

Mr. BOLAND. If they ran $5,000, to $9,000.

Mr. JELLINEK. It will depend on the nature of the company and the nature of the chemical that they intend to introduce. If the chemical can't make enough money to make that money back, they might very well refrain.

TSCA CHEMICAL INVENTORY

Mr. BOLAND. When did the Agency issue initial TSCA chemical inventory?

Mr. JELLINEK. The inventory was published in June of 1979.

Mr. BOLAND. What chemicals did that include?

Mr. JELLINEK. The printed inventory included somewhat over 43,000 chemicals. It was supplemented and now there are over 50,000 chemicals on the inventory.

INTERAGENCY TESTING COMMITTEE

Mr. BOLAND. Turn to page TS-38. How many times has the Interagency Testing Committee recommended review of a chemical?

Mr. JELLINEK. The Interagency Testing Committee has made five reports totaling 38 chemicals or groups of chemicals. The groups of chemicals include close to 1,500 isomers, which are individual chemicals.

INFORMATION INTEGRATION REPROGRAMMING

Mr. BOLAND. Explain the $4,962,000 reprogramming mentioned on page TS-43.

Mr. JELLINEK. Yes. This was a reprogramming within the toxic substances program itself. It was not a reprogramming from our program to other programs and frankly was done to correct an imbalance. When we originally budgeted, we had not budgeted enough money to support risk assessments or testing rule development with appropriate literature searching, monitoring, and computer support, and we discovered that in order to produce the same work outputs, we had to shift the internal funding within our own program.

PUBLIC PARTICIPATION IN TOXIC SUBSTANCES PROGRAM

Mr. BOLAND. What is the total amount that the toxic program has earmarked for public participation in 1980 and 1981.

Mr. JELLINEK. In 1980 it is $687,000.

Mr. BOLAND. In 1981?

Mr. JELLINEK. In 1981. We have not earmarked anything for public participation.

Mr. BOLAND. Mr. Coughlin?
Mr. COUGHLIN. Thank you, Mr. Chairman.

REGULATION OF CHEMICAL SUBSTANCES UNDER TSCA

How many substances will EPA regulate under TSCA during fiscal year 1981?

Mr. JELLINEK. It depends on how you count them. We have recently, for example, proposed a regulation under Section 8(a) which requires industry to inform us how 2,300 chemicals are used and how people are exposed to them. We expect to promulgate that regulation in 1981, and so there are 2,300 chemicals there.

We expect to have at least 400 new chemicals in 1981. We expect to act on a significant proportion of them, either by stopping them in order to develop better information before they enter the market, or by following up on chemicals which we believe can enter on the market, but have some question that needs to be pursued in the future.

We expect of the 400 new chemicals in 1981 that approximately 25 percent of them will require some kind of follow-up regulatory action by EPA.

In 1981 we expect to promulgate a regulation that will label chemicals that either cause acute toxicity or that are carcinogens. We expect that 200 carcinogens will be covered by regulation and several thousand chemical substances will be covered by the acute toxicity.

That is several thousand chemical substances, and 200 carcinogens translate into literally hundreds of thousands of different products. So it is a bunch of apples, oranges, pears, beef steaks, and cheesecakes that are pretty hard to boil down into one unit of measure, but we expect to affect in one way or another thousands of chemicals.

The testing rules we expect to promulgate in 1981 cover 14 different chemicals that are manufactured by nearly 30 manufacturers, that involve over one billion pounds of production annually, and that involve two million workers. So there are various ways, using the different sections of TSCA, that we will affect not only individual chemical substances but categories of chemical substances, manufacturers and workers.

We expect that our activities over this year and the next will have a major influence on the behavior of the chemical industry, which is what TSCA was designed to do.

Mr. COUGHLIN. You have a lot of work cut out for you. Scientific evidence, epidemiological studies and the like don't always allow for clear-cut conclusions. In fact, there is a great deal of differing opinion on the nature of hazards, dose responses, thresholds and so forth.

Does EPA plan to balance these differences out in trying to develop regulations?

Mr. JELLINEK. That is the $64,000 question, Mr. Coughlin. TSCA does, as you know, explicitly call for balancing risks and benefits. The test for taking action under TSCA is unreasonable risk and that means not only looking at the risk, but looking at the benefits to determine whether the risk is indeed unreasonable.

What we intend to do is the best job we can to identify and quantify the risks to health and the environment of the chemicals we are examining, and to identify and quantify the social benefits and the economic benefits of those chemicals.

Mr. COUGHLIN. Will some scientifically qualified panel make this final decision?

Mr. JELLINEK. The final decision is really not a scientific decision. It is a matter of weighing scientific data on the one hand and economic data on the other, data that once again are in units that are not commensurable, and deciding subjectively, to be perfectly candid, whether the risks outweigh the benefits or the benefits outweigh the risks.

Congress gave that unenviable job to the gentleman sitting next to me. There is a tremendous amount of science that goes into the data that we use to make our ultimate balancing decision.

We have not only very highly qualified scientists on our staff and in the Office of Research and Development, but we also have a Science Advisory Board, which consists of non-government scientists who look over our work.

But in a final analysis, we must balance that science with all its uncertainties against the economics and other benefits of the chemical with all its uncertainties and make a decision which is, as I say, not a scientific or economic decision, but a small-p political decision in the best sense of the term.

Mr. COUGHLIN. Will there be some appeal mechanism from these decisions?

Mr. JELLINEK. Oh yes. There are always appeal mechanisms, and the ultimate appeal, of course, are the courts.

CHEMICAL SUBSTANCES INFORMATION NETWORK

Mr. COSTLE. Because there are a wide variety of and different kinds of data bases, national health is one—I asked Steve's people to develop an inventory data base. As a matter of fact, I think there are six major data bases on what we now know about existing chemicals this year. We developed this year a rather clever computer software program that allows us to punch into any of these six data bases.

These computer programs are scattered all over the country, and they go on to different agencies as well as our own. That computer system automatically keys to the particular data base and its computer.

In other words, it automatically translates into whatever computer language that particular data base is in and also retrieves the data. It has saved us I suspect an enormous amount of money in terms of trying to aggregate those data bases into a single data base in the same computer language.

I went to a demonstration of that system about a month ago. The impression I carried away was that in many instances we know an awful lot. There has been an awful lot of research done on individual chemicals.

As much as anything, in order to make a sound scientific judgment about a particular chemical, you need a single data base. If

you are interested, we would be happy to demonstrate this system for you.

The system is providing us with a central way to get at chemical data including data from our emergency spill response program. We have chemicals that we know are transported in very large quantities that are frequently involved in spills, and local communities respond to those spills without necessarily knowing what it is they are dealing with or how to deal with it.

You can now plug in not only to the list of chemicals that are the most likely ones to be spilled, but if you happen to be dealing with something more exotic, you can now tie into the system that Steve has now set up and get a pretty quick look at what is known in these central libraries of chemical information.

It is a major breakthrough I think in terms of access to scientific data and research studies.

Mr. JELLINEK. That appears in your book as the chemical substances information network.

ADVANCE NOTICE OF PROPOSED RULEMAKING

Mr. COUGHLIN. Regarding the ANPRM, the more drawn out this process the more damaging it could be to nonhazardous products. How long do you feel that this regulatory proceeding would take, on an average?

Mr. JELLINEK. Is this in general or for some particular chemical?

Mr. COUGHLIN. On average.

Mr. JELLINEK. The ANPRM is a useful mechanism for alerting the public and the industry to the fact that we are seriously considering regulating a chemical. We use it when we have been able to decide at the early stages that we know enough at least to ask questions of the public and the industry.

We don't use it if we think that we know enough to propose a rule, and therefore can cut out the ANPRM stage, or that the potential hazard of delaying or waiting for the ANPRM is so great or great enough that we shouldn't go through that particular stage.

Mr. COUGHLIN. How long do you think that an average ANPRM proceeding would take?

Mr. JELLINEK. I would say it adds roughly six months to the regulatory process.

Mr. COSTLE. It is along the lines of Mr. Traxler's question yesterday. It is an opportunity in a nonadjudicatory setting for us to put our cards on the table and say we have concerns about this chemical. Here is what we think we know about it—what do you think. It is really a preliminary step before you actually go into a formal rulemaking.

A lot of issues can get resolved in that informal process. It is a chance really to get all of the data on the table, and try to sort it out in a fairly open way. How long that process can take is probably not a critical path item.

In fact, to the extent that you can resolve of questions about a chemical through that process as opposed to a much more expensive formal adjudicatory procedure, you are better off.

It is really in the nature of providing an open forum for all the public concerned about this, to try to say what do we really know

and what are our real concerns, and should this be regulated or not.

SUPERFUND

Mr. COUGHLIN. Mr. Chairman, the justifications contain a tab in the Superfund that indicate they will come forth at a later time when the authorization legislation has been passed in that area. I intended to ask some questions in that area and did not realize that there are no questions on it. I will just ask very brief questions at this time in that area.

We discussed some of the problems of waste dumps and so forth last year, and where the funding would come from for those. At that time we were waiting Superfund legislation, and we are waiting for it this year and may be waiting for it next year at this time.

We discussed alternative funding sources or immediate funding sources for those where there were critical problems. I cited one in Chester, Pennsylvania, which is not in my district, but is nearby, and where something really needs to be done quite immediately.

What is being done where we have really critical hazardous waste sites, where some action needs to be taken immediately? Are we getting funds for that? Are we doing something about it or are we just passing the buck?

Mr. COSTLE. It is a minimal kind of response. To the extent that when we get a spill situation into navigable waters which clearly falls under Section 311 of the water act, we have been able to tap into 311.

Of course, we have to work with the Coast Guard, and we don't always see eye to eye on what should be eligible and what shouldn't be eligible. We don't have the absolute final call on that. It is a joint call on that fund.

The Section 311 authority is available only in certain kinds of circumstances. You find a Love Canal—and I ought to point out that they have been very resistant to using 311 for abandoned sites. They have been more elastic in their definition in recent months.

Mr. COUGHLIN. So, even though we have significant leaching or toxic material going into, escaping, going into the ground waters or what have you, we are really doing nothing about it.

Mr. COSTLE. We really aren't. Basically what we have are the kinds of funds that you gave us for investigations, and for enforcement purposes under Jeff, and that isn't the kind of corrective action or ameliorating action that you need to be in a position to take.

The Superfund will put us in a position to take action when we come across an abandoned dump site or a situation where the culpable party can't be found or denies responsibility by refusing to expend any of his own money and we have to seek recovery.

Right now, unless it can be qualified under Section 311, the only recourse we have is to find somebody who can be held financially responsible, and persuade him to do something. At an orphan site, by definition, you don't have such a person. We badly need that fund, and I suspect what is going to really trigger it, if it doesn't come right this spring, the time it will come ripe is when we have the first data in from the manifest system this fall, and communi-

ties find out they have got hazardous waste dumps and they didn't know where they were.

I can promise you there is going to be an eruption of concern on the part of these communities about what is there, what does it mean, what do we do about it. Is it leaching? My God, help. If we haven't gotten Superfund by then, we are going to look pretty silly, I think, as a government.

Mr. COUGHLIN. There is just no other way even in emergency cases that you can really treat this.

Mr. COSTLE. Not really, not that I am aware of. Jeff, do you know of any?

Mr. MILLER. No. The only other use of funds I am aware of is federal disaster relief which we did use for temporary relocation at Love Canal.

Mr. COSTLE. Love Canal was a special case, a special congressional authorization or appropriation. I think Kentucky sought funding for the Valley of the Drums but did not get it. We moved in and managed to use 311 funds to help in the containment of that waste, but I think that is about it.

Mr. COUGHLIN. Thank you, Mr. Chairman.

Mr. BOLAND. I appreciate very much your presence, Mr. Administrator, and your forthrightness and your responses to the Committee's questions. Dr. Gage, Steve Jellinek, Dave Hawkins, Jeff Miller, Mr. Drayton and Barbara Blum, wherever you are. Thank you very much. This is a very significant and a very important Agency, and one that we enjoy having within the oversight and purview of this Subcommittee.

Mr. Sabo will preside and hopefully he will be able to complete it today. Thank you all very much.

Mr. COSTLE. Thank you, Mr. Chairman.

ENERGY PROGRAMS

Mr. SABO [presiding]. Turn to the energy program. Total request of $107,599,000 represents an increase of six percent above the current 1980 estimate of $101,364,000. Permanent positions declined three to 150 in 1981, while full-time equivalency decreases eight to 259. For every three permanent workyears in the energy program, there are two full-time equivalents in other than full-time positions. Why does the energy program rely so heavily on other than full-time employees?

Dr. GAGE. It goes back to the historical basis of this program. When the program was put into the Environmental Protection Agency in 1975, there were no new positions at all given to EPA to run what was then a $134 million appropriation.

Painfully over the last five years, we have been able to reprogram up to I believe it is roughly 150 permanent positions. We have had to resort to a very considerable degree on using other than permanent positions, and contractor consultant arrangements to help us manage this very large sum of money.

Mr. SABO. It would appear that your permanent positions have dropped more rapidly than your full-time equivalency, in 1979, 185 to an estimated 1981 figure of 150. It is a drop of 35, while the equivalency only dropped 20.

Dr. GAGE. That is what the data shows because the permanent positions have been more of a precious commodity within the Agency for management of all environmental programs than have the other than permanent positions.

USE OF OTHER THAN FULL-TIME PERSONNEL

Mr. SABO. Do you think this heavy reliance on other than full-time permanent employees has had any effect upon your research program?

Dr. GAGE. I think very frankly we have given less than adequate attention to contract and grant monitoring in this program. We are not getting a follow through on some of the projects in terms of technology transfer, in terms of getting the results of the research in the hands of other government agencies, and of private parties. This is in part because of the low manpower overhead in this area.

But frankly the people who are involved in this program put in the extra 10, 20, 30 percent overtime each week and they have been doing this now for the last five years. It frankly is one of the programs we are proudest of.

Mr. COSTLE. They really do produce. I think this is a generic question. Our Agency is forced into contracting at a higher percentage than almost any other federal agency of which I am aware. Part of the reason for this is the changing mix of responsibilities, the very rapid expansion, new responsibilities, and the fact that permanent full-time positions are such a precious commodity government-wide. We probably have been more innovative and aggressive about finding other ways to get the job done without additional permanent full-time positions. I think at some point you begin to pay a price for that. It is very hard to measure, but it is something that worries me.

Bill has shown me comparisons between EPA and other agencies which I would like to share with you. In almost every category EPA comes out under resourced.

Mr. DRAYTON. These comparisons display the workload per worker, where there is a comparable or roughly comparable function. Such comparisons always have a certain amount of crudity. One example is the program evaluation staff. An OMB study indicates that, of 20-odd agencies, we have the lowest ratio of program evaluation staff to the rest of the Agency staff. Another example is the construction grants program. We found that we have some 12½ projects per staff person, whereas, it is as low as 2/100 of a project per worker to one or two projects per worker in other major federal programs responsible for construction activities. I would be happy to provide some additional examples, if you wish. It is quite a substantial list.

As Doug was saying, I think this reflects the fact that the Agency has grown inexorably in terms of responsibility every year as science reveals more and more problems and Congress acts on them. However, this growth has taken place during a period in which the Federal government is not growing.

As you know, since the Leach amendment formalized the premise of no growth in the number of Federal positions, every additional resource we receive must come from another agency. Frankly I

think it is fair to say that the government has not yet organized itself to do a good job in reallocating resources across agencies.

OMB has started with its cross-agency ZBB but it is still a very small program relative to the need, and we have been urging much more of that activity. We urgently need relief.

The problems we are having in terms of contracting is a direct reflection of this need. Information management is another area to consider. We have currently been forced to contract out roughly 70 percent of our information systems work. It will be 80 percent of the work next year. We will have to decide what systems are needed, design them and then evaluate them to determine their appropriateness. It is extremely difficult to build integrated systems when we are so reliant on contractors. The governmentwide average for the use of contractors in developing information systems is 28 percent. The private sector average is somewhere around 17 percent. I think we have the phenomenon of over-reliance on contractors in a number of areas.

Mr. COSTLE. Our average again?

Mr. DRAYTON. It will be 70 percent this year and 80 percent next year.

Mr. COSTLE. That is an incredible figure; 70 percent for us, 28 percent for the rest of the government, and 17 percent for private industry.

Mr. DRAYTON. That is one of the areas where we felt we really had to take action this year. Fully one-eighth of our budget is invested in information management, but with the pattern of dependence on contractors, the scarcity of positions is pressing us to the point of inefficiency. This is yet another indicator of the relative shortfall of full-time workyears for the Agency.

HEALTH EFFECTS OF ENERGY RELATED POLLUTANTS

Mr. SABO. How many final reports were scheduled to be received in 1979 in the health effects activity? How many were actually received?

Dr. GAGE. I will have to provide that for the record. I don't have that at my fingertips.

[The information follows:]

REPORTS ON HEALTH EFFECTS RESEARCH

In 1979, EPA's Office of Research and Development produced 102 final research project reports on the health effects of environmental pollutants. Our original schedule had called for the publication of 113 final reports, but 11 were rescheduled or discontinued for various reasons.

In addition, the Office of Research and Development also produces compilations and syntheses of available information (for example, the Criteria Documents) for use by the regulatory offices of EPA. During 1979 we had scheduled the production of 84 of these reports, and 71 were produced. All but one of the remaining 13 are scheduled for production this year.

INTERAGENCY ENERGY R. & D. PROGRAM

Mr. SABO. Page E-8 indicates that EPA reimburses other Federal government agencies for research that they perform. For the record, would you indicate the agencies which receive reimburs-

ment, the amount for fiscal years 1979, 1980 and 1981, and the primary research performed?

Mr. COSTLE. Sure.

Dr. GAGE. I have that available right now. I will submit it for the record.

[The information follows:]

60-531 O - 80 - 22

BREAKOUT OF 79, 80 & 81 FUNDS BY AGENCY FOR INTERAGENCY ENERGY R&D PROGRAM

AGENCY	RESEARCH PROGRAM	FY-79	FY-80	FY-81
Dept. of Energy	Improvement of instruments to measure air pollutants and the development of bioassays to determine health impacts of energy-related pollutants.	17,360	15,859	16,509
National Institute for Environmental Health Sciences	Identification of human health risks of ambient pollutants and evaluation of uptake and behavior responses of aquatic animals to energy-related pollutants.	3,970	4,125	4,125
Tennessee Valley Authority	Determination of transport, fate, and effects air and water pollutants within the TVA region and the development of data basis to evaluate the impacts of pollutants on crops, forests, aquatic systems, and visibility.	1,451	1,740	1,740
National Oceanic & Atmospheric Administration	Evaluation of the impacts of offshore oil and gas exploration and extraction on fishery resources and field identification of the influence of complex land terrains on the transport of air pollutants.	2,855	3,700	3,700
National Institute for Occupational Safety & Health	Assessment of occupational hazards and pollutant effects on workers in energy-related industries.	2,059	2,512	2,512
Dept. of Agriculture	Identification of techniques to prevent adverse environmental impacts of surface mining operations.	1,413	1,170	1,170
Fish & Wildlife Service	Development of coastal zone characterization schemes for the siting of energy facilities and the providing of guidance manuals to establish procedures for responding to the prevention of significant deterioration portion of the Clean Air Act.	2,000	1,750	2,050

BREAKOUT OF 79, 80 & 81 FUNDS BY AGENCY FOR INTERAGENCY ENERGY R&D PROGRAM

AGENCY	RESEARCH PROGRAM	FY-79	FY-80	FY-81
National Aeronautics & Space Administration	Development of remote sensing systems for use in the study of the atmospheric transport and transformation of air pollutants.		420	200
U.S. Geological Survey	Assessments involving the transport of energy-related pollutants in groundwater and the evaluation of the chemistry of western surface waters to establish baseline information relevant to water quality.		660	260
National Bureau of Standards	Development and evaluation of measurement technology, both hardware and protocols, for energy-related pollutants.	1,182		

SOLAR ENERGY RESEARCH

Mr. SABO. An environmental assessment of solar energy is part of the energy research program. The Council on Environmental Quality has predicted that solar energy will satisfy as much as 25 percent of the country's needs by the year 2000. Many others have not been that optimistic. Has your research on solar energy turned up any significant environmental problems?

Dr. GAGE. I don't believe that the department assessment activities on solar activities have indicated that there are any insurmountable problems associated with solar energy. There are some problems that need to be dealt with in a cautionary fashion, and really range quite widely in nature, due in no small part to the many different types of applications to which solar energy can be put.

There are obviously some problems associated with the manufacture of silicon devices that might be used in photoelectric cells. There are siting problems and associated environmental problems in the area of energy farming, use of large areas for solar collectors, but these are problems which probably can be dealt with with forward planning, and some sensitivity for those concerns.

Mr. SABO. How many bench scale or demonstration projects are planned in the energy program in 1980 and 1981? What is the total cost associated with the projects in each year?

Dr. GAGE. That is a very difficult question to answer, in that bench scale can refer to many, very, very small projects. It would be easier—I don't mean to put words in your mouth—if we could provide information on pilot scale, which are larger prototype units, and demonstration units for the record. Would that be all right?

Mr. SABO. Fine.

Dr. GAGE. Very good.

[The information follows:]

PILOT SCALE PROJECTS

During fiscal year 1980 we plan to fund eight pilot scale energy control technology projects. These are expected to cost $3.1 million. We are also planning to sponsor three control technology demonstration projects costing $4.5 million. During fiscal year 1981, we are planning six pilot scale projects which will cost about $2.5 million, and three demonstration projects which will cost about $4.0 million.

REPROGRAMING OF ENERGY RESOURCES

Mr. SABO. The table on page E–11 reveals that $1,251,000 is proposed for reprogramming to correct irregularities in the budgeted amount for personnel compensation. This program has approximately two percent of the Agency's total full-time equivalency, but is providing more than ten percent of the salary deficiency. Why is this, and was the salary and expense estimate for this program overstated?

Dr. GAGE. Since, as you have noted already, this program is primarily extramural, and the extramural accounts in the Agency had to be used as the source of funding for the increased personnel compensation and benefits cost that we experienced this past year, this particular account——

Mr. COSTLE. And which we are not budgeted for.

Dr. GAGE [continuing]. This particular account did receive a fairly large tap, as you point out there. It is on the same prorated basis as applied to all of the other extramural accounts throughout the rest of the Agency. It is just larger because the base is larger.

Mr. SABO. For the record, provide a 1981 table comparable with the 1980 table on page E-15.

[The information follows:]

FUEL PROCESSING BUDGET

	Fiscal year 1980		Fiscal year 1981
	Original	Redirected	
Coal cleaning	$1,213,000	$1,142,000	$754,000
Fluidized bed combustion	4,268,200	2,690,000	1,638,000
Chemically active fluid bed	657,000	618,000	
Biomass conversion	197,000	315,000	537,000
Synthetic fuels from coal	4,517,200	5,404,400	9,947,000
Synthetic fuels from oil shale	1,970,000	2,653,000	5,124,000
Petroleum refining			537,000
Total	12,822,400	12,822,400	18,537,000

In response to the National effort to accelerate the development and commercialization of synthetic fuels in an environmentally acceptable manner, EPA has redirected FY 80 funds to emphasize our coverage of these activities. In FY 81 we have followed up by giving further emphasis to the areas of environmental assessment and pollution control technology development and evaluation in the area of synthetic fuels to coincide with the anticipated activities in synfuels development and commercialization.

Our efforts in Chemically Active Fluid Bed will be terminated with completion of our demonstration program in FY 80. In FY 81 petroleum refining has been moved to the fuel processing area because of the similarity of its processes and associated environmental impacts to those of synfuels from coal processes. Our Coal Cleaning Program has been deemphasizing and redirected because of the fact that DOE has greately expanded their coal cleaning activities. Our coal cleaning program now emphasizes the assessment of the applicability of coal to synfuels processes and resultant environmental impact. Our efforts in fluidized bed combustion (FBC) have been reduced because of a reevaluation of its potential for commercialization and impact in the near terms. We now believe that it is questionable whether utility-scale atmosphere FBC units will actually be used commercially. The reduction of funding in the non-synthetic fuels areas will allow us to provide the needed support for our efforts in synthetic fuels from coal, oil shale and biomass conversion.

FLUE-GAS SULFUR OXIDE CONTROL PROGRAM

Mr. SABO. Turn to page E-30, the flue gas sulfur oxide control program. Actual 1979 was $3,054,000. The 1980 plan is $1,791,000. The 1981 request nearly doubles to $3,514,000. What accounts for the greatly varying levels in this program?

Mr. GAGE. In 1979 we foresaw a tailing off of this program with the successes that we had achieved in the wet scrubber technology for removing sulfur from flue gases, and in fact we are still in that tail-off mode as far as scrubber research and demonstration is concerned. However, during this past year a new technology which offered some very considerable price savings, up to 30 percent of capital cost and an equal percentage savings on annualized operating cost became apparent.

This is the so-called dry scrubber technology, which avoids the use of large tanks, large pumps, and many of the other more capital intensive equipment that is associated with the wet scrubber.

As we began studying this, it appeared that this particular technique had a special applicability for the lower-sulfur western coals, and in fact we did then, based on very intensive study, incorporate the dry scrubber option as a possible alternative for meeting fluegas desulfurization standards for the coals found in the western part of this country.

So that is why in fiscal year 1981 we do have the increase of $1.7 million to carry out the evaluation of pilot-scale dry scrubber facilities which are now on stream. These facilities have been funded and put on stream by utilities, and with this $1.7 million we will be carrying out evaluation studies to see how effective they are, how durable they will be, and how efficient they are in removing sulfur dioxides. This will be a very important factor in convincing the utilities in fact they can use this option and literally save hundreds of millions of dollars in meeting the sulfur oxide standard.

Mr. COSTLE. I want to add there is a lot of low-sulfur coal in the East too. In fact, I saw figures from one study which indicated that two plants in New York City could convert to low-sulfur coal and meet the very tight SO_2 limit and still save $260 million a year in annualized cost over oil.

There has been a preoccupation of utilities in the Northeast toward using nuclear energy as the alternative to oil. They have come up against a stalemate in the last couple of years. There is a growing interest now on the part of eastern utilities to use coal, and we think it can be done.

Mr. COUGHLIN. What is the ballpark average cost for the dry scrubber installation for a medium-sized utility?

Dr. GAGE. Estimates, as I recall, are between $70 and $80 per electrical killowatt, as compared with $100 to $125 per electrical kilowatt for a wet scrubber.

Mr. COUGHLIN. The average power plant would be how many kilowatts?

Dr. GAGE. Average power plant, let's say 500 kilowatts.

Mr. COSTLE. That is pretty small.

Dr. GAGE. Excuse me, 500 megawatts, so let's talk about, say, $35 million to $40 million per installation for a dry scrubber as opposed to $50 million to $60 million for a wet scrubber.

Mr. DRAYTON. They are very substantially different operating costs probably as well.

Mr. COSTLE. Oh, yes, a much simpler system. This is an adaptation from the food-processing industry. It is a very simple kind of technique.

Mr. HAWKINS. I think another point to be made about the funding pattern here is that in 1979 and previous years the emphasis was on relatively expensive technologies that were very cost-effective for use in new coal-fired generating plants, and that seemed to reach a conclusion in the 1980 planning. With the emergence of dry scrubbing and a couple of other techniques, we all sat down and decided that we may have an opportunity here to really prove out some technologies that could work on existing plants. That is

why you see a beef-up in the resources—the focus now is on technologies that may be able to be put onto existing plants and attack the acid-rain problem with that kind of a technical fix.

Mr. COSTLE. There is one very interesting new technology there that has yet to be demonstrated. It has been demonstrated on I guess a prototype scale applicable to wall-fired boilers. I think the ratio in terms of existing power plants is about half wall-fired to about half what are called tangentially fired. The wall-fired ones are the new ones being built for the most part. I think one company produces the other.

In any event, it is the redesign of the burner, which looks like it can get 85 to 90 percent reduction in NOX emissions. It is a very simple inexpensive device, and we are now experimenting with injecting limestone directly through that burner, and getting at least on a pilot scale 65 to 85 percent sulfur reduction. If you contrast that kind of a system, you are still going to have to have a collection system for the sulfur oxide and limestone combination, but it is so much cheaper than the wet system.

The truth remains that most of the impetus for technology development in this area still comes through this Agency, through this part of the budget.

Mr. COUGHLIN. This part of your budget is primarily a research and development effort; is that correct?

Mr. HAWKINS. It is a major support of the regulatory part of the program. We have in the zero-based budget. We have media committees where research people and the staff sit together on committees. This activity always gets strong support from the program office, because it is this information that enables the Agency to actually show that regulations can achieve good levels of control at relatively economic costs.

Mr. COUGHLIN. Thank you, Mr. Chairman.

Mr. SABO. Thank you. If we can, we are going to try and finish today.

TRAVEL BUDGET FOR THE ENERGY PROGRAM

What is the total travel budget for the energy program in 1980 and 1981?

Dr. GAGE. I would have to provide that for the record.

[The information follows:]

TRAVEL COSTS

The travel budget for the energy program is $511.8 thousand for fiscal year 1980 and $479.6 thousand for fiscal year 1981.

COAL GASIFICATION

Mr. SABO. What are the total costs associated with research on Lurgi Coal Gasification Plant at Kosova, Yugoslavia in 1980?

Dr. GAGE. We will have to provide that for the record. We were very pleased to be able to work on that particular facility because that is the coal, full-scale operating coal gasification facility with anything like modern control technology on it.

Mr. COSTLE. Of course, with the synthetic fuels program that the Congress is about to adopt, that is going to be a very important

thing. When we try to design plants in this country, we are going to need to know exactly what kind of controls ought to be put on, and how they in fact work, and at what cost.

Mr. COUGHLIN. Do you think this Subcommittee should see that plant?

Mr. COSTLE. I definitely would invite the Subcommittee to see that plant. We are getting a lot of information particularly from the Germans and the Japanese in the area of pollution control technology right now, and learning a lot from that.

[The information follows:]

Summary of costs for Kosovo, Yugoslavia Lurgi test program

	Thousands
Phase I—Initial screening for major and minor pollutants, fiscal years 1977–79:	
Rudarski Inst. (prime contractor; funded via Public Law–480)	$275
Radian Corp. (subcontractor)	194
Total	469
Phase II—Identify and measure trace pollutants, fiscal year 1979:	
Radian Corp. (prime contractor)	317
Rudarski Inst. (subcontractor)	180
Total	497
Phase III—Characterize ambient air pollutants, fiscal years 1979–80:	
Radian Corp. (prime contractor)	102
Kosovo Inst. (subcontractor)	36
Total	138
Phase IV—Measure fugitive emissions, fiscal year 1980:	
Radian Corp. (prime contractor) (supp. funds)	300
Remhk Kosovo (subcontractor)	32
Total	332
Phase V—Assess health and ecological impact (EPIK) fiscal year 1981:	400

MEASUREMENT SYSTEMS FOR ENERGY RELATED POLLUTANTS

Mr. SABO. Why do you think you need an additional $1,170,000 for measurement systems?

Dr. GAGE. That program is tied in very much with the attempts that we have at this time to try to put a much better underpinning in the estimates that we can make of exposure of human beings living in the vicinity of energy facilities and the emissions from those energy facilities, in essence, putting together a network around several facilities. The staff has identified what appears to be a very cost-effective way to develop the kind of exposure data that we will need to put into the models that we will have to use in evaluating the new energy facilities that will be proposed under the Energy Security Corporation.

MANAGEMENT AND SUPPORT

Mr. SABO. Let's turn to management and support on page MS–1. The total request is $219,404,000, an increase of $22,914,000 above

the 1980 current estimate. In 1981, permanent positions total 2,559, and full-time equivalency is 3,303.

ACTUAL OUTLAYS VERSUS PLANNED OUTLAYS

Looking at 1979 actual for a moment, I see that obligations were very close to the plan of $183,207,000. However, actual outlays of $147,687,000 were far short of the $178,210,000 planned. Why were outlays so different from plan in this account? After all, it is almost exclusively salaries and support costs that should be fairly easy to estimate.

Mr. DRAYTON. Mr. Chairman, I have been somewhat puzzled by that very question, and I have been looking at it over the last two years. There are a number of items in this account with a delay in payment. I will give you a couple of examples.

Mr. SABO. Was it due to end-of-year buying that didn't show up as expenditures until 1980?

Mr. DRAYTON. As I understand it, it is more a matter of the rather slow manner in which certain paperwork wends its way through multi-agency systems.

Mr. SABO. Maybe we could do that and balance the budget this year.

Mr. DRAYTON. We are talking about such items as penalty payment for mail which is not a high priority for processing. I think that we are going to get caught up with this sometime in 1981, but since I don't fully control all the detailed mechanisms, I am not sure that I can guarantee that exactly.

Mr. SABO. If you have additional thoughts, would you provide that for the record?

Mr. DRAYTON. Certainly.

[The information follows:]

ESTIMATE OF OUTLAYS

The Agency has no control over when vendors request payment. Because of the number of delayed payment items in the Management and Support account, the Agency's 1980 estimate of outlays has decreased. I have mentioned penalty mail payments as an example of a delayed payment item. Other examples include printing bills from the Government Printing Office for printed material in the Federal Register and the Code of Federal Regulations; billing for security clearances conducted by the Office of Personnel Mangement; and billings for utility and commercial telephone charges.

FULL-TIME EQUIVALENCY

Mr. SABO. Full-time equivalency in 1979 was 348, or approximately 10 percent short of target. I can appreciate the difficulties some of the program offices have in hiring people in very technical fields, but I wouldn't think the management support activity would have serious problems filling vacancies. Why were you so far off target?

Mr. DRAYTON. For two reasons: One was the freeze which affected us as much as anyone else last year. Secondly, we were having as much trouble learning how to use the new full-time equivalency system as was the rest of the agency. I can report that over the first couple of months of the new year we have begun to close the gap between where we should be and where we were. I am pursu-

ing this with extreme care. I review the numbers monthly and meet with the people who are lagging.

MANAGEMENT AND SUPPORT TURNOVER RATE

Mr. SABO. What is the turnover rate in the management support area?

Mr. DRAYTON. It is very low in some areas, for example, in the processing units and in some of the field units. It is relatively high in the analytic units where we typically have younger people who are with the Agency for only a stage in their career and who then intend to move on. But, in terms of numbers, those units tend to be overshadowed by the larger units such as Personnel and Contracts where we have relatively stable work forces. However, even in the more stable units, there is a reasonable degree of movement. For example, every year in personnel we face the dilemma of having a number of people who upon reaching a certain level in the GS structure, cannot advance further. They make lateral or upward moves into other agencies. This produces a constant element of turnover.

PERSONNEL COMPENSATION AND BENEFITS

Mr. SABO. How did you use the funds that had been earmarked for the unused workyears? In other words, the 1980 justifications indicated a considerable transfer into personnel compensation and benefits to fund workyears fully. Since 1979, obligations were very close to plan, I assume the personnel compensation funds were used for other purposes, is that accurate?

Mr. DRAYTON. No, sir. As you know, we did not receive a pay raise supplemental in 1979. If we had been able to fully utilze our workyears in 1979, we would have faced a very significant personnel-cost short fall.

Frankly, in our initial 1980 budget calculations we underestimated the amount of money that would be required to cover our positions. The Agency as a whole underestimated, the average cost per person by two percent. That adds up quickly. This was very much a function of our unfamiliarity with workyears instead of positions.

COST AND ACQUISITION OF ADDITIONAL SPACE

Mr. SABO. Page MS-2 indicates part of the 1981 increase is for additional space costs. What is the cost of the additional space and how many square feet are involved? Do you anticipate any problems in acquiring the space?

Mr. COSTLE. We have experienced terrible problems in securing space. It is the damndest thing I have ever seen in government.

Mr. DRAYTON. If I may expand on that——

Mr. SABO. That will be difficult.

Mr. DRAYTON. The average square foot per employee is 170 in the Washington D.C. area. It is down to 120 and still shrinking at EPA.

Mr. COUGHLIN. You should see the Congressional offices.

Mr. DRAYTON. It is true that the Congressional offices are hard to beat, but we are getting into competition rather quickly. There is an obvious question that we would ask: If the average is 170, there

must be some people well above 170 and why can't we get a reallocation.

Mr. SABO. You would like to be one of them. But as you look you will probably have trouble finding space and it will probably cost more than you expect.

Mr. COSTLE. Yes.

Mr. DRAYTON. We had been promised some this summer. It was due to arrive last October. That will get us up to 140 square feet per person, if I remember correctly. It is a tremendous improvement, but we have a long way to go.

Mr. COSTLE. The problem is that it affects, for example, Steve's program. He has a particular need for highly specialized personnel. Even if we were hiring at a faster rate, we would have a hard time finding places to put them. We are facing some major decisions right now about how we utilize space that can be made available over at Crystal City and how to move units within the Agency in order to make maximum utilization of space without disrupting program operations by scattering people all over town. There are some very tough issues to consider.

Mr. JELLINEK. We have highly sought-after technical people. It is often difficult to encourage them to join the Agency when you show them an office they will have to share with 5 or 6 others and a chemical company or major research laboratory is offering them more money and better working conditions.

Mr. DRAYTON. My office has the second worse situation after Toxics at headquarters. We are already faced with the fact that our entry recruits in the analytical office are being paid 50 percent below the average of a graduating student in a business school, for example. Then we have to show them tiny, windowless offices where you can barely cram two desks together as their office of the future. It has a very definite negative effect on our recruitment efforts. It is strictly the quality of people already in the Agency and the interest in EPA's work that makes it possible to attract new people. But the space disadvantage is an enormous problem.

APPLICATION OF CONGRESSIONAL REDUCTION TO PUBLIC AFFAIRS

Mr. SABO. The 1980 justification material reflected $2,964,000, and 52 positions for the Office of Public Awareness. The 1981 justifications reflect 53 positions and $3,432,000 for the 1980 Public Awareness Office. Last year there was a Congressional reduction of $2 million to equipment, postage, printing, reproduction and public affairs. Apparently, the Office of Public Awareness was augmented in 1980 instead of reduced. Is that accurate?

Mr. DRAYTON. I am under the impression that their funding has been reduced.

Mr. SABO. I think they are losing in 1981, but didn't appear to in 1980.

Mr. DRAYTON. Any increase in 1980 was largely a result of the personnel cost adjustment which we discussed earlier.

Mr. SABO. So, none of the $2 million reduction was applied to this office?

Mr. DRAYTON. Which Congressional reduction is this that you are talking about?

Mr. SABO. The $2 million reduction for equipment, postage, reproduction and public affairs.

Mr. DRAYTON. We applied the $2 million reduction proportionately to planned expenditures relating to increased workyears.

Mr. COSTLE. Right across the Agency.

OFFICE OF INSPECTOR GENERAL

Mr. SABO. The EPA was one of the agencies required to establish a separate Office of Inspector General by the Inspector General Act of 1978. When was the office officially designated and when was the Inspector General nominated and confirmed?

Ms. REID. The Office was officially designated on January 7, 1980. I was confirmed in December of 1979.

Mr. SABO. How many semi-annual reports has the IG submitted to Congress?

Ms. REID. Prior to my coming aboard there was one report submitted in October of 1979.

Mr. SABO. Have there been any since? You came aboard in January?

Ms. REID. I came on board December of 1979. The first semiannual report that was required from us was in October of 1979. That was filed. The next one that is required is in April of 1980 and that also will be filed.

Mr. SABO. Mr. Coughlin, do you have any questions?

FUNDING FOR INTERVENORS IN EPA PROCEEDINGS

Mr. COUGHLIN. Thank you, Mr. Chairman.

While I have the opportunity here, let me ask about two subjects. One is how much money is scattered through here for the funding of intervenors for outside participants in EPA proceedings? Is that in this category or how much is where?

Mr. DRAYTON. The one statute where we have authority for it is the Toxic Substances Statute. We have a small sum of money for some experiments in 1980.

Mr. JELLINEK. There is none in the 1981 budget. There was some in 1979 and there is some in 1980. We experimented with the PCB ban regulations in 1979 and one intervenor group was funded. The total came to around $1,500, as I recall.

Mr. COUGHLIN. So there is none in the 1981 budget for intervenors?

Mr. JELLINEK. There is none in the 1981 budget.

Mr. COSTLE. The President's regulation reform legislation did propose a government-wide fund. That is still being considered by the Congress, with independent oversight of the use of those funds. Funds would be distributed to various agencies and there would be an independent review by the Administrative Conference of the United States.

Mr. COUGHLIN. There is none in here?

Mr. COSTLE. No.

AGENCY TRAVEL COSTS

Mr. COUGHLIN. Last year the Subcommittee reduced your travel expenses somewhat. You seemed to survive the year and you are back again. I take it that did not impose an undue hardship on the Agency?

Mr. DRAYTON. Well, I am sure as a Congressman you have had to fly back and forth to other parts of the country and have noticed that the costs of travel have gone up quite significantly. Travel is an area where inflation has hit more heavily than most, presumably due to rising energy costs.

Mr. COUGHLIN. So, the increase this year is a result of inflation?

Mr. DRAYTON. Our requested increase also reflects the increased personnel—specifically the increased personnel in certain program areas such as the RCRA program which will entail a great deal of travel. We have taken that into account in preparing the budget.

Mr. COSTLE. We also want to be able to respond to "Three Mile Island" and hazardous waste disasters.

Mr. COUGHLIN. How much overseas travel is included in your request?

Mr. COSTLE. It has remained nearly constant for the past three years. It represents less than four percent of the entire travel budget.

Mr. DRAYTON. It is $600,000 for 1980 and we anticpate spending the same amount in 1981.

Mr. COSTLE. Because of inflation, the actual effect of the reduction may be a slow down in our travel. Interestingly, it comes at a time when we have increasing involvement abroad. For example, we have expended a considerable amount of effort this year through the OECD in trying to achieve harmonization of regulations in chemicals between the industrialized nations. It is a $80 billion trade issue. That is what it boils down to.

There were nine countries that had adopted regulatory systems when we started this, I don't know what the count is now. There is considerable concern expressed by chemical companies about the need for a harmonized approach from one country to another. If a chemical testing is done in one country, would that testing be acceptable under TSCA in this country? Our law requires that foreign corporations meet whatever standards we impose on domestic corporations.

Mr. COUGHLIN. That is the whole question of trade barriers.

Mr. COSTLE. That is exactly it.

Mr. COUGHLIN. It is our feeling that really more properly belonged in the area of trade negotiations.

Mr. COSTLE. Except, the trade negotiators don't know one chemical from another. They don't know the statutes. They don't know harmonized test methodologies, or what you mean by common nomenclature, or comparable risk assessment methodologies. These are the technical cornerstones to any kind of a harmonized approach.

Bob Strauss and his people, for example, would not have the faintest idea of what you were talking about in those highly technical fields. The fact of the matter is that we have had the trade office involved every step of the way in our dealings through the

OECD. They have been delighted from what I am told to have us taking the initiative and with the fact that we have bent over backwards to insure that they have been aware of everything that we are doing.

The payoff on all this, frankly, is that I think this spring we are going to see—and I hope I am not being too optimistic, I will ask Steve to comment—I think we may be in a position to actually reach harmonization on a number of very critical issues in this area. In terms of what that has been worth in avoiding nontariff trade barriers and misunderstandings, it is hard to assign a dollar figure. In a $80 billion trade issue, it has to be a sensible investment.

We have brought the Common Market closer to us, and also the Japanese and Canadians who are most important trading partners. That is just one example of a high payoff investment. But that involves dealing through the OECD. OECD is an appropriate multilateral forum in which to do that.

Mr. DRAYTON. Could I add a statistic? Our total, overall travel budget is 1.3 percent of our operating budget. The proportion of the travel budget that is international is 3.2 percent in 1979. It is 3.7 percent in 1980 and back down to 3.4 percent in 1981. Fully 24 percent of the international travel we expect is to Canada to address the acid rain problem and the whole series of border problems. That is in terms of the number of trips, not the amount of money. We also have added a significant increase in travel with Mexico. I don't have those figures here. I think that if we looked at the actual number of trips overseas, we would see a significant decrease in the number of trips.

Mr. HAWKINS. I would like to point out one program area where limitations on travel funds are having negative programmatic effects. That is in the radiation area where there are a number of important quasi-government radiation protection committees in which we simply are not participating because we don't have the travel funds. They meet on a several times a year basis. There is no way that can be accommodated by our travel budget.

Mr. COSTLE. International travel is something that has to be watched, but it is also, quite candidly, a politically sexy thing to attack.

I have had enough experience in this area and realize how much we have gained in our exposure with Germany and Japan. I know that if we were cut off, it would be a real substantive loss. I am not suggesting for a moment that international travel should not be very carefully scrutinized and we have brought a lot more discipline internally to our travel activities.

There is one other travel issue. I think our programs are suffering badly because of travel restrictions. One of the figures I saw last year was that in one of Steve's principal R&D programs down at Research Triangle Park, on the average only one out of six contractors was getting a single site visit from one of our people. Now that raises the question in my mind about how effectively we can oversee these contractors. That is a function of really two things: One is the number of permanent people we have on board to manage contracts. This is an agency that relies very heavily on contractors in the absence of permanent, full-time people.

Second is the availability of travel funds to allow contract managers to get out to their contractors. A lack of travel funds tends to reduce the situation to kind of a bureaucratic encounter—where the contractor has to send somebody to meet with the manager. The government pays them through the contract. I wonder how sensible that really is.

Mr. COUGHLIN. Thank you, Mr. Chairman.

STAFFING OF INSPECTOR GENERAL'S OFFICE

Mr. SABO. Last year's justifications included $8,762,000 and 110 positions for the Office of Audit. This year the 1980 plan for the Office of Inspector General which incorporates the former Office of Audit was $9,672,000 and 120 positions. Is the increase due to the Inspector General Act or other factors?

Ms. REID. As you know, sir, the Office of the Inspector General actually merged two offices, the Office of Audit and a piece of the old Division of Security and Inspections. The Inspector General budget reflects or attempts to reflect both of those pieces. There are still some problems that we need to work out with respect to that budget, but the increase is a reflection of the merger of two distinct offices.

Mr. SABO. For the record, would you detail the positions and funds between audit and investigations?

Ms. REID. We have 98 professional auditors. The remaining piece on the audit side is the support personnel. We have 16 professional investigators, four security specialists, and the remainder on that side is support personnel, for example, two secretaries. In the immediate Office of the Inspector General and not reflected in the budget is, of course, the position of the Inspector General. There is a legal counsel position and a couple of special assistant positions.

FISCAL YEAR 1981 REQUEST TO OMB FOR AGENCY MANAGEMENT

Mr. SABO. What was your request to OMB for Agency management?

Mr. COSTLE. The entire request?

Mr. SABO. Yes.

Mr. COSTLE. I will have to supply that number for the record.

[The information follows:]

The request to OMB was $86.8 million and 1,764 permanent full-time equivalency workyears.

OFFICE OF PLANNING AND EVALUATION

Mr. SABO. Why does the Office of Planning and Evaluation need an additional 6 positions and $3,840,000 in 1981?

Mr. COSTLE. It partly reflects the fact I have told Drayton. I want more program evaluation out of him.

Mr. DRAYTON. Mr. Chairman, let me make a few quick points.

First, as the Agency's workload has increased dramatically over the last several years, so have the number of regulations being processed. This increased volume of regulation translates directly into more work for the Office of Planning and Evaluation. We must conduct more cost evaluations, benefits work, and statistical

work. We have had, we think, roughly a threefold increase in our workload. During that same time period between 1977 and 1981 the real value of the Office's contract budget has been cut just about in half by inflation. Half the resources to do three times the work means that we have had a 6 to 1 change in the relationship of workload to available dollars.

In addition to that, the Office has taken over several new functions. Yesterday we briefly discussed the statistical function. We are now providing a small, central office that provides expert statistical help to other offices and also quality controls the Agency's regulations and reports. This group also includes the staff—which was previously in the Office of Resources Management—to manage and limit public reporting requirements. That small, new office has to be backed up with contracts.

Similarly, we have had to play a much larger role in the energy area. Our energy group works to make sure our regulations make energy sense and to reform our permitting of energy facilities. It also analyzes the impact on the environment of other energy decisions in the government and represents us in interagency dealings. The Office of Planning and Evaluation also is responsible for the Agency's regulatory reform work, for example, the "bubble."

Given that, the workload of this top quality staff had just increased very dramatically. The Agency and OMB both felt that we needed to have that increase. Some of the discussion we had earlier about doing cost-benefit work is a specific example of our additional investment in groundbreaking reforms which develop new, practical, applied ways of doing the job better.

ADP TECHNICAL SUPPORT

Mr. SABO. Page MS-13, under ADP technical support you are requesting a $10,345,000 increase. The narrative on the next page indicates the increase "is to provide for a major ADP procurement conducted in accordance with OMB Circular A-109." A major aspect of A-109 is funding competing contractors. Your justification continues: "Funding of this request will enable four contractors to participate in the competitive process of concept development through systems engineering."

What is the status of the A-109 program? That is, what actions has the Agency taken to date laying the groundwork for the planned acquisition? What was your 1981 request to OMB for the A-109 computer procurement?

Mr. DRAYTON. We requested a somewhat larger sum. We had originally planned to do five competitive proposals and we essentially cut that back to four after discussions with OMB. $13 million was our original request.

Let me introduce Ed Hanley, our Deputy Assistant Administrator for Management and Agency Services, who in the last year has played a very critical role in bringing this to focus and strengthening that office. He can give you a more detailed report on where we are exactly.

Mr. HANLEY. We have prepared a draft request for proposals which is about two months away from being ready to be released. Two things that have to be done before it can be released will be,

first, receive the funding assurance and, second, discuss it in some detail with industry. Because of the unique nature of this procurement, the process we have discussed with GSA and the Office of Management and Budget, and for that matter the Brooks Committee and GAO, involves issuing a draft request for proposals. First, to find out whether industry understands it and how they will respond and second, to learn what modifications are needed to obtain the kind of competitive response in the initial stages that the process depends on.

To clarify, as Bill said, the initial request to OMB was $13 million and assumed five competitive contracts with a somewhat larger support budget due to the larger number of contracts. The reason for the reduction is simply an assessment of the likelihood of qualified corporations bidding on this work. The decision to assume five rather than four contractors is simply an informed judgment about the industry response and the number of contractors needed at the start of the process.

SCHEDULE FOR A-109 PROCESS

Mr. SABO. For the record, would you give us the overall schedule of A-109 procurement, and what are the significant milestones in the process? Did OMB require that the A-109 approach be utilized?

Mr. DRAYTON. Yes, sir.

[The information follows:]

A-109 PROGRAM

Conventional procurements to meet EPA's data processing needs have resulted in separate, unintegrated systems during the last ten years. Switching among vendors and types of equipment has had adverse impact on EPA programs. EPA is utilizing the A-109 approach because we believe that it will result in a single, integrated, flexible, and least cost solution to our data processing requirements for a decade or more. We reached that conclusion after discussions with OMB, GSA, and the Staff of the House Committee on Government Operations. Our application of A-109 is consistent with OMB guidance as to the cost and type of our requirement.

We estimate that the A-109 acquisition process will result in the procurement of ADP resources for delivery in December, 1984. Conversion from existing data centers will be complete by September, 1985.

The A-109 program defined by EPA has five phases which will be carried out to reach that goal. They are:

Concept Development.—Five competing vendors will be awarded contracts to develop alternative systems design concepts. EPA will review these design concepts and select some or all for further development. The request for proposals from prospective concept developers is due for release very shortly. An award is expected in January, 1981, and concepts are to be delivered in December, 1981.

Engineering Design.—Successful concept vendors will begin immediately to prepare detailed engineering designs. We estimate three of the original five vendors will continue in this phase. The designs are to be delivered by December, 1982. EPA will review these for cost and feasibility and select perhaps two for live demonstation.

Hardware Procurement.—Competitive contracts will be awarded for computer hardware and related support (telecommunications, operations and maintenance, etc.). EPA's current plans are to have government-owned, contractor-operated computers. Government ownership could be achieved through either outright purchase or a lease/purchase arrangement. The hardware will be procured for the demonstration phase, with an option to implement a full system for a much longer period if the design is selected after the demonstration. The hardware should be in place for the demonstration by September, 1983.

Demonstration.—The surviving system designs will be demonstrated for 3-4 months using actual EPA application systems. One design will be selected based on

total cost and functional performance. The demonstrations will be finished in December, 1983.

Implementation and Conversion.—When the demonstrations are complete, EPA will select the best design for implementation. During the implementation period, which will terminate in December, 1984, hardware will be procured and installed, and the system made ready for EPA work. Conversion from the existing data centers to the new ADP system will require from 6–9 months, completing by September, 1985.

60-531 O - 80 - 23

SCHEDULE AND PROJECTED BUDGET

Event	FY 81	FY 82	FY 83	FY 84	FY 85	TOTAL
Concept development	----------> 12/81					
Engineering design phase		----------> 12/82				
Procure hardware			----------> 9/83			
Demonstration Phase			----------> 12/83			
Implementation and conversion from existing centers				----------> 3/85		
Vendor Costs	$8.0 [1]		$2.0 [2]	$10.0 [3]	$5.0 [4]	$25.0
Analytical Support Cost	$2.3	$3.0	$2.0	$2.0	$2.0	$11.3
Total Cost	$10.3	$3.0	$4.0	$12.0	$7.0	$36.3

[1] An average of four concept vendors at $2 million each.
[2] Demonstration phase work by two selected concept vendors at $1 million each.
[3] Continued demonstration work, implementation work for winning vendor*, and hardware leases.
[4] Lease of equipment during conversion, conversion work for winning vendor*.

*Costs for both these items depend highly on the nature of the concept which is finally selected. Much better estimates for out-years will be available at completion of the Concept Development phase.

REQUIREMENTS FOR A-109 PROCESS

Mr SABO. Does the A-109 process require that four separate contractors participate?

Mr. HANLEY. The regulations do not specify the number of contractors. The surrounding literature talks in terms of between 5 and 6, although the real issue is how many do we begin the process with, so that we end up seeing two competitive systems in operation. Since there are several points during the process at which competitive design vendors can be eliminated, we worked back from the goal of having two at the end. We took into account the number of times we will want to select our vendors and made a judgment as to the number we had to have at the start. The best guess is between four and six. If we start up with fewer than four, the odds that we will have two competitive vendors in the last stage are very slim.

Mr. SABO. What are the projected costs in future fiscal years for this procurement?

Mr. DRAYTON. The total procurement is $36 million over five years.

GAO STUDY ON EPA COMPUTER OPERATIONS

Mr. SABO. The General Accounting Office has recently taken a critical look at EPA's computer operations, I understand. Some of the problems addressed by the GAO included: Lack of workload projections on which to base acquisition planning; lack of concern of some users regarding ADP costs, and difficulty in identifying ADP costs. What is the Agency doing to try to solve these problems?

Mr. DRAYTON. On the first issue, we are just now getting FEDSIM, which is a highly respected center within the Air Force Data Automation Agency, that essentially comes in and evaluates needs, to review our current needs and help us make the decision about whether or not we should go ahead with the next expansion of systems capacity. We are right now in the process of updating the data base. I think the GAO's concern was that we were still using a study that had been done two years ago.

Mr. SABO. Do you think the criticisms were fairly accurate?

Mr. DRAYTON. If indeed we were relying on that study exclusively, one would begin to wonder, given the rapid rate of change. But I think we have been updating it in terms of our own data some, and in any case we are committed not to make any further expansion in the system until we finish the FEDSIM study and find out exactly where we are. However, the projections of the old study have proven quite accurate in terms of where we felt the pinch over the last several years.

The second point to which you referred is a recommendation that we put in place a transfer payments system, so that the consuming offices exert more self-discipline. Now, this is an idea with which I am very sympathetic in theory. In fact, in our contract office at the moment we are experimenting with putting exactly such a system into effect. There are some very delicate design issues that one has to work through before doing so. How much of a budget do you give different people? There is the matter of legislation. We would have

to get legislative authority and would have to come to you to set up an initial capital sum to make that possible.

Mr. SABO. Does the Agency have an ADP planning and budgeting system?

Mr. DRAYTON. We are in the process of putting it in place. The Administrator established a committee of deputy assistant administrators, both those responsible for running the system and those who are the chief consumers: We are committed to a tight relationship between the ZBB system and the information systems budget, so that all new and existing system requirements will be reviewed by that committee, and then fed into the ZBB system. We will also review existing programs on a regular cycle, to see whether they can be cut down, merged or strengthened.

Mr. HANLEY. To expand on that, I think one of the GAO criticisms, which we basically agree with, is that we budgeted for ADP costs separate from program costs and therefore, in the budgeting process, programs did not have to face trading off investments in ADP with something else they might do. We are changing that at the Administrator's direction this year, so that as we go through the budgeting process, programs will have to consider treating ADP costs the same as other costs in each decision unit, and be able to justify those ADP investments in terms of program priorities and in terms of other possible uses of those funds.

Mr. DRAYTON. These sets of concerns are why we have basically been in agreement with the GAO report, why we have taken the series of steps we have over the last year, and why we are proposing in this budget to you to increase our investment in this area. We are proposing a significant increase in our central information personnel systems so we move from 80 percent reliance on contractors down to 60 percent, which is still not where we would like to be. It is a necessary step and supports our request for additional funds as well.

Mr. SABO. We will insert a series of questions to be answered for the record at this point.

[The questions follow:]

ADP AT RESEARCH TRIANGLE PARK

Question. Regarding the contract to enhance the computer capacity at Research Triangle Park:

(1) What is the status of this contract?

(2) What specifically is being brought under this contract? What items are optional?

(3) What is the schedule for bringing in the new equipment?

(4) What are the fiscal year 1980, and 1981 costs for this contract?

(5) Describe the requirements study that preceded the contract, and the method used to determine what equipment was needed, and when it would be needed.

Answer.

(1) We awarded the contract in February, 1980.

(2) Item:

Univac 1182 processor and memory:	
Ordered	1
Optional	0
U36 tape (8 drives/string):	
Ordered	4
Optional	0
8433/8450 disk (8 drives/string):	
Ordered	3
Optional	3

(3) The ordered equipment is being shipped during the first week of March. It will be installed and will be accepted before July 1, 1980. We can order the options, if required, in fiscal year 1982 and fiscal year 1983.

(4) Since EPA is leasing, not buying, the cost in fiscal year 1980 is somewhat dependent on when the equipment is accepted. The fiscal year 1980 cost is estimated to be $997,000. The cost in fiscal year 1981 is for a full 12 months, or $2,785,000.

(5) There are two components of the requirements projection. The long term requirement was projected by the Informatics, Inc., study, completed in late 1977. The workload at both EPA data centers has closely paralleled the Informatics projection.

For a shorter term projection, EPA surveyed its users, and reached two conclusions which led to the contract:

The need for central processor capacity in late fiscal year 1980 would exceed the capability of the existing CPU and any enhancements which could be made to it;

The disk storage requirement would continue to grow as files and data bases for existing systems continue to grow.

A lesser CPU could have met the short term requirement. However, installing a CPU disturbs the center's ability to provide the stable computing environment required by EPA users. This instability can affect a center for several months.

Thus, we selected the larger CPU (the 1100/82),

To avoid two near term periods of CPU related instability,

In view of the Informatics projection, as verified by actual workload growth and the short term review, and

The comparatively low cost differential ($200,000).

Computer Performance Evaluation

Question. Please describe any plans you have to perform a computer performance evaluation at the two computer centers.

Answer. FEDSIM is now in the process of conducting a computer performance evaluation at the Washington Computer Center and we expect preliminary results in mid-April. We have also directed the facilities management contractor at the National Computer Center to establish a continuing CPE program for installation in fiscal year 1981. We are currently trying to recruit experienced personnel to perform this work.

Research Triangle Park Workload

Question. For each of the following steps that might be taken at Research Triangle Park, please describe whether you have evaluated taking the step and what the results of the evaluation were, or when this evaluation is scheduled to take place:

(1) Shifting a portion of the work to non-prime hours?
(2) Shifting workload to EPA owned or based mini-computers?
(3) Shifting workload to non-EPA computers?
(4) Developing more effective user charge-back systems?
(5) Shifting some of the workload from interactive to batch processing?
(6) Temporarily relaxing service goals?
(7) Rewriting programs to gain efficiency?
(8) Reducing the number of interactive jobs at one time?

Answer. *(1) Shifting a portion of the work to non-prime hours.*—The RTP facility meets both the research needs of EPA scientists, and the environmental data needs of the air quality and drinking water programs. For example, this center supports a series of modeling efforts, does health effects risk assessments, and complex sample analyses—all of which are time sensitive. The facility does not process large administrative applications which typically we can run on an overnight or weekly turnaround basis during non-prime hours.

While there is some work which we can defer in this way, it should be borne in mind that small capacity savings in the data center can result in a very costly diminution of the Agency's ability to perform its scientific mission.

(2) Shifting workload to EPA owned or leased minicomputers.—At the beginning of fiscal year 1979, EPA had installed 6 general purpose minicomputers. By the end of the year, we had installed 6 more and had placed an order for 12 beyond that. The acquisition of each of these systems was supported by individual feasibility studies. By shifting work to the minicomputers we have definitely slowed the growth of the timeshare budget. We are now completing a study of how the Management Information and Data Systems Division will manage the minicomputer resource as we approach full deployment of the distributed system. We are developing a mechanism for software interchange, and identifying candidate applications for

transfer from the large processors to the minicomputers. We are confident that over time, we will achieve better workload balancing throughout the computer utility and further reduce dependence upon our larger centers.

(3) Shifting workload to non-EPA computers?—EPA policy has specifically discouraged this method of limiting data center growth. Most EPA program offices share data and applications with each other. Fragmenting EPA's current data center workload across an unintegrated mix of computers, while it might delay the need for a particular upgrade, would probably result in the use of non-standard software and communications protocols, much higher systems maintenance costs, and ultimately degrade the overall management of Agency ADP programs.

(4) Developing more effective user charge-back systems?—There are two aspects to a user chargeback system: a set of prices for services which prorate the center costs to its users, and a scheme for holding users accountable for the costs. EPA is confident that its pricing structure is adequate. What is missing is effective program office accountability. EPA will conduct a complete review of its data center utilization as part of the FY 82 budget cycle. The DAA Committee on Monitoring and Information Management will conduct the final ranking of the uses.

(5) Shifting some of the workload from interactive to batch processing?—The Research Triangle Park center already supports 65 percent of its workload in batch. This is typical of other, largely scientific computer centers with which we are familiar. It is our judgement that constraining interactive use below the current level would have a negative impact on the Agency's ability to perform scientific work, which frequently requires interactive, time constrained analyses, or on the overall productivity of costly scientific staff.

(6) Temporarily relaxing service goals?—In early 1979, EPA's date center managers met with users to negotiate service time goals in an effort to extend the life of the utility. Users agreed that they could, in some cases, live with longer turn around, and the goals were selectively relaxed. In our judgement, the present definition of service goals represents an appropriate trade off between data processing costs and program efficiency and effectiveness.

Our continuing efforts to strike an appropriate balance between data processing service goals and program requirements will have two parts:

First, we plan to conduct performance audits of all major systems every 3–5 years. These audits will examine, among other things, the appropriateness of service goals;

Second, the processes which are now developing for ADP budgeting and for the review of proposed new systems will address the issue of service goals.

(7) Rewriting programs to gain efficiency?—For some time, EPA has been attempting to optimize inefficiently designed information systems. Our results have generally been good. We plan to continue this effort and we see potential for further gains. However, this approach to achieving capacity gains is time consuming and holds little promise for near term relief. Also, in many cases, the costs associated with redesign can be so substantial that it is much more cost effective to sustain comparatively less costly equipment upgrades.

(8) Reducing the number of interactive jobs at one time?—The Research Triangle Park center already supports 65% of its workload in batch. This is typical of other, largely scientific computer centers with which we are familiar. It is our judgement that constraining interactive use below the current level would have a negative impact on the Agency's ability to perform scientific work which frequently requires interactive, time constrained analyses, or on the overall productivity of costly scientific staff.

Washington Computer Center

Question. What plans are there for enhancing the computer capacity at the Washington Computer Center, and what are the fiscal year 1981 costs of this?

Answer. EPA has not yet decided on final plans to upgrade the WCC. We have just completed installation of a new operating system and have not yet assessed the effects of this system on center efficiency. It is conceivable that the new system will improve efficiency to the point that additional capacity will not be needed to handle workload increases projected for fiscal year 1981. EPA has asked the Federal Simulation Center (FEDSIM) to study the WCC workload and operations, and recommend whether and when additional capacity is needed.

The current WCC contract expires in December, 1980. EPA has obtained authority from GSA to recompete this contract with provisions for an immediate 40 percent increase in computing capacity and options for additional increases in future years. The situation is similar to that of the NCC upgrade. We could probably meet the immediate short term requirement with a smaller increment of capacity. But the center instability after a CPU upgrade, and the effect of the

instability on programs which depend on the center, convince us that an immediate investment in the larger increment could be prudent.

However, in the event that the FEDSIM analysis shows that no additional capacity is required during fiscal year 1981, we are seeking GSA approval to extend the current WCC contract for one year. The fiscal year 1980 cost of the current equipment configuration is $3,500,000. That is also the projected cost in fiscal year 1981 if no change is required. If the FEDSIM analysis should validate the need for a 40 percent increase, the total cost is projected to be $4,200,000 an increase of $700,000.

EPA has not requested additional funds in fiscal year 1981 to upgrade WCC capacity. Should an upgrade prove necessary, the costs will be partially offset by savings from converting to a government-owned, contractor-operated facility. However, we would have to absorb the remaining cost by making an across the board reduction in the cost of non-machine related user services provided by the data center, such as training, systems optimization, assistance with data conversion, etc.

ADP Costs

Question. For the record, update the table which appears on page 526 of the 1980 hearing volume.

Answer. The EPA budget for fiscal year 1981 includes an estimated $68.2 million, and will utilize an estimated 478 workyears in support of ADP. We propose to distribute the $68.2 million as follows:

Fiscal year 1981

	Thousands
Capital investments	$5,361
Equipment rentals, space and other operating costs	7,051
Personnel costs	13,428
Commercial services	41,229
Timesharing	(15,716)
Equipment maintenance	(2,311)
System analysis	(9,972)
ADP studies	(13,230)
Interagency services	1,014
Other services	162
Total	$68,245

GAO Report on ADP

A recent General Accounting Office report made the following recommendations. For each, please describe EPA's approach to complying with it:

Recommendation. That EPA should establish a central information resources management office at the deputy assistant administrator level that would: Assess ADP problems and establish priorities; discuss possible solutions and develop an action plan; and review implementation.

Response. We concur in principle with the recommendation that the information management function should be evaluated to a higher level, although we will have to work out may details before this change is made. The recently created DAA Committee on Monitoring and Information Management has been given authority to establish policy, recommend priorities and budgets, and oversee the progress of major systems development efforts. In addition, this Committee has been directed by the Administrator to recommend the appropriate organizational arrangements, by the end of FY 80. We believe this timing is appropriate because it will permit the DAA Committee to gain sufficient experience to develop meaningful recommendations for the make-up and authority of the new information management function. EPA is in the midst of a series of major reform initiatives in the area of information management, all of which have been undertaken within the present organizational framework. Any alteration in reporting relationships would result in a serious loss of momentum in these reform efforts. For this reason, we decided that the DAA Committee should consider the organizational issue later this year.

Recommendation. That EPA: Set priorities for system development at the highest level; closely track system development progress and take necessary actions; and strengthen project management, technical and financial controls over contracted system development efforts.

Response. As we indicated in the item above, the Administrator has charged the DAA Committee with responsibility for setting priorities. To facilitate this process,

we are developing procedures to assure that the information systems related portion of the budget can be meaningfully evaluated as a total program as opposed to having costs scattered and submerged throughout the budget. Additionally, we have made a major effort to consolidate technical resources within the central staff to permit more effective oversight of systems being developed under contract. This staffing initiative will doubtlessly result in more efficient and cost effective systems. The Agency is also establishing an information clearinghouse to facilitate the use of information already contained in its many data bases, to identify functional overlay and duplication between systems and to assure that what is now in present data bases is fully utilized before new and potentially redundant systems are designed.

Recommendation. That EPA: Reasses the 1980's ADP requirement and ensure that workload projections are kept current; and perform a formal cost/benefit analysis of alternatives in replacing or upgrading the Washington Computer Center resources taking into account total life-cycle costs.

Response. The Administrator has asked the DAA Committee to review the 1980's acquisition plan, and to maintain a continuing involvement as it is carried through. To address questions of capacity in the period before the 1980's acquisition, the DAA Committee has agreed to a zero based review of ADP budgets. This review will insure that computer resources needs which are given the highest priority, are those which support EPA's highest priority program.

EPA is taking two actions prior to replacing the Washington Computer Center resources. First, EPA has asked the Federal Simulation Center (FEDSIM) to study the WCC workload and operations and recommend whether and when additional capacity is needed. Second, the Agency is performing a total life-cycle cost analysis for the several options which might emerge from the FEDSIM study.

Recommendation. That the Office of Inspector General: Increase its ADP audit capability either directly or through contract support; and perform management audits of ADP systems design and development, equipment acquisition, applications systems and security of facilities.

Response. The Office of the Inspector General has recently established a working agreement with the Federal Simulation Center (FEDSIM) to provide the requisite technical expertise for the conduct of Agency ADP audits. With FEDSIM support, the OIG is already performing the audits:

Making an assessment of the need for a capacity up-grade at the Washington Computer Center in view of current workload.

Evaluating known new requirements to determine their probable impact on date center workload.

Surveying major users to confirm that the need for current levels of service appears justified.

Reviewing operating procedures now in use to determine whether they achieve an acceptable level of processing efficiency.

The OIG does not now possess the manpower necessary to engage in audits of ADP systems development and design, nor to do more than sporadic audits of facility security.

U.S. Regulatory Council Positions

Question. The U.S. Regulatory Council is requesting $3,338,000, an increase of $256,000 above the 1980 current estimate. I notice that positions increased by one and full-time equivalency by ten in 1980. Why?

Last year, the Council was advertised as a small staff with a big research budget. This year the staff has increased by 62 percent and the study funds have decreased. Why has the emphasis changed from contracting to in-house personnel?

Answer. Original plans for the Regulatory Council envisioned a large portion of our activity to be the conduct of major studies. During our initial year of operation, we found that we were increasingly called upon to facilitate interagency coordination of issues related to regulation and regulatory reform; meanwhile, our 36 member agencies became increasingly active in initiating their own efforts on the economic impact of regulation. Accordingly, with this shift in emphasis, we began to program our activities much more heavily toward coordination, a function requiring in-house capability and one less amenable to outside contracting.

Meetings of Regulatory Council

Question. How many meetings of the Council have been held?

Answer. The Council and its subcommittees have held frequent meetings during the past year. The full Regulatory Council of 36 members has met three times, and the Executive Committee has met seven times. In addition, the Council Calendar

Representatives have met formally and informally on numerous occasions, and our special subcommittees on automobiles, coal, innovative techniques, cancer policy, formaldehyde, and hospitals have met repeatedly.

Regulatory Calendar

Question. How many times has the Regulatory Calendar been published? What impact has the Calendar had?

Answer. The semi-annual Calendar of Federal Regulations has been published twice—in February and November of 1979. Publication of the next edition is scheduled for May 1980.

The Calendar has impacted upon federal agencies by:

(1) enabling agencies to focus upon regulatory proposals at one time in one place in a unified format;

(2) enabling each agency to recognize the volume of their proposed regulations;

(3) assisting each agency in becoming aware of the cumulative effect of all agency proposals; and

(4) facilitating better interagency coordination of proposed rulemaking.

We believe the Calendar has been of substantial benefit to the public by offering an information resource in the form of a single source document summarizing major proposed regulations. The Calendar further enables readers to understand the requirements for public participation in the rule-making process. Thus, the overall benefit to the government and the public is a tool for better management and understanding of the regulatory process.

Regulatory Council Workyears

Question. How many workyears has the Council funded in 1980 to date?

Answer. The Council has funded 10.4 workyears in 1980 to date.

Regulatory Council Obligations

Question. What are 1980 obligations through January?

Answer. The Council has obligated $710,000 of fiscal year 1980 funds through January 1980.

Chairman of Council

Question. Mr. Costle is still Chairman of the Council, correct? Last year, there was talk of a rotating chairmanship. Has that situtation changed any? That is, has the Administrator of EPA become the Council's permanent chairman?

Answer. When President Carter announced the formation of the Regulatory Council on October 31, 1978, he stated that the "Council will be chaired by a member [of the Council] for a one year term." The President appointed Douglas Costle the first chairman and reappointed him on January 7, 1980, for an additional year. This reappointment is not inconsistent with the concept of a rotating chairmanship. The two-year appointment allowed better continuity during the initial organization and operation of the Council and was strongly supported by both executive and independent member agencies.

Regulatory Council Authorizing Legislation

Question. The Administration still has not proposed authorizing legislation for the Council, has it? Are there plans to do so.

Answer. The Administration recently proposed authorizing legislation for the Regulatory Council in amendments to the overall regulatory reform bills in mark-up in the Senate Governmental Affairs Committee (S. 262) and in the House Judiciary Subcommittee on Administrative Law and Governmental Relations (H.R. 3263).

Buildings and Facilities 1980 Obligations

Question. The Building and Facilities Account, Page BF–1, is increasing from $1,425,000 in 1980 to $4,115,000 in 1981. What are actual 1980 obligations to date?

Answer. Obligations for this account generally occur during the third and fourth quarters of the year because of the nature of the procurement process. Initial project efforts consist of in-house development of work statements, design specifications, or contract requirements. Funds are not obligated until outside contractural arrangements are completed. As of this date, $97,738 has been obligated and a total of $250,000 has been committed. In addition, considerable process has been made

toward obligating funds for the two largest projects, $420,000 for upgrading a HVAC system in Corvallis, Oregon, and $150,000 for phase II of a sanitation system in Edison, New Jersey. The scope of work statements for both these large projects are complete and should be approved within the next two weeks by our Office of Occupational Health and Safety. We fully expect to obligate the remainder of the funds during the third and fourth quarters of fiscal year 1980.

BUILDINGS AND FACILITIES

Question. The Buildings and Facilities account, Page BF-1, is increasing from $1,425,000 in 1980 to $4,115,000 in 1981.

For the record list the planned projects for 1980 and 1981.

How many of these projects are needed to comply with Occupational Safety and Health Standards?

How many are phased projects which will require additional funding in future years?

Answer. The list of the 41 projects in 1980 and the 37 projects in 1981 is provided.

The projects which are needed to comply with safety and health standards are coded with "S". There are 37 such projects in 1980 and 31 in 1981. The remaining projects (4 in 1980 and 6 in 1981) are pollution abatement related and are coded with a "P".

The phased projects which will require additional funding in future years number 16 in 1980 and 4 in 1981 and are identified on the listing with an asterisk (*).

Finally, the Committee will note that the current project listing for fiscal year 1980 includes some changes and deletions from the original list submitted in the fiscal year 1980 Congressional budget. Several projects were identified in an Occupational and Health Safety survey as highly urgent and are now included. Design projects have been deleted where construction funds were not approved for fiscal year 1981. Four projects are required for change orders on projects started in prior years.

FY 1980

REPAIRS AND IMPROVEMENTS

LOCATION AND PROJECT	ESTIMATED COST	PROJECT CODE 1
NARRGANSETT, RI		
Pollution Abatement Design	$ 25,000*	P
Modify Room Air Supply	10,000	S
Fumehood Exhaust Extension	20,000	S
LEXINGTON, MASS.		
Fumehood Upgrading	16,000	S
EDISON, N.J.		
San. Sewer System, Phase II	150,000	S
Demolition	1,000	S
Heating System Design	50,000*	S
Electric Sys. Mod. Design	20,000*	S
Security Fence Design	8,000*	S
Sprinkler System Repairs	12,000	S
BELTSVILLE, MD.		
Bldg. 306 Modifications	10,000	S
Safety Modifications	50,000	S
WARRENTON, VA.		
Pollution Abatement Design	3,000*	P
ATHENS, GA.		
HVAC System Design	8,000*	S
Fumehood Upgrading	40,000	S
MONTGOMERY, AL.		
Fumehoods/Scrubbers	35,000	S

FY 1980

REPAIRS AND IMPROVEMENTS

LOCATION AND PROJECT	ESTIMATED COST	PROJECT CODE 1
GULF BREEZE, FL.		
Fumehood Upgrading	$ 30,000	S
Relocate/Ren. Bldg. 34	60,000	S
Remove Bldgs. 25/26	4,000	S
Emergency Storm Repairs	30,000	S
CINCINNATI, OH		
Concrete Pavement Repairs	35,000	S
Roof Repairs	8,000	S
GROSSE ILE, MICH.		
Fence Design	7,000*	S
Lab Waste Drain Lines	5,000	S
CHICAGO, ILL		
Containment Lab Design	8,000*	S
BAY ST. LOUIS, MI		
Fumehood Upgrading Design	10,000*	S
DULUTH, MINN		
HVAC System	30,000	S
Pollution Abatement Design	65,000*	P
ADA, OK		
OSHA Door Modifications	2,000	S
Heating Coils	16,000	S
Carcinogen Storage Design	15,000*	S
DENVER, COLO.		
Fire Suppression Design	4,000*	S
Egress Mod. Design	5,000*	S
HVAC System Design	24,000*	S
Fumehood Upgrading	30,000	S
CORVALLIS, OR		
HVAC System	420,000	S
Haz. Mat'ls Storage	30,000	S
Fumehood Upgrading	75,000	S

FY 1980

REPAIRS AND IMPROVEMENTS

LOCATION AND PROJECT	ESTIMATED COST	PROJECT CODE 1
WENATCHEE, WA		
San. Sewer Design	$ 2,000*	P
Security Fence	2,000	S
	$1,375,000	

FY 1980

NEW CONSTRUCTION

GULF BREEZE, FLA		
Planning and Design of a power shop and storage building	50,000*	S
TOTAL B & F	$1,425,000	

1 Project Code

S = Occupational Safety and Health Standard related.

P = Pollution abatement related.

*Phased project requiring additional funding in future.

FY 1981

REPAIRS AND IMPROVEMENTS

LOCATION AND PROJECT	ESTIMATED COSTS	PROJECT CODE [1]
NARRANGANSETT, R.I.		
Emergency Generator Exh.	$ 10,000	S
Alarms	3,000	S
Pollution Abatement	210,000	P
Safety Mods, Sup. Bldg.	10,000	S
EDISON, N.J.		
Water Pollution Abate, Des.	10,000*	P
Fumehood Mods.	20,000	S
BELTSVILLE, MD.		
Fumehood Mods.	20,000	S
Ventilation Sys. Mods.	5,000	S
Barrier Change Room	5,000	
Ventilation Sys. Mods.	30,000	S
NEWTOWN, OHIO		
Isolation Room Design	50,000*	S
Fumehood Mods.	20,000	S
CINCINNATI, OHIO		
Fumehood Upgrading	200,000	S
GROSSE ILE, MICH.		
Fumehood Mods.	20,000	S
Fencing Lower Base Property	50,000	S
ADA, OK		
HVAC Mods.	500,000	S
Fumehood Mods.	20,000	S
CORVALLIS, OREGON		
Hazardous Materials Storage	30,000	S
Fire Suppression Sys.	25,000	S
Fire Suppression Sys. Design	20,000*	S
Fumehood Upgrading	50,000	S
WENATCHEE, WASHINGTON		
Fumehood Upgrading	15,000	S
Fire Suppression Sys.	20,000	S
DENVER, COLO.		
Modify HVAC (NEIC)	175,000	S
Fire Suppression	35,000	S
Egress Mods.	40,000	S
CHICAGO, ILL.		
Fumehood Upgrading	20,000	S
Containment Lab	100,000	S

FY 1981

REPAIRS AND IMPROVEMENTS

LOCATION AND PROJECT	ESTIMATED COSTS	PROJECT CODE [1]
GULF BREEZE, FLA.		
Effluent Treat. Sys. Des.	$ 15,000*	P
Fire Suppression	171,600	S
VINT HILL, VA.		
Pollution Abatement	25,000	P
BAY ST. LOUIS, MISS.		
Fumehood Vent Sys. Mods.	125,000	S
MANCHESTER, WASHINGTON		
Install Waste Holding Tank	15,000	P
ATHENS, GA.		
HVAC Mods.	800,000	S
DULUTH, MINN.		
Pollution Abatement	600,000	P
Fire Suppression Sys.	200,000	S
TOTAL REPAIRS AND IMPROVEMENTS	$3,664,600	

FY 1981

NEW CONSTRUCTION

GULF BREEZE, FLA.		
Phase III	$ 450,000	S
TOTAL BUILDINGS AND FACILITIES	$4,114,600	

[1]Project Code

S = Occupational Safety and Health standard related.

P = Pollution abatement related.

*Phased project requiring additional funding in future.

Questions Submitted by U.S. Representative Tom Bevill

RACT Guideline

Question. Is there, in fact, an EPA policy on uniform RACT guideline or not? What guidance has been given to States on RACT?

Answer. EPA has not issued a formal RACT guideline for the steel industry. The Agency has not established such a guideline because it recognizes that not all steel plants and processes are alike. It is possible, for example, that a specific process at a specific plant may not be able to control its emissions to the same extent as other similar processes can be controlled. EPA is willing to discuss such problems on a case-by-case basis with States and recognize any circumstances which would require a different level of controls for that source from that generally considered as reasonably available if it is clearly demonstrated that such differing standards represent RACT for that source.

In the absence of these differing circumstances, EPA believes there is a level of control which could normally be considered RACT. EPA's view of acceptable control levels is based, on the control levels that have already been achieved on comparable steel processes. While this judgment is reflected in a number of agreements with various steel companies, the RACT emission limitations are a result of EPA's technologies analysis of available controls. EPA does not require each State to adopt the most restrictive emission limits that have ever been achieved or agreed to. We do, however, insist that good control be required. An example may be useful. Visible emissions from the charging of coke batteries in Pennsylvania are allowed for no more than 19 seconds during a charge. A number of coke batteries have demonstrated compliance with this limit. EPA, however, is not insisting that States adopt the 19-second limit but is willing to accept standards which ensure controls comparable to a coke charging limit of up to 25 seconds a charge (a standard that is less stringent by 32 percent).

SIP's Relating to Steel Industries

Question. Why is there an apparent moratorium of approval of SIP's relating to steel facilities?

If there is not a moratorium on approving these SIP's, then what is the hold up and when will they be approved, given the tremendous penalties imposed on States which do not have approved SIP's?

Answer. There is no moratorium on actions on SIP's relating to steel facilities, although the Agency has been working to resolve the outstanding issues with the States concerned to insure that State SIP's are at least conditionally approvable. EPA expects to propose formal action on the steel-related portions of SIP's submitted to the Agency within the next few weeks.

It should be noted that SIP's including steel-related provisions also have other deficiencies, either in stringency or enforceability. Therefore, the deficiencies in the steel-related portions are not the only reasons for being unable to approve fully the State SIP's. In any event, where it would expedite action on the State SIP as a whole, the Agency has separated out the non-steel provisions and is proceeding with them as a separate package. However, EPA will take action on all aspects of a properly submitted SIP as quickly as possible. (It should be noted that not all steel SIP's have been submitted by the States yet, and that several were submitted late.)

Steel Companies Violation

Question. If EPA continues to delay approval of the SIPs, how can the steel industry know what equipment they must install and do so in a timely manner to meet the December 31, 1982 deadline imposed in the Clean Air Act?

Answer. The lack of approved attainment plans for areas in which steel mills are located should not excuse steel companies from installation of controls on a schedule which will ensure final compliance with specific emission limitation by December 31, 1982. Most steel companies are still in violation of the SIP's promulgated after the passage of the 1970 Clean Air Act which required compliance with the various emission limitations by 1975. Since steel mills are generally located in nonattainment areas, where SIPs have proven to be inadequate, there is no reason to expect significant relaxations in applicable requirements. To recognize this limited possibility, however, EPA has agreed in its consent decrees with a number of steel companies to a provision which would allow for modification of the specified emission limitations in the agreement in the event that an approved attainment plan requires a different degree or level of performance.

Consolidated Edison's Request

Question. What is the status of Consolidated Edison's request to conduct burning of a higher sulfur content oil in order to obtain data to assist them in their conversion to coal?

Answer. A proposal was published in the January 17, 1980, Federal Register (pages 3331–3333) soliciting public comment within 30 days (subsequently extended to March 5, 1980). We are presently evaluating the 300 comments on the proposal and preparing a final action Federal Register Notice, which we anticipate publishing around the end of April.

Coal Gasification Projects in Alabama

Question. The Chairman of TVA, David Freeman, recently testified before my other subcommittee that he was working closely with you on the coal gasification plant TVA plans to build in Alabama. Could you comment on your Agency's activity on this project and do you support the project?

Answer. EPA personnel from the Office of Research and Development in Washington, D.C. and our Industrial Environmental Research Laboratory (IERL) in North Carolina have met several times with TVA personnel on future EPA involvement in the two planned TVA coal gasification projects in Alabama, the Ammonia from Coal Project (ACP) pilot plant employing a coal gasifier as a first step, and the 20,000 TPD coal gasification demonstration plant.

We have unofficially agreed to provide $200,000 in 1980 for the ACP to develop an environmental test program for future years as well as initiate data acquisition in 1980. In our letter of January 25 to TVA, we have also described the type of environmental test program in which we would be interested in cooperating with TVA in future years. The ACP will incorporate a Texaco gasifier and a number of pollution control devices. The Texaco gasifier appears to have impressive commercialization potential and its high operating temperature may reduce some environmental problems normally associated with coal gasification. Also, the two Stretford units for dilute and concentrated streams as well as the Selexol acid gas removal system and carbonyl sulfide hydrolysis unit provide a unique opportunity for gathering environmental data.

We have also expressed an interest to TVA in a cooperative effort in the area of environmental assessment and pollution control evaluation with respect to the 20,000 TPD gasifier, but plans for our involvement are in very early stages of development.

We do believe that TVA is interested in the construction and operation of an environmentally sound plant and in a recent letter to TVA have invited them to send a representative to serve on EPA's Coal Gasification and Indirect Coal Liquefaction Working Group that oversees all of the Agency's activity in this area.

Wastewater Sludge

Question. Does EPA have any background data, other than the VERSAR report, to substantiate the classification of textile wastewater treatment sludges as hazardous to the environment when disposed of?

Answer. EPA's Development Document for Effluent Limitations Guidelines and Standards for the Textile Mills Point Source Category also notes the presence of toxic metallic and organic pollutants in textile wastewater and indicates that these pollutants are only partially removed by wastewater treatment and, as a result, are incorporated into the sludge.

Municipal and Industrial Sludges

Question. Does EPA have any technical data to support the different regulatory approaches proposed for municipal versus industrial sludges?

Answer. EPA's intent has always been equivalent coverage of municipal and industrial sludges. Indeed, this was demonstrated by the co-promulgation of the Criteria for Classification of Solid Waste Disposal Facilites and Practices under § 4004 of the Resource Conservation and Recovery Act and § 405 of the Clean Water Act. In deferring to the authority of the Clean Water Act in regard to control of municipal wastewater treatment sludges in the December 18, 1978 proposed hazardous waste regulations, EPA did not intend to exclude such wastes from appropriate controls in order to protect public health.

The final § 3001 regulation, upon promulgation in April, 1980, will detail, for various types of sludges, any need for their classification as hazardous wastes and will provide necessary background documentation.

60-531 O - 80 - 24

Toxicity of Sludge

Question. Does EPA have comparative data on the toxicity of municipal sludge versus industrial sludges?

Answer. EPA has data on contaminants in municipal sludge but necessary data on industrial sludges to support any comparisons as to toxicity are lacking at this time.

Hazardous Constituents in Wastewater Sludges

Question. Does EPA have data to show that any hazardous constituents present in textile wastewaters are in fact present in wastewater sludges.

Answer. The following data, developed for EPA by VERSAR in its report, Assessment of Industrial Hazardous Waste Practices—Textile Industry, June 1976, illustrate that hazardous constituents exist in wastewater sludges. This information was included in EPA's Draft Background Document on Hazardous Wastewater Treatment Sludges Generated by the Textile Industry.

SUMMARY OF SLUDGE ANALYSIS AND ESTIMATED QUANTITIES OF CONTAMINANTS

[Concentration in sludge, mg/kg dry sludge]

Waste stream contaminant	Wool dyeing and finishing	Knit fabric dyeing and finishing	Woven fabric dyeing and finishing	Stock and yarn dyeing and finishing	Carpet dyeing and finishing	Wool scouring
Arsenic	(17)	(4.8)	(1)	(2.5)	(10)	(0.1)
Barium	(170)	53	39	(25)	(95)	59
Cadmium	(17)	54.5	4.4	(2.5)	(10)	1.2
Chromium	267	33	1,196	31	112	19
Lead	(170)	(52)	36	(25)	110	28
Mercury	(1.7)	1.4	0.35	0.66	[1]	(0.01)
Total metals	643	199	1,280	87	337	107
Total chlorinated organics	0.11	4.7	15.2	40.1	26.2	1.28

[1] Not available.

Percolation of Hazardous Constituents

Question. Has the Agency conducted any monitoring or testing which demonstrates the percolation of hazardous constituents from textile sludges to groundwater?

Answer. No such monitoring or field testing has taken place.

1979 EPA CASH BONUS EXPENDITURES

Mr. Sabo. What is the total amount EPA spent on cash bonuses in 1979?

[The information follows:]

Cost of Cash Awards

EPA spent $193,053.00 on Cash Awards in fiscal year 1979.

AMOUNT BUDGETED IN 1980 AND 1981 FOR CASH BONUSES

Mr. Sabo. What is budgeted for bonuses in 1980 and 1981?

[The information follows:]

Cash Bonuses

We provide for all pay needs, including awards and bonuses, in our personnel cost estimate. Our managers must stay within their salary plans when awarding performance awards or merit increases. In 1980 and 1981, we have budgeted for awards at the same level as in 1979 (1979 awards: $193,053.00). With OMB's approval, the

Agency included $1.7 million for Senior Executive Service (SES) bonuses in its 1981 request. The SES Bonus estimate for 1980 is also $1.7 million.

1979 CASH BONUSES

Mr. SABO. In 1979, did EPA employ any EPA employee, other than those in the Executive Schedules, that received more than $47,500 in salaries and bonuses? Would you submit that for the record.

[The information follows:]

SALARY AND BONUS COSTS

During fiscal year 1979, the Environmental Protection Agency paid eighteen employees more than $47,500 maximum base pay. In sixteen cases, the employees earned a cash award which, when added to their base salary, exceeded $47,500. In two other cases, foreign post differentials increased the salary to over $47,500.

LARGEST SINGLE CASH BONUS PAID IN 1979

Mr. SABO. What was the largest single cash bonus made in 1979?

Mr. DRAYTON. The Administrator is only authorized to approve up to $10,000 under the new Civil Service Reform Act. Under the old award system, the limit was $5,000.

Mr. SABO. Will you submit that for the record.

[The information follows:]

CASH AWARDS

The largest single cash award granted to an individual in 1979 was $5,000.

END-OF-YEAR OBLIGATIONS

Mr. SABO. Considerable attention has been directed lately to end-of-year buying. For the record provide the percentage of total obligations which were incurred in the last month of the three preceding fiscal years.

[The information follows:]

END-OF-YEAR BUYING

Over the last three years, the average percentage of total obligations which we incurred in September was 34%. The following chart displays the percent of final month obligations, by year, for the operating budget and for the construction grants program.

FINAL MONTH OBLIGATIONS

[As percent of total year obligations]

	1979	1978	1977
Operating obligations	19.2	20.5	20.1
Construction grants obligations	40.3	36.3	36.7
Total obligations	35.6	32.2	35.1

CONTROL OF END-OF-YEAR OBLIGATIONS

Mr. SABO. One proposal which has been offered as a way to control end-of-year buying is to prohibit agencies by law from

spending more than 20 percent of an annual appropriation in the final two months. How would that affect EPA?

Mr. COSTLE. I think it would be kind of tough when you look at the nature of our grant programs.

Mr. SABO. Just for annual appropriation accounts?

Mr. COSTLE. Oh, for annual appropriation accounts, that would include contract work.

Dr. GAGE. Doug, if I could jump in. On the R&D contracts, I think it would have a very serious effect, not just because we buy contracts in the last month or two months of the year, but because there is money left over. We work very carefully with the contracts office to schedule the commitment and obligation of those funds over a period of time. To get contracts out on a regularized basis, there must be intensive activity during the last three or four months of the year.

Mr. SABO. R&D is a two-year account, isn't it?

Dr. GAGE. That is right, but we typically try to live within the one-year appropriation anyway.

CONTRACT PLANNING SYSTEM

Mr. HANLEY. Mr. Chairman, our procurement director has actually testified on the bill you are referring to. The purpose of his testimony was to describe the system that EPA uses for procurement planning, which was characterized by the Congressional committee as a model.

It basically comes down to this. We require each program office, whether they are working with two-year money or one-year money, to commit themselves to a certain annual expenditure level. They must submit a plan to the Contracts Division at the beginning of the year that describes how much they plan to spend through contracts and when. Programs must submit the actual procurement document that starts the process to the Contracts Division by April. If a formal procurement request is not received by Contracts by, I think it is April 15, or it could be May 1, we do not process contracts except under emergency conditions.

So while EPA's year-end obligations in the last quarter for one-year money will probably be in the range of 30 to 40 percent, we can show you that every one of those procurements has been submitted and been in process for anywhere from six to eight months, depending on the character of the procurement. I think the key is not when the final obligation is made, but when the procurement begins. In our testimony on that particular bill we urged that whatever controls are put in place be keyed to sound procurement planning, not simply the dollars obligated at the end of the year.

The other factor is that we have gone increasingly to a multi-year mission contract, so that we could get out of this annual buying cycle. As a result of that, we can make a decision to invest money in the second year of a contract, which could coincidentally end up expiring or coming up for renewal in the last quarter. You could see a fairly large dollar amount showing up as an obligation in the last quarter. This obligation is not a new procurement

hastily decided on at the end of the fiscal year, but it is simply the funding of a second year of a three-year contract.

Mr. SABO. Thank you. That concludes the questioning.

We have enjoyed your presentation and look forward to seeing you again. We will place your budget justification in the record at this point. The Committee stands adjourned.

[The justification follows:]

ENVIRONMENTAL PROTECTION AGENCY

1981 Budget Estimate

Table of Contents

	Page
Summary Tables	1
Air	A-1
Health and Ecological Effects	A-15
Industrial Processes	A-31
Monitoring and Technical Support	A-36
Air Quality and Stationary Source Planning and Standards	A-46
Mobile Source Standards and Guidelines	A-54
State Program Resource Assistance	A-61
Air Quality Strategies Implementation	A-67
Mobile Source Preproduction Compliance Verification	A-70
Trends Monitoring and Progress Assessment	A-74
Stationary Source Enforcement	A-79
Mobile Source Enforcement	A-84
Water Quality	WQ-1
Health and Ecological Effects	WQ-18
Industrial Processes	WQ-37
Public Sector Activities	WQ-45
Monitoring and Technical Support	WQ-59
Water Quality Planning and Standards	WQ-71
Effluent Standards and Guidelines	WQ-87
Grants Assistance Programs	WQ-95
Water Quality Strategies Implementation	WQ-100
Water Quality Monitoring and Analysis	WQ-113
Municipal Source Control	WQ-118
Permit Issuance	WQ-129
Water Quality Enforcement	WQ-134
Drinking Water	DW-1
Public Sector Activities	DW-11
Monitoring and Technical Support	DW-21
Criteria, Standards, and Guidelines	DW-24
State Program Resource Assistance	DW-29
Drinking Water Management	DW-33
Drinking Water Enforcement	DW-36
Solid Waste	SW-1
Public Sector Activities	SW-13
Waste Management Regulations, Guidelines, and Policies	SW-21
Financial Assistance	SW-31
Waste Management Strategies Implementation	SW-37
Technical Assistance	SW-43
Uncontrolled Hazardous Waste Sites	SW-49
Hazardous Waste Enforcement	SW-52
Permit Issuance	SW-58

	Page
Pesticides	P-1
Health and Ecological Effects	P-12
Industrial Processes	P-23
Monitoring and Technical Support	P-28
Registration and Tolerances	P-31
Standards Setting and RPAR	P-38
Federal and State Program Support	P-44
Pesticides Enforcement	P-47
Radiation	R-1
Health and Ecological Effects	R-9
Monitoring and Technical Support	R-13
Criteria, Standards, and Guidelines	R-15
Environmental Impact Assessment	R-17
Program Implementation	R-21
Noise	N-1
Environmental Noise Strategies and Standards	N-8
Noise Program Strategies Implementation	N-12
Noise Enforcement	N-19
Interdisciplinary	I-1
Health and Ecological Effects	I-7
Anticipatory Research	I-11
Monitoring and Technical Support	I-20
Environmental Impact Statements	I-25
Energy Permitting and Review	I-30
Toxic Substances	TS-1
Health and Ecological Effects	TS-9
Industrial Processes	TS-25
Monitoring and Technical Support	TS-28
Toxic Substances Strategies	TS-34
Toxic Substances Enforcement	TS-46
Energy	E-1
Fuel Processing, Preparation and Advanced Combustion	E-13
Fuel Extraction	E-18
Environmental Assessment of Conventional and Advanced Energy Systems	E-22
Flue Gas Sulfur Oxide Control	E-30
Nitrogen Oxide Control	E-33
Flue Gas Particulate Control	E-36
Transport, Fate and Effects of Energy Related Pollutants	E-39
Atmospheric Transport and Transformation of Energy Related Pollutants	E-43
Measurement Systems and Instrumentation Development for Energy Related Pollutants	E-48
Health Effects of Energy Related Pollutants	E-53

Page

Management and Support MS-1
Management MS-4
Support MS-12

Buildings and Facilities BF-1

Scientific Activities Overseas SAO-1

Regulatory Council RC-1

Construction Grants CG-1

Oil and Hazardous Substances Liability Fund SF-1

Special Analyses
Table of Contents SA-1

ENVIRONMENTAL PROTECTION AGENCY

Budget Summary

The U.S. Environmental Protection Agency's 1981 budget proposal totals $5,341,317,000. The proposal includes $1,391,317,000 for the Agency's operating programs, $3.7 billion for the municipal waste treatment facilities construction program, and $250 million to implement the Administrator's proposed oil and hazardous substance liability fund. The operating program proposed includes $3,338,000 to support the U.S. Regulatory Council. The budget recognizes EPA's growing workload and, in addition to the proposed new appropriation for the oil and hazardous substances liability fund, includes increases of $104,766,000 for the Agency's operating programs and $300,000,000 million for the construction program.

In addition, EPA is requesting supplemental authority of $26,507,000 in 1980, $14,309,000 for the unabsorbed costs of the 1980 pay raise and $12,000,000 to strengthen and accelerate EPA's promulgation of regulations this year under Subtitle C of the Resource Conservation and Recovery Act of 1976.

The most significant change reflected in the 1981 Budget for EPA is the increase and redirection of its resources toward abating pollution from industrial hazardous wastes and controlling their transport, storage and disposal as required by the Resource Conservation and Recovery Act (RCRA). The Budget requests an increase of $47,338,106 and 368 full-time permanent work years to support the research, analysis, continued regulatory development, and enforcement capability which EPA needs to implement the hazardous waste control provisions of RCRA.

The proposed "superfund" legislation and the requested $250,000,000 for its first year of operation complement the increases for RCRA implementation. RCRA addresses the problems of pollution by industrial hazardous wastes from current and future production. The "superfund" legislation and program begins to address the problems created by past abuses in the storage and disposal of hazardous wastes.

I. APPROPRIATION SUMMARY

In 1980 the Congress restructured EPA's appropriations to create a single appropriation for all salary and expense costs and to consolidate grants, contracts and other extramural costs for abatement, control and compliance activities under a single appropriation. The Congress's changes established eight appropriation accounts as follows.

EPA's Request by Appropriation Account

Appropriation	1980 Current Estimate $	1981 Budget Estimate $
Salaries & Expenses	$521,513,000	$562,542,000
Abatement, Contro' & Compliance	525,957,000	555,338,000
Research & Develooment	234,574,000	264,984,000
Scientific Activities Overseas	---	1,000,000
Buildings & Facilities	1,425,000	4,115,000
U.S. Regulatory Council	3,082,000	3,338,000
Operating Programs Subtotal	1,286,551,000	1,391,317,000
Construction Grants	3,400,000,000	3,700,000,000
Oil and Hazardous Substances Liability Fund	---	250,000,000
Total	$4,686,551,000	$5,341,317,000

The following briefly describes the content of each appropriation and the changes requested within each from the Agency's current 1980 estimates.

Salaries and Expenses

EPA requests an increase of $41,029,000 for its Salaries and Expenses appropriation which finances salaries and related costs associated with administering the programs within the Environmental Protection Agency. It incorporates all costs exclusive of grant programs and program-specific contractual agreements.

Abatement, Control and Compliance

The Abatement, Control and Compliance appropriation finances contracts, grants, and cooperative agreements for pollution abatement, control and compliance activities. EPA requests an increase of $29,381,000 for Abatement, Control and Compliance in 1981.

Research and Development

The 1981 budget proposed an increase of $30,410,000 for the Research and Development appropriation. This appropriation finances EPA's research efforts through grants, contracts, and agreements with universities, industries, private commercial firms, non-profit organizations, State and local governments, and other Federal agencies, as well as through research and development at EPA's laboratories and field locations.

Scientific Activities Overseas

The Scientific Activities Overseas appropriation finances payments in foreign currencies, which the Treasury Department determines to be excess to the normal requirements of the United States, for necessary expenses of the Environmental Protection Agency. Excess foreign currencies, derived through sales of surplus agricultural commodities and other sources, support cooperative environmental pollution research and demonstration programs overseas. The 1981 budget provides $1,000,000 for Scientific Activities Overseas.

Buildings and Facilities

EPA requests an increase of $2,690,000 for the Buildings and Facilities appropriation which finances the construction, repair, improvement, extension, alteration, and purchase of fixed equipment of facilities owned, as well as existing facilities occupied by the Environmental Protection Agency.

U.S. Regulatory Council

The U.S. Regulatory Council appropriation finances the salaries and expenses of the U.S. Regulatory Council and its staff. The Council, established in October of 1978 at the direction of the President, is composed of the heads of those agencies within the Executive Branch that have regulatory responsibilities. Its purpose is to maintain an overview of regulatory activities within the Executive Branch and to assist the President in managing them in a coordinated way so as to limit potential adverse impacts on the economy. The budget requests an increase of $256,000 for the U.S. Regulatory Council in 1981.

Construction Grants

The Construction Grants appropriation is for grants to local public agencies for construction of municipal wastewater treatment facilities to assist States and localities in attaining and maintaining water quality standards.

The 1981 budget requests $3,700,000,000 for the Municipal wastewater facilities construction grants program. This request, in addition to more then $3.0 billion available from prior year appropriations, will provide more than $6,700,000 for obligation in 1981.

Oil and Hazardous Substances Liability Fund

The 1981 budget requests $250,000,000 to support the first year's operation of the Administration's proposed Oil and Hazardous Substance Liability Fund legislation. The legislation consolidates existing federal authorities for notification, response, and liability for oil and hazardous substance releases into the environment and establishes a comprehensive program for combating the problems created by spills and inactive and abandoned disposal sites.

The proposed legislation establishes a four year, $1.625 billion authorization for the fund, $1.3 billion of which will be financed through fees levied on related segments of the oil and chemical industry. The remaining $325,000,000 will be financed through federal appropriations. Of the $250,000,000 proposed for the first year, $200,000,000 will be financed through fees on industry.

II. MEDIA SUMMARY

Below the appropriation level the Environmental Protection Agency's activities are organized into eleven major media programs; air, water quality, drinking water, solid waste, pesticides, radiation, noise, interdisciplinary, toxic substances, energy, and management and support. Following is a summary of each media and the changes which the 1981 budget puts into place within the research and development, abatement and control, and enforcement functions of each.

Air

The 1981 request of $248.5 million for the air program is a decrease of $2.0 million from 1980. This reflects EPA's decision to focus the air program in 1981 on those areas of the country that need extensions of the air standards attainment date until 1987 and which, therefore will require approved implementation plans in 1982. The highlights of other proposed changes to the air program are as follows:

The request increases air research and development by $3,347,300 to $70,167,400 in 1981. The request includes an increase of $2.4 million for research on the health effects of both criteria and noncriteria pollutants and expands the quality assurance program for ambient air quality monitoring.

The request decreases air abatement and control activities by $3,818,000 to $147,020,100. In 1980 the program received $9.1 million to support nonrecurring work on new source performance emission standards for major stationary sources. Discounting this one-time investment, resources for the air abatement and control program's continuing operations increase by $5.3 million.

EPA requests an increase of $600,000 for mobile source in use compliance. EPA is concerned about the potential for widespread deterioration of automative pollution control equipment due to tampering and the use of unleaded fuel, and will place major emphasis on enforcing and anti-fuel switching and anti-tampering provisions of the Clean Air Act.

The budget requests an increase of $4.9 million in financial support to state and local control agencies, $2 million of which will support expanded state enforcement against fuel switching. The remainder will assist states in meeting the Clean Air Act's requirements. The increase includes $712,000 for additional confirmatory testing for fuel economy, reflecting the high priority of energy conservation. The budget proposes a reduction of $443,000 for regional air management in 1981 as more States assume responsibility for the prevention of significant deterioration program.

Although the request of $31,282,100 for air enforcement includes a decrease of $1,549,300, EPA will continue its major source enforcement effort in 1981. This effort concentrates the Agency's stationary source enforcement program on those sources who have never come into compliance and who have not shown plans to comply with the requirements of the Clean Air Act. In addition, EPA expects to begin assessing administrative noncompliance penalties under section 120 of the Clean Air Act in FY 1981. These penalties provide a disincentive for sources to continue to pollute by requiring them to pay fines equal to the savings that they incur by their failure to install pollution control equipment.

Water Quality

The 1981 budget proposes a $2.3 million decreases to the water quality program. The net decrease to the program masks a number of initiatives to further implementation of the 1977 Amendments.

The request of $60,021,900 for water quality research and development is a decrease of $5,133,900 from 1980. This reduction is made up of a decrease of $2.6 million in the research supporting evaluation and analysis of best management practice alternatives for agricultural activities contributing to non-point source pollution and a $1,989,300 decrease to the Great Lakes research and development program. A decrease of $34,000 is also proposed for marine ecological effects research. This will reduce research on the impact of toxic materials on the marine environment.

The overall request for water quality abatement and control is $241,004,000, a decrease of $2,339,000. This decrease is primarily the result of a $3.5 million reduction in water quality management planning/208 grants to eliminate construction related projects, and a $1.5 million reduction in the Clean Lakes program. Increases include $1,497,500 to improve the quality of permits for dredge and fill activities in the Nation's ecologically sensitive wetlands, and $1,562,100 for effluent standards and guidelines to develop economic analyses and engineering surveys of synthetic fuel and industries leading to evaluation of pollution control regulatory options under consideration.

The total request for water enforcement of $34,061,800 is an increase of $5,185,400. An increase of $2.9 million in contract funds is requested to support continued development and implementation of the pretreatment program which controls indirect toxic pollutant discharges to publicly owned treatment works.

An additional $1.0 million is also proposed to process 301(h) requests for secondary treatment waivers from municipalities discharging effluents into marine waters. These waivers have the potential for saving municipalities significant amounts of money by not requiring construction of expensive secondary treatment plants.

Drinking Water

The 1981 budget requests $86,904,900 for the drinking water program, an increase of $10,180,300.

Of the total increase, $4,701,500 is proposed for drinking water research and development, bringing the program level to $27,446,100 in 1981. This increase is to support the development of cost effective technology for small drinking water systems. These systems serve populations of less than 10,000 people and comprise as much as ninety percent (90%) of all drinking water systems. This increase will also support research on the affects of drinking water contaminants on human reproduction and early development.

The request of $58,694,300 for drinking water abatement and control is an increase of $5,651,500. The proposed increase contains $4.2 million to support state underground injection control programs, and $1.2 million to support rural water association.

The drinking water enforcement request for $764,500 is decreased by $172,700 from the 1980 level. This reduction reflects a small reduction in workyears and emergency response contract funds.

Solid Waste

A substantial increase of $47,388,100 is included in the $147,447,800 proposed for the 1981 solid waste program.

The request for solid waste research is $26,446,800, an increase of $12,203,300. This increase will support an intensive effort to establish techniques that will provide a sound scientific and legal basis for data required by the RCRA regulations and the uncontrolled hazardous waste site program. It will provide for remedial research and field testing of technologies available for abating pollution problems at uncontrolled waste sites, and will fund research to support RCRA regulation development for land fill, land treatment and thermal destruction. It will also support chemical, epidemiological, toxicological, and clinical tests to determine the health risks from hazardous waste sites.

The $111,169,400 proposed for solid waste abatement and control is an increase of $29,682,100. The budget requests $9.6 million of this increase to support implementation of the hazardous waste (Subtitle C) section of RCRA and to oversee the 37 states expected to achieve equivalency with federal standards. Initial implementation efforts will emphasize assisting states to assume interim authorization for hazardous waste management programs. EPA and authorized states will also inaugurate a six year program to issue permits for an estimated 30,000 hazardous waste treatment, storage and disposal facilities nationwide and to implement the notification and manifest systems established to control the generation, transport, and disposal of hazardous wastes.

The increase also includes $11.4 million for financial assistance to states for hazardous waste management. These funds will aid the states in developing and implementing hazardous waste management programs to control hazardous waste generation, transportation, treatment, storage, and disposal. The budget proposes a $2 million reduction in financial assistance to states for solid waste management. This decrease is the second of the planned five-year phase out of Subtitle D grant funding as state programs mature. An increase of $1.2 million is requested for the uncontrolled hazardous waste site program to respond to uncontrolled hazardous waste sites. This increase is primarily for special equipment for emergency response and investigative work by field offices.

The request of $9,832,600 for the solid waste enforcement program is an increase of $5.5 million. It will provide increased capability to ensure that all applicable facilities comply with standards established under RCRA. It will also allow us to regulate through permitting and enforcement actions, the transportation treatment, storage and disposal of solid and hazardous waste, and to respond to uncontrolled sites posing an imminent and substantive danger to health and the environment.

Pesticides

The request of $73,999,700 for pesticides programs reflects a net increase of $5,843,500.

The overall proposal includes $9,435,800 for pesticides research and development, a decrease of $3,532,600. Most of the reduction, $3,351,000 is planned in Pesticides health and ecological effects research and development programs, allowing for increased support in environmental exposure assessment and in the registration and RPAR programs. Part of this decrease is offset by applicable research performed under the toxic substances health research program.

The total request for pesticides abatement and control is $49,343,100, an increase of $6,290,800. A large portion of this increase, $4 million, is requested on a one time basis to dispose of 37 tons of Silvex and 1-2 million gallons of Silvex materials in accordance with Section 15 of FIFRA.

An increase of $2.3 million is proposed for the rebuttable presumption against registration review process. This will provide additional exposure analysis, benefit analysis, and other analysis associated with risk/benefit assessments of suspect chemicals. An increase of $4.9 million is requested for developing and completing generic standards in 1981. This reflects a shift from in-house resources to extramural contracts. These resources will permit the completion of 20-40 standards started in 1979 and 1980 and the initiation of an additional 25-40 standards in 1981.

The overall pesticides enforcement request of $15,220,800 includes an increase of $3,085,300. This increase is primarily to fund $3,000,000 in pesticides certification and training grants, thereby assuring continuation of the restricted use classification approach. This approach is essential to maintain high agricultural productivity while protecting applicators, farm workers, and consumers against dangerous chemicals. Responsibility for conducting these programs has shifted within EPA from the regulatory program to the enforcement program.

Radiation

The total request for radiation of $17,782,200 includes a small increase of $520,400. While the radiation research and development program will remain essentially at the 1980 level, an increase of $471,300 is proposed for radiation abatement and control to fund the initiation of one additional Clean Air Act standard, and to support the Radiation Protection Council.

Noise

The 1981 request for the total noise program of $12,927,000 continues the program at an operating level equivalent to that of 1980.

The noise program will place additional emphasis on nonauditory health effects research. Regulation development work will continue to concentrate on surface transportation and construction-type equipment. The regulation of property line standards for interstate rail carriers will be promulgated. Enforcement of new product noise standards, and informational labeling requirements applicable to new products, will continue. Sixteen states are expected to have assumed responsibility for running the Each Community Helps Others (ECHO) program.

Interdisciplinary

The 1981 budget request of $27,240,600 provides an increase of $899,800 for the interdisciplinary program.

The overall request for interdisciplinary research and development is $22,844,100, an increase of $131,300. The budget provides $.8 million to establish a program of accelerated energy facilities review and permitting, it shifts effort from the anticipatory research program to toxic substances research but provides sufficient funds for EPA to continue some fresh water fate, marine science and cancer research activities on an extramural basis. A proposed increase of $115,600 would authorize additional reproductive effects assessment work. The budget request for interdisciplinary abatement and control of $4,396,500 continues EPA's preparation and review of environmental impact statements for all major federal actions having significant environmental impacts.

Toxic Substances

The total request for the toxic substances program of $106,002,400 includes an increase of $11,356,300.

The request for the research and development component of the toxic substances increases by $8,946,200 to $36,895,000. The program will focus on developing reliable, and cost effective techniques to be used for predicting transport, transformation, exposure concentration and adverse effects on human health and the environment resulting from exposure to toxic substances. With the increase, EPA will accelerate the development of research techniques for screening toxic substances. Further research will be done in predicting, measuring, and determining the significance of exposure to commercial chemicals, with the ultimate goal of preventing or reducing adverse human health effects.

The 1981 budget request for toxic substances abatement and control of $63,915,800 includes an increase of $1,162,300 for the regulatory development component of this program. This increase will provide for full operation of the toxic substances program, including a balanced emphasis on regulation of new and existing chemicals based upon the information base established in 1979 and 1980. EPA will continue to place high priority on full operation of the premanufacture review program at an improved level. Development of additional control actions for existing chemicals will receive high priority. Nonregulatory approaches, such as information dissemination and informal discussion, will be used when appropriate to provide protection from potential risks. There will be continued development of test rules and information requirements to obtain data to support assessment and regulation.

The overall request for toxic substances enforcement of $5,191,600 increases by $1,247,800 in line with the increase in the number of enforceable rules promulgated under the Act. In 1981, the toxic substances enforcement program again will have as its first priority the initiation of enforcement actions in emergencies involving substantial threats to public health, safety, or the environment. The increase also includes a $1.0 million program of pilot cooperative enforcement grants to selected states.

Energy

The 1981 budget request for energy of $107,598,600 provides an increase of $6,234,200 for the program. The increase will support $5.7 million in additional research on synthetic fuels. The Agency intends to publish guidance documents on oil shale processing, direct and indirect coal liquefaction and fluidized bed combustion for use by industry and permitting officials until appropriate standards are promulgated.

60-531 O - 80 - 25

Of the total increase, $1.6 million will be devoted to the development of dry sulfur dioxide control systems. This funding will be used to gather performance and economic data from commercial spray dryer sulfur dioxide control systems and to demonstrate the effectiveness of adipic acid as an additive to increase limestone flue gas desulfurization reliability. The request includes an increase of $1.2 million to fund a new program of exposure monitoring to correlate fixed station monitoring data and actual human exposure to energy-related pollutants.

These increases are offset by proposed reductions of $1 million in the nitrogen oxide control program which will eliminate funding for several demonstration projects, and $1.5 million in the environmental assessment program which reflects an Agency decision to eliminate some biological and chemical testing from environmental assessments, and to reduce air modelling work related to coal combustion and coal supply.

Management and Support

The total 1981 request of $223,518,000 for management and support includes an increase of $25,603,000.

A major portion of the increase, $10.3 million, is requested to strengthen the Agency's information management with support services for a major ADP procurement under A-109 to meet the Agency's systems needs over the next ten years. In addition, an increase of $6.4 million in support services is requested for the increased costs of utilities, rent, and government purchased goods and services. An increase of $2.7 million is proposed for buildings and facilities to cover the costs of safety repairs and pollution controls to federally owned installations. In FY 1981, work will start on 37 separate projects at 18 locations.

The request includes an increase of $588,900 for management activities in the Agency's regional offices, reflecting a greater emphasis, on analytic capabilities to plan integrated environmental programs, to prepare and review economic and energy analyses, and to coordinate regional involvement in agency regulatory and management reform.

An increase of $3,839,000 is proposed for headquarters analytic activities for benefits analyses of EPA regulations, for alternative fuels promotion, and to help regional offices accelerate their processes for the awarding of permits to energy facilities.

X

Summary of Budget Authority,
Obligations, Outlays and Permanent Workyears
By Appropriation
(dollars in thousands)

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981
Research and Development				
Budget Authority	$221,403	$239,568	$234,574	$264,984
Obligations	231,621	239,468	234,743	263,000
Outlays	225,201	224,627	233,600	255,000
Permanent Workyears	...	...	...	...
Full-time Equivalency	...	...	...	...
Abatement, Control and Compliance				
Budget Authority	524,481	540,688	525,957	555,338
Obligations	542,909	552,438	559,680	542,931
Outlays	382,882	419,477	397,164	406,740
Permanent Workyears	...	...	...	...
Full-time Equivalency	42	72	72	72
Salaries and Expenses				
Budget Authority	452,989	520,319	521,513	562,542
Obligations	459,485	520,319	521,513	562,542
Outlays	425,416	496,576	442,275	529,000
Permanent Workyears	10,087	10,943	10,940	11,162
Full-time Equivalency	11,964	13,437	13,416	13,659
Buildings and Facilities				
Budget Authority	1,172	1,425	1,425	4,115
Obligations	1,880	1,425	1,794	3,000
Outlays	2,367	2,000	2,000	2,500
Construction Grants				
Budget Authority	4,200,000	3,800,000	3,400,000	3,700,000
Obligations	4,256,558	3,600,000	4,800,000	4,500,000
Outlays	3,756,079	3,600,000	3,900,000	3,950,000
Scientific Activities Overseas				
Budget Authority	2,500	4,000	...	1,000
Obligations	2,719	4,000	3,204	1,200
Outlays	2,260	3,600	1,800	3,000
Operations, Research and Facilities				
Obligations	3,742	...	1,414	800
Outlays	6,156	5,000	5,000	3,200
Permanent Workyears	...	...	...	...
Full-time Equivalency	...	...	...	...
Revolving Fund				
Obligations	580	580	580	580
Outlays	39	...	40	50
Permanent Workyears	...	...	...	...
Full-time Equivalency	...	...	...	...

Summary of Budget Authority,
Obligations, Outlays and Permanent Workyears
By Appropriation
(dollars in thousands)

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981
Regulatory Council				
Budget Authority	...	3,238	3,082	3,338
Obligations	...	3,238	3,082	3,338
Outlays	...	2,600	2,400	2,800
Permanent Workyears	...	10	11	11
Full-time Equivalency	...	16	26	25
Trust Funds				
Budget Authority	...	...	...	...
Obligations	21	30	25	25
Outlays	36	80	20	20
Reimbursements				
Obligations	...	...	...	...
Permanent Workyears	91	62	64	64
Full-time Equivalency	101	62	73	73
Consolidated Working Fund				
Obligations	...	...	...	...
Outlays	...	...	10	10
Oil and Hazardous Liability Fund				
Budget Authority	...	...	...	250,000
Obligations	...	...	...	250,000
Outlays	...	...	...	45,000
Total, Environmental Protection Agency				
Budget Authority	5,402,545	5,109,238	4,686,551	5,341,317
Obligations	5,499,515	4,021,498	6,126,035	6,127,416
Outlays	4,800,436	4,753,960	4,984,309	5,197,320
Permanent Workyears	10,178	11,015	11,015	11,237
Full-time Equivalency	12,107	13,587	13,587	13,830

* Reflected for comparative purposes; 1979 appropriation structure differs in President's Appendix.

Summary of Budget Authority
Obligations, Outlays and Permanent Workyears
By Media
(dollars in thousands)

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981
Air				
Budget authority	$268,272	$255,810	$250,490	$248,470
Obligations	243,362	280,809	290,095	248,470
Outlays	228,855	232,100	209,600	211,500
Permanent Workyears	1,844	1,968	1,974	1,888
Full-time equivalency	2,154	2,347	2,360	2,246
Water Quality				
Budget authority	332,280	331,451	337,435	335,088
Obligations	387,170	335,961	325,850	328,084
Outlays	283,462	284,800	282,400	285,300
Permanent Workyears	3,101	3,173	3,088	3,032
Full-time equivalency	3,592	3,790	3,747	3,676
Drinking Water				
Budget authority	70,307	82,319	76,725	86,905
Obligations	67,687	82,051	79,054	85,830
Outlays	59,977	66,450	64,200	74,000
Permanent Workyears	440	505	518	537
Full-time equivalency	527	599	610	637
Solid Waste				
Budget authority	73,878	92,289	100,060	147,448
Obligations	62,520	70,792	103,882	145,000
Outlays	63,024	57,600	83,700	125,500
Permanent Workyears	272	396	404	774
Full-time equivalency	339	483	496	978
Pesticides				
Budget authority	68,234	62,250	68,156	74,000
Obligations	70,239	64,469	67,255	73,156
Outlays	58,210	58,600	57,000	63,000
Permanent Workyears	936	979	985	914
Full-time equivalency	1,044	1,116	1,128	1,034
Radiation				
Budget authority	10,068	17,201	17,262	17,782
Obligations	9,456	16,330	17,780	17,562
Outlays	8,589	13,000	14,400	15,100
Permanent Workyears	201	210	216	216
Full-time equivalency	216	253	252	248
Noise				
Budget authority	10,893	12,953	13,075	12,927
Obligations	10,768	12,913	13,283	12,767
Outlays	9,293	10,320	10,900	11,000
Permanent Workyears	90	103	105	99
Full-time equivalency	129	178	175	153

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981
Interdisciplinary				
Budget authority	23,591	53,102	26,341	27,240
Obligations	25,244	53,006	26,601	27,241
Outlays	20,124	44,200	22,000	23,200
Permanent Workyears	219	266	260	250
Full-time equivalency	280	383	365	353
Toxic Substances				
Budget authority	55,420	103,316	94,646	106,002
Obligations	61,531	105,951	93,398	104,691
Outlays	47,278	70,400	79,200	90,200
Permanent Workyears	377	649	659	744
Full-time equivalency	474	767	764	853
Energy				
Budget authority	112,829	102,461	101,364	107,598
Obligations	112,588	102,537	101,423	106,268
Outlays	107,000	125,000	104,000	105,000
Permanent Workyears	167	137	154	149
Full-time equivalency	271	265	259	250
Management and Support				
Budget authority	173,101	187,423	196,490	219,404
Obligations	183,450	187,406	197,315	219,404
Outlays	147,687	178,210	145,639	186,940
Permanent Workyears	2,440	2,557	2,577	2,559
Full-time equivalency	2,980	3,328	3,332	3,303
Facilities				
Budget authority	1,172	1,425	1,425	4,115
Obligations	1,880	1,425	1,794	3,000
Outlays	2,367	2,000	2,000	2,500
Operations, Research and Facilities				
Obligations	3,742	...	1,414	800
Outlays	6,156	5,000	5,000	3,200
Permanent Workyears	...	...	...	...
Full-time equivalency	...	...	...	...
Construction Grants				
Budget authority	4,200,000	3,800,000	3,400,000	3,700,000
Obligations	4,256,558	3,600,000	4,800,000	4,500,000
Outlays	3,756,079	3,600,000	3,900,000	3,950,000
Scientific Activities Overseas				
Budget authority	2,500	4,000	...	1,000
Obligations	2,719	4,000	3,204	1,200
Outlays	2,260	3,600	1,800	3,000
Revolving Fund				
Obligations	580	580	580	580
Outlays	39	...	40	50

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981
Trust Funds				
Obligations	21	30	25	25
Outlays	36	80	20	20
Reimbursements				
Obligations	...	...	...	...
Permanent Workyears	91	62	64	64
Full-time equivalency	101	62	73	73
Regulatory Council				
Budget authority	...	3,238	3,082	3,338
Obligations	...	3,238	3,082	3,338
Outlays	...	2,600	2,400	2,800
Permanent Workyears	...	10	11	11
Full-time equivalency	...	16	26	26
Consolidated Working Fund				
Obligations	...	...	...	...
Outlays	...	...	10	10
Oil and Hazardous Liability Fund				
Budget authority	...	...	...	250,000
Obligations	...	...	...	250,000
Outlays	...	....	...	45,000
Total, Environmental Protection Agency				
Budget authority	5,402,545	5,109,238	4,686,551	5,341,317
Obligations	5,499,515	4,921,498	6,126,035	6,127,416
Outlays	4,800,436	4,753,960	4,984,309	5,197,320
Permanent Workyears	10,178	11,015	11,015	11,237
Full-time equivalency	12,107	13,587	13,587	13,830

Summary of Increase or Decrease
Budget Authority and Permanent Workyears
(dollars in thousands)

	Current Estimate 1980	Estimate 1981	Increase + Decrease -
Research and Development			
Budget authority	$234,574	$264,984	+$30,410
Permanent workyears	...	...	...
Full-time equivalency	...	...	...
Abatement, Control and Compliance			
Budget authority	525,957	555,338	+29,381
Permanent workyears	...	...	...
Full-time equivalency	72	72	...
Salaries and Expenses			
Budget authority	521,513	562,542	+41,029
Permanent workyears	10,940	11,162	+222
Full-time equivalency	13,416	13,660	+244
Buildings and Facilities			
Budget authority	1,425	4,115	+2,690
Scientific Activities Overseas			
Budget authority	...	1,000	+1,000
Reimbursements			
Permanent workyears	64	64	...
Full-time equivalency	73	72	-1
U.S. Regulatory Council			
Budget authority	3,082	3,338	+256
Permanent workyears	11	11	...
Full-time equivalency	26	26	...
Subtotal			
Budget authority	1,286,551	1,391,317	+104,766
Permanent workyears	11,015	11,237	+222
Full-time equivalency	13,587	13,830	+243
Construction Grants			
Budget authority	3,400,000	3,700,000	+300,000
Oil and Hazardous Liability Fund			
Budget authority	...	250,000	+250,000
Total, Environmental Protection Agency			
Budget authority	4,686,551	5,341,317	+654,766
Permanent workyears	11,015	11,237	+222
Full-time equivalency	13,587	13,830	+243

Liquidation of Contract Authority
(in thousands of dollars)

	1979	1980	1981
Construction Grants.....	$1,400,000	$1,500,000	$1,700,000

AIR

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Appropriation						
Salaries and Expenses..	$64,996	$72,417	$77,186	$75,816	-$1,370	
Research and Development.....	33,506	46,270	39,529	44,109	+4,580	
Abatement, Control and Compliance.....	144,860	137,123	133,775	128,545	+5,230	
Total.....	243,362	255,810	250,490	248,470	-2,020	
Permanent Workyears....	1,844	1,968	1,974	1,888	-86	
Full-time Equivalency..	2,154	2,347	2,360	2,246	-114	
Outlays.....	228,855	232,100	209,600	211,500	+1,900	
Authorization Levels...	351,197	236,500	236,500	200,000		
Program Highlights						
Health and Ecological Effects:						A-15
Salaries and Expenses.....	9,926	14,521	16,755	15,490	-1,265	
Research and Development.....	19,737	32,103	25,388	29,753	+4,365	
Industrial Processes:						A-31
Salaries and Expenses.....	1,128	1,150	1,133	1,069	-64	
Research and Development.....	2,860	2,900	2,934	3,030	+96	
Monitoring and Technical Support:						A-36
Salaries and Expenses.....	7,443	10,022	9,403	9,501	+98	
Research and Development.....	10,910	11,267	11,207	11,324	+117	
Total, Research and Development Program:						
Salaries and Expenses.....	18,497	25.693	27,693	27,291	-1,231	
Research and Development.....	33,507	46,270	39,529	44,107	+4,578	
Total.....	52,004	71,963	66,820	70,167	+3,347	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Air Quality and Stationary Source Planning and Standards:						A-46
Salaries and Expenses.....	$7,986	$6,675	$8,726	$8,698	-$28	
Abatement, Control and Compliance.....	14,920	30,800	28,666	20,218	-8,448	
Mobile Source Standards and Guidelines:						A-54
Salaries and Expenses.....	6,173	8,880	6,924	6,820	-104	
Abatement, Control and Compliance.....	8,678	2,280	4,480	4,578	+98	
State Programs Resource Assistance:						A-61
Salaries and Expenses.....	315	350	399	419	+20	
Abatement, Control and Compliance.....	105,110	86,311	83,948	88,334	+4,386	
Air Quality Strategies Implementation:						A-67
Salaries and Expenses.....	8,564	8,710	9,066	8,655	-411	
Abatement, Control and Compliance.....	333	...	253	221	-32	
Mobile Source Preproduction Compliance Verfication:						A-70
Salaries and Expenses.....	4,110	2,430	2,950	3,662	+712	
Abatement, Control and Compliance.....	2,183	1,300	922	922	...	
Trends Monitoring and Progress Assessment:						A-74
Salaries and Expenses.....	3,858	3,589	4,122	3,883	-239	
Abatement, Control and Compliance.....	769	641	382	610	+228	
Total, Abatement and Control Program:						
Salaries and Expenses.....	31,006	30,634	32,187	32,137	-50	
Abatement, Control and Compliance.....	131,993	121,332	118,651	114,883	-3,768	
Total.....	162,999	151,966	150,838	147,020	-3,818	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Stationary Source Enforcement:						A-79
Salaries and Expenses	$11,982	$12,595	$13,776	$13,736	-$40	
Abatement, Control and Compliance	10,535	12,435	12,181	10,697	-1,484	
Mobile Source Enforcement:						A-84
Salaries and Expenses	3,510	3,496	3,931	3,883	-48	
Abatement, Control and Compliance	2,332	3,355	2,943	2,967	+24	
Total, Enforcement Program:						
Salaries and Expenses	15,492	16,091	17,707	17,619	-88	
Abatement, Control and Compliance	12,867	15,790	15,124	13,664	-1,460	
Total	28,359	31,881	32,831	31,283	-1,548	
Permanent Positions						
Health and Ecological Effects	220	262	252	235	-17	A-15
Industrial Processes	22	18	18	18	...	A-31
Monitoring and Technical Support	149	160	161	155	-6	A-36
Total, Research and Development Program	391	440	431	408	-23	
Air Quality and Stationary Source Planning and Standards	243	252	255	244	-11	A-46
Mobile Source Standards and Guidelines	166	162	166	152	-14	A-54
State Programs Resource Assistance	5	6	6	6	...	A-61
Air Quality Strategies Implementation	314	324	317	288	-29	A-67
Mobile Source Pre-production Compliance Verification	57	71	72	84	+12	A-70
Trends Monitoring and Progress Assessment	115	128	122	116	-6	A-74
Total, Abatement and Control Program	900	943	938	890	-48	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Decreases - Increases + 1981 vs. 1980	Page
			(dollars in thousands)			
Stationary Source Enforcement	406	502	479	471	-8	A-79
Mobile Source Enforcement	117	138	126	118	-8	A-84
Total, Enforcement Program	523	640	605	589	-16	
Full-time Equivalency						
Health and Ecological Effects	280	319	322	300	-22	A-15
Industrial Processes	40	31	31	31	...	A-31
Monitoring and Technical Support	171	186	186	179	-7	A-36
Total, Research and Development Program	491	536	539	510	-29	
Air Quality and Stationary Source Planning and Standards	277	280	279	266	-13	A-46
Mobile Source Standards and Guidelines	190	201	213	190	-23	A-54
State Programs Resource Assistance	43	72	73	73	...	A-61
Air Quality Management Implementation	340	357	344	313	-31	A-67
Mobile Source Pre-production Compliance Verification	94	87	102	107	+5	A-70
Trends Monitoring and Progress Assessment	137	139	132	128	-4	A-74
Total, Abatement and Control Program	1,081	1,136	1,143	1,077	-66	
Stationary Source Enforcement	439	517	522	507	-15	A-79
Mobile Source Enforcement	143	158	157	152	-5	A-84
Total, Enforcement Program	582	575	679	659	-20	

OVERVIEW AND STRATEGY

The Clean Air Act authorizes a national program of air pollution research, regulation, and enforcement activities. Under the Act, primary responsibility for the prevention and control of air pollution at its source rests with State and local government, with a strong mandate that the Environmental Protection Agency (EPA) take action where States do not fulfill their responsibilties. EPA's role is to conduct research and development programs, ensure that adequate standards and regulations are established to meet environmental goals set by the Act, support State and local control activities, and ensure that the standards and regulations are effectively enforced.

The environmental goals are generally those prescribed by National Ambient Air Quality Standards (NAAQS). Two types of standards are set: primary standards to protect human health and secondard standards to protect the public welfare (prevention of damage to property, animals, vegetation, crops, visibility, etc.). The health and other effects of pollutants are delineated in criteria documents which are the basis for the standards. National Ambient Air Quality Standards (NAAQS) have been set for total suspended particulat sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, hydrocarbons, and lead.

Controlling emissions to meet NAAQS is handled through two major types of activities: (1) State Implementation Plans (SIP) which control pollution within each State primarily by prescribing specific emission limitations or control actions for types of polluters, and (2) national emission standards prescribed for new motor vehicles and selected new stationary sources.

In addition to the NAAQS discussed above, nationally applicable emission levels are prescribed for other pollutants deemed especially hazardous, and apply to both new and existing pollutant sources. National Emission Standards for Hazardous Air Pollutants (NESHAPS) have been established for asbestos, beryllium, mercury and vinyl chloride from a variety of sources. Benzene and radionuclides have been listed as hazardous air pollutants and emission control regulations are under development. Activities and resources for radionuclides are covered under the radiation portion of the Agency's budget.

Air program activities have been directed primarily at the attainment of the primary NAAQS. Although the combined Federal-State-local effort at controlling air pollution has achieved a notable degree of success in improving ambient air quality across the Nation, the standards have not been attained in many areas. The Clean Air Act, as amended in 1977, recognizes this problem and sets forth a comprehensive program for achieving the standards for such areas.

In general, the Act requires that the standards be attained by the end of calendar year 1982. However, in recognition of the unusual problems some areas will have in attaining the standards for ozone and carbon monoxide, attainment of these standards is to be as expeditious as possible, but in no case later than 1987. Such areas are to submit additional plans in 1982. Under the terms of the Act, failure to submit adequate SIP's to attain the NAAQS by 1982 or 1987 can result in the prohibitions on construction of new or modified major sources and the withholding of certain Federal funds.

The 1977 Amendments require New Source Performance Standards (NSPS) for all major stationary sources to be set on a specified schedule, more stringent emission standards to be set for new motor vehicles and engines, and assessments to be carried out related to other standard setting. In addition, a statutory basis is established for prevention of significant deterioration (PSD) which is, in effect, a mechanism for managing the air quality impacts associated with economic development.

While the States generally have been responsive in developing revised SIP's for the attainment of NAAQS, a number of the SIP's could only be approved provisionally during 1979. In FY 1980 follow-up actions to remedy deficiencies in the 1979 SIP submission are being completed and acted on by EPA. In some States these actions will continue into 1981. Also, in most States the 1979 SIP contained schedules for developing mandatory inspection and maintenance (I/M) programs, (to assure the continued effectivenes of controls on motor vehicles), conducting transportation control planning processes, enacting additional volatile organic compound (VOC) regulations and making special analyses of control problems associated with fugitive dust. EPA is tracking the progress of States in meeting these schedules and providing necessary guidance, particularly with respect to I/M and transportation planning.

In 1980 and 1981, considerable effort will be devoted to developing the data base required for the 1982 SIP submissions for areas having justifiable reasons for extending the attainment dates for carbon monoxide and ozone to the 1983-1987 time period. The data base required for these submissions includes detailed emission, air quality and meteorology information beyond that normally needed for demonstrating attainment of air quality standards.

EPA promulgated regulations in May 1979, establishing requirements for ambient air monitoring stations, networks, and quality assurance procedures. These regulations will be implemented in both 1980 and 1981 and involve new instrumentation, station siting, and establishment of quality assurance programs by the States. These actions are necessary to improve the degree of confidence of the public, industry, and regulatory agencies in air quality data.

The review of all NAAQS required by the Clean Air Act is continuing in 1980 and may result in new or altered standards being proposed in 1980 or 1981 for oxides of nitrogen, carbon monoxide, sulfur dioxide, and suspended particulates. The promulgation of revised standards will require additional State efforts to revise SIP's in 1981. The development of such revisions will require obtaining additional air quality and emission data in 1980 and 1981.

By the end of 1980, the Agency expects that all required States will have EPA-approved State Implementation Plans for prevention of significant deterioration (PSD), and will assume new source review (NSR) for proposed facilities subject to these requirements. In 1981, EPA will limit its review of PSD permit applications and assume overview responsibilities by providing specific expertise and interpretation of Agency policy and guidance in technical areas. In addition, the overview function will give particular attention to assuring consistency between adjoining States and mediating issues relative to interstate impact of growth.

During both 1980 and 1981, the promulgation of NSPS will be greatly increased, consistent with the Clean Air Act requirements. These new emission limits, in addition to limiting emissions from new sources to levels achieved by best available adequately demonstrated technology, will provide a basis for determining required case-by-case level of control for sources subject to PSD.

The Agency is in the process of adopting an Air Carcinogen Policy. Health assessments will be made of many additional chemicals and appropriate regulatory actions taken under the guidance of this policy. Additional NESHAPS are to be promulgated in 1980 and 1981.

With respect to mobile sources of air pollution, work is continuing in 1980 for the proposal and promulgation in 1981 of additional emission standards for both diesel and gasoline powered heavy and light duty trucks as made mandatory by the 1977 amendments to the Act. Continuing attention will be given in 1981 to the assessment of potential health hazards and to the development of requisite standards for currently unregulated pollutants from mobile sources.

The Agency is also concerned about motor vehicles that are currently on the road. EPA expects 29 States to have legislation for inspection and maintenance (I/M) programs in 1980. In 1980 and 1981, the mobile source program will be providing technical information to support the development of adequate and effective programs under such legislation. The Agency's fuel economy activities will expand in 1981 in support of DOT's regulations and the provision of public information on vehicle fuel economy. Studies will continue in 1980 and 1981 on methods to close the gap between test data and actual in-use experience.

A major Federal role in meeting ambient air quality standards is expected to continue. Failures by the States in some cases to develop the requisite regulatory framework for air pollution control will continue to necessitate Federal action to fill the gaps in otherwise adequate State control programs. Likewise, the extension of air pollution control to a large number of sources not presently covered, or covered inadequately, will intensify the need for enforcement action. EPA will supplement State/local resources to facilitate State assumption of enforcement responsibilities but, where necessary, it will continue to undertake Federal enforcement action.

Where Federal enforcement is required, it is the purpose of the stationary source enforcement program to ensure that stationary air sources are in compliance with emission limitations under SIPs; that new stationary air sources are constructed in accordance with NSR, NSPS, and PSD provisions; that stationary air sources subject to NESHAPS meet hazardous air pollutant standards; and that all applicable provisions of the Power Plant and Industrial Fuel Use Act of 1978 are implemented.

The stationary source enforcement program is continuing its part of the major source enforcement effort (MSEE) by developing and concluding cases, through settlement or litigation against large recalcitrant violators and ensuring compliance by closely tracking their compliance schedules or consent decrees. The noncompliance penalty regulation under Section 120 of the Clean Air Act, a new and powerful program for obtaining expeditious compliance, will be promulgated in early 1980. Further, there will be a continuing commitment to a strong compliance monitoring program. Particular attention will be given to examining the field surveillance and compliance monitoring programs being implemented by the States to ensure that violations are being fully documented.

The mobile source enforcement program will emphasize programs designed to reduce tampering and fuel switching violations in order to reduce in-use emissions from mobile sources. This program will focus primarily on areas of the country with such significant mobile source air pollution problems that inspection/maintenance programs will be necessary to meet air quality standards. A special effort will be directed at preventing a widespread increase in fuel switching caused by a shortfall in unleaded gasoline and will be accompanied by monitoring of the petroleum industry to detect the locations and severity of such shortages. The selective enforcement auditing assembly line testing program, recall and surveillance activity in support of recall, and warranty enforcement will continue.

Many of the objectives of the 1980 air research program will carry over into 1981. The overall program will continue to define the adverse health and environmental effects of airborne pollutants, describe the way in which these pollutants are transported and transformed in the atmosphere, and develop and evaluate pollution control technologies.

The 1981 air research program is the first such program to be developed in conjuction with EPA's new Research Committee planning system, which has resulted in much better coordination between the research and regulatory program than previously listed. The air research program is divided into four components, each of which is reviewed by a Research Committee. The four areas are mobile source pollutants, oxidants, hazardous air pollutants, and gaseous and innalable particulate pollutants.

Field studies in urban areas to identify hazardous pollutants present in ambient air will be initiated. This information will be used to help develop hazardous pollutant regulatory strategies under Section 112 of the Clean Air Act and to determine compounds to be screened for carcinogenicity and other harmful effects.

The health effects research program, will continue to focus on research to more accurately determine actual human exposures to air pollutants and to better define the effects of these pollutants on real world populations. For example, epidemiological studies in areas identified in 1980 as good candidates for assessing the effects of exposure to particulate pollutants will be initiated. These studies will provide the Agency with essential information for setting and revising ambient air quality standards for particulate matter.

In the mobile sources area, examination of health effects of pollutants emitted by diesel engines will continue to receive primary emphasis. As more diesel emission health effects data become available from projects started in 1979 and 1980, the research will be refined and focused on developing tests that can identify specific components of diesel exhaust that require emissions control. This type of testing will also be used to assess innovations in engine design and particulate control technologies.

Field and laboratory studies will be conducted to determine the role of nitrogen oxides and hydrocarbons in producing oxidant pollution. The research will focus on the long-range (multi-state) transport and transformation processes of oxidants and their precursors and will determine the contributions of natural sources of pollutants to both urban and rural ozone problems.

Other major activities will include expansion of the network of inhalable particle samplers to improve our knowledge of the ambient concentrations of these particles and maintenance of the National Crop Loss Assessment Network to estimate current losses due to ambient pollutant concentrations and losses due to incremental changes in concentration of specific pollutants. Finally, development of major models for field studies will be undertaken to improve our understanding of the dispersion patterns of pollutants through complex terrain, transport of oxidants in the northeast, and the extent and causes of visibility degradation in both urban and non-urban areas.

Purpose of Research and Development Program

The air research and development program is designed to furnish EPA with the knowledge to establish prudent environmental controls standards and regulations based upon known or potentially adverse health and ecological effects; to define, develop, and demonstrate systems for controlling stationary source pollution; and to evaluate strategies for minimizing the emission of pollutants. To achieve these ends, the program

60-531 O - 80 - 26

is structured to identify and, to the extent possible, quantify the adverse human health effects of exposure to air pollutants; to quantify the effects and fate of air pollutants on biological systems and processes within the environment; to develop predictive models for pollutant emission, transport, transformation, and removal, and verify these models by actual measurements; and to develop new and improved technology for preventing and controlling air pollution and demonstrate the cost effectiveness of such technologies. The air research and development program also provides analytical measurement methods for monitoring air pollutants; procedures and materials to assure the quality of monitoring data; technical expertise, and specialized facilities and equipment to the regulatory and enforcement programs.

Purpose of Abatement and Control Program

The Salaries and Expenses and Abatement, Control and Compliance appropriations encompass the development and implementation of air pollution control strategies and programs. Specific activities include regulations development, technical and policy guidance, financial support to State and local programs and direct Federal action when States fail to fulfill their Clean Air responsibilities. The intent of the Act is that States assume responsibility for most aspects of air pollution control, and that EPA provide guidance and assistance. Our total environmental effort is conceived as a working partnership with State and local governments to achieve national environmental goals.

The primary goal of the air program is the implementation of National Ambient Air Quality Standards (NAAQS) attainment and maintenance strategies. The first priority for States and EPA in 1980 and 1981 is the completion of strategy development actions and the adoption by the States of revisions to the State Implementation Plans (SIPs) for areas not presently attaining ambient air quality standards. This includes expeditious follow-up on conditionally approved SIPs and timely action on schedules for inspection and maintenance (I/M), and transportation control measures (TCM); adoption of new regulations covering volatile organic chemcials (VOC); control of non-traditional sources of suspended particulate matter; and development of improved data bases to facilitate the submission, where required, of new SIPs in 1982. In addition, EPA, in carrying out the mandates of the Clean Air Act, must complete the promulation of New Source Performance Standards for all major stationary sources of air pollution; effectively review all exisitng ambient air quality standards; regulate mobile sources of air pollution; develop a workable program of prevention of significant deterioration and implement the new visibility protection goals of the Clean Air Act.

The abatement, control and compliance activities are categorized under the following subactivities:

Air Quality and Stationary Source Planning and Standards - This subactivity includes: (1) the development, reassessment and revision of national control strategies for all air pollutants and development of appropriate regulations. Control strategies developed in this subactivity are translated into guidance for State action, through the State Implementation Plans, or directly into Federal control requirements, such as New Source Performance Standards (NSPS) or National Emission Standards for Hazaradous Air Pollutants (NESHAPS). Extensive activities are also carried out to provide the engineering and other technical support requisite for the development of regulations promulated by EPA when States do not act.

Mobile Source Standards and Guidelines - This subactivity involves the setting of emissions standards for mobile sources (including the associated testing, technical analyses and technology assessments), and the development of mobile source related technical procedures and guidelines applicable to the control of emissions from new and in-use vehicles. Under this subactivity, EPA responsibilities in determining fuel economy values for vehicles subject to the Environmental Protection and Energy Conservation Act (EPECA) are also carried out.

State Programs Resource Assistance - This subactivity involves the provision of resources to support State and local government implementation of air pollution control programs. The primary responsibility for controlling air pollution rests with the States and localities. Supplemental resources are required if these governments are to effectively implement air pollution control programs, thereby eliminating or reducing the need for direct Federal intervention. Support is also provided for training of control agency personnel. Supplementing State and local resources complements the purpose of the activities carried out under the other subactivities of the Abatement, Control and Compliance appropriation.

Air Quality Strategies Implementation - This subactivity includes implementation of regulatory requirements for which the Federal government has primary responsibility, such as: (1) overview of air pollution control activities carried out by Federal facilities; (2) review of environmental impact statements prepared by other Federal agencies for air pollution impact; and (3) implementation of air quality standards and control strategies in specific areas of the Nation. These activities result in the implementation of specific control strategies through State and local control programs. Examples of these activities are the development of State Implementation Plans (SIP) and EPA promulgation of regulations, all technical aspects of the development of the control strategies incorporated into the SIP, and the management of the procedural requirements, such as public hearings on plans.

Mobile Source Preproduction Compliance Verification - This subactivity involves the engineering review of prototype motor vehicles and engines in order to determine whether or not they conform with motor vehicle emissions standards developed under the mobile source standards and guidelines subactivity. It also includes confirmatory testing and other laboratory subactivity. It also includes confirmatory testing and other laboratory or data analysis related to the certification process and fuel economy determinations.

Trends Monitoring and Progress Assessment - This subactivity includes the determination of ambient air quality and emission levels and relationships, and assessment of progress made towards the attainment of environmental goals. These data and assessments are used for reassessing or developing control strategies, and for judging the progress made in achieving legislative or regulatory program goals. The determination of emission levels is an activity fundamental to the administration of programs at the State, local, and Federal levels for developing regulations, reviewing new sources, and making determinations as to their siting.

SUMMARY OF INCREASES AND DECREASES	(in thousands of dollars)
1980 Air Program	$250,490
Salaries and Expenses	-1,370
This decrease reflects the permanent workyear decrease of 114.	
Research and Development	+4,580
This increase in extramural support resulted from increases in research in the health effects of air pollutants from transportation sources (+$.4 million), funding of oxidant research in preparation for the 1983 oxidant criteria document (+$1.2 million), additional funding of the health effects of non-criteria air pollutants (+$2.6 million), and funding for research directed towards determining the background levels and the roles of natural sources on air pollution levels (+$.4 million).	
Abatement, Control and Compliance	-5,230
This net reduction in extramural support resulted from a phased decrease in resources for New Source Performance Standards (NSPS) development (-$8.9 million) as those standards near completion, in addition to a decrease in contractual support to the enforcement of stationary source requirements (-$1.5 million). These decreases were partially offset by an increase in grants to State and local air pollution control agencies (+$4.9 million) and contracts for regional ambient air monitoring (+$.2 million).	
1981 Air Program	248,470

SUMMARY OF BUDGET ESTIMATE

1. Summary of Budget Request

An appropriation of $248,469,600 is requested for 1981. This request by appropriation account, is as follows:

Salaries and Expenses	$75,816,300
Research and Development	44,108,500
Abatement, Control and Compliance	128,544,800

This represents a decrease of $2,020,000 from the 1980 level. Included in the net decrease is an increase of $4.9 million in financial assistance to State and local air pollution control agencies, $2.6 million for research on the health effects of non-criteria pollutants, $1.2 million for oxidant research in preparation for the 1983 oxidant criteria document, $.4 million for research into the health effects of pollutants emitted by transportation sources, $.4 million for research into background levels and the roles of natural sources on air pollution levels. The following decreases are also included: a phased decrease in resources of $8.9 million for NSPS development as those standards will be nearing completion, $1.5 million from the enforcement of stationary source requirements of the Clean Air Act, and $1.4 million of salaries and expenses reflecting cuts in personnel for the media.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$255,810
Congressional increases/decreases:	
Travel.....	-318
ADP.....	-63
Supplies and expenses.....	-234
Health and ecological effects.....	-4,000
Control agency grants.....	-2,800
Academic training.....	+480
Reprogramming for salary costs.....	-827
Proposed pay raise supplemental.....	+2,451
Miscellaneous reprogramming.....	-9
Current 1980 estimate.....	250,490

The Congress reduced Agency travel costs by $2 million, of which $318,000 is applicable to the air media. ADP costs were reduced by $1 million, resulting in a $63,000 decrease. Supplies and expenses were reduced by $2 million, of which $234,000 is in the air media. A reduction of $4 million was made to the health and ecological effects activity; $2.8 million was reduced from control agency support grants. Finally, academic training was increased by $1.5 million, of which $480,000 is applicable to the air media.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $827,000 to the air media.

A supplemental appropriation is proposed to partially fund costs of the October 1979 pay raise; $2,451,000 is for the air media. Miscellaneous reprogrammings to this media resulted in a net decrease of $9,000.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(In thousands of dollars)	
Prior year obligations	$243,362	$290,095
Effect of congressional changes	-4,035	...
Effect of pay raise supplemental	+2,451	...
Change in amount of carryover funds available	+21,681	-39,605
Program decreases	-4,808	-2,020
Effect of reprogrammings	-836	...
Change in rate of obligations	+32,280	...
Total estimated obligations	290,095	248,470
(From new obligation authority)	(248,904)	(246,884)
(From prior year funds)	(41,191)	(1,586)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The congressional changes discussed in the previous section are expected to result in a decrease of $4,035,000 to obligations. The proposed pay raise supplemental to partially fund the October 1979 pay raise will increase obligations by $2,451,000. The reprogrammings to fund authorized workyears will decrease obligations by $836,000.

The decrease in budget authority in 1980 and 1981 results in a reduction to obligations of $4,808,000 and $2,020,000, respectively.

The amount of carryover funds to be obligated in 1980 is $41,191,000, an increase of $21,681,000 over the 1979 level; in 1981, it is estimated that $1,586,000 of carryover funds will be obligated, a decrease of $39,605,000 from the 1980 level.

A change in the rate of obligation is expected in 1980, which will create an increase of $32,280,000 over the 1979 level.

PROGRAM LEVELS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Number of pollutants covered by hazardous pollutants standards...	4	10	4	4	-10
Number of automobile engine families awarded certificates for conformity with emission standards.....	240	700	250	250	...
Number of source categories covered by New Source Performance Standards.....	29	40	36	53	+17
Number of emission tests carried out for motor vehicle certification purposes.....	899	1,000	950	950	...
Number of fuel economy tests carried out.....	925	800	1,800	1,800	...
Identified Class A source in U.S.....	24,040	29,000	25,000	29,000	+4,000
Assembly line testing test orders.....	37	42	35	33	-2
Combined fuels/vapor recovery inspections....	16,000	25,000	23,000	25,000	+2,000
Recall investigations.....	24	40	27	19	-8
Number of civil/criminal actions initiated by EPA	148	350	215	210	-5
Number of administrative orders initiated by EPA	213	160	155	220	+65
Number of compliance monitoring inspections conducted by EPA.....	2,769	2,800	3,350	3,300	-50

AIR

Health and Ecological Effects

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Health Effects/ Transportation Sources:					
Salaries and Expenses.	$2,508	$2,434	$3,272	$3,179	-$93
Research and Development.....	3,148	4,809	3,080	3,438	+358
Health Effects/Criteria Pollutants:					
Salaries and Expenses.	1,049	2,110	2,439	2,366	-73
Research and Development.....	687	4,690	3,267	4,499	+1,232
Health Effects/Non-Criteria Pollutants:					
Salaries and Expenses.	3,416	6,825	7,780	6,500	-1,280
Research and Development.....	6,645	10,480	7,298	9,860	+2,562
Ecological Effects:					
Salaries and Expenses.	872	563	898	975	+77
Research and Development.....	681	1,703	1,491	1,320	-171
Transport and Fate of Pollutants:					
Salaries and Expenses.	2,081	2,589	2,366	2,470	+104
Research and Development.....	8,576	10,421	10,252	10,636	+384
Total:					
Salaries and Expenses.	9,926	14,521	16,755	15,490	-1,265
Research and Development.....	19,737	32,103	25,388	29,753	+4,365
Grand Total.....	29,663	46,624	42,143	45,243	+3,100

Permanent Positions					
Health Effects/ Transportation Sources.	51	46	44	39	-5
Health Effects/Criteria Pollutants.....	21	31	28	28	...
Health Effects/Non-Criteria Pollutants....	90	136	127	115	-12
Ecological Effects.....	21	5	11	11	...
Transport and Fate of Pollutants.....	37	44	42	42	...
Total.....	220	262	252	235	-17
Full-Time Equivalency					
Health Effects/ Transportation Sources.	71	52	64	58	-6
Health Effects/Criteria Pollutants.....	26	40	34	34	...
Health Effects/Non-Criteria Pollutants....	112	158	147	131	-16
Ecological Effects.....	30	10	29	29	...
Transport and Fate.....	42	59	48	48	...
Total.....	281	319	322	300	-22

Budget Request

The Agency requests $45,243,300 and 235 permanent workyears for this program, of which $15,489,900 is for the Salaries and Expenses appropriation and $29,753,400 is for extramural activities under the Research and Development appropriation. There is a decrease of $1,265,700 and a increase of $4,365,900, respectively. In total, there is a net increase of $3,100,200 and decrease of 17 permanent workyears. The decrease in workyears is divided between two programs: 5 positions from the transportation sources activity and 12 positions from the non-criteria program. The dollar increases are: $1,282,200 for inhalation toxicology efforts to investigate adverse effects in animals from exposure to particulate and hazardous air pollutants and then relate these findings to human health effects; $1,159,200 to strengthen clinical studies dealing with the health effects induced by exposure to oxidants for use in our criteria documents on ozone and other photochemical oxidants; $265,000 to evaluate the carcinogenic potency of diesel engine exhaust compared to other known carcinogenic substances; and $393,800 to expedite our research efforts on photochemical oxidant transport and fate processes.

Program Description

Research on the adverse health effects of exposure to air pollutants provides a major portion of the scientific basis upon which ambient air quality standards are established, maintained, or revised as required by the Clean Air Act, as amended in 1977. If regulations set for air pollutants are too lax, the health of the public may be adversely affected; alternatively, if they are too stringent, the economy may be adversely affected by unnecessary costs for pollution control equipment.

The air health effects research program is divided into three program components addressing criteria pollutants, non-criteria pollutants, and transportation sources. The program uses epidemiological studies of specific populations, controlled human exposure (clinical) studies, and animal toxicological studies, focusing on those air pollutants which adversely affect public health or which are suspected to do so.

Investigations include (1) studies of effects from short-term and long-term exposures to combinations of criteria pollutants (in order to better define the health data base for these pollutants, and, therefore, to better determine the adequacy of existing pollutant standards); (2) studies of effects from exposure to sulfates, nitrates, metal oxides, and other inhalable particulate pollutants; and (3) studies of effects from exposure to mobile source fuels and exhaust products in order to determine which of these agents pose a potential threat to public health.

Research on the ecological effects of air pollutants provides the fundamental scientific basis upon which to establish and continually evaluate secondary ambient air quality standards. This program focuses upon the effects of air pollutants on the structure and functions of ecosystems by determining the acute and chronic effects of air pollutants, singly and combined, upon individual flora, fauna and soil system components and on entire ecosystems. Pollutants under study include sulfur dioxide, ozone, nitrogen oxides, hydrocarbons, and selected non-criteria pollutants of importance. The program also attempts to characterize air pollution problems in the environment, to determine the dynamic processes and effects of these pollutants and to provide methods and techniques to measure or monitor these effects. Laboratory, greenhouse, and field verification studies will clarify both the biological perturbations and the fate of these pollutants.

Specifically this program focuses on the collection of dose/response data, bioaccumulation potentials in agriculture crops and in other vegetation, and productivity, growth quality and yield reductions in commercially important crops. Research is directed toward determining the impacts of gaseous mixtures and pollution stress on populations, succession, species survival and the interactions of exposure with environmental variables such as temperature and precipitation.

HEALTH EFFECTS - TRANSPORTATION SOURCES

1979 Accomplishments

In 1979, the Agency utilized a total of $5,656,000 for this program, of which $2,508,100 was for salaries and expenses and $3,147,900 was for extramural research activities. In 1979, the program:

- Completed the first phase of a study of the comparative responses of a group of bioassay test systems to a series of surrogates (i.e., organic pollutants considered as having chemical characteristics similar in nature to those in diesel exhaust) and diesel exhausts from different vehicles.

- Completed a dose ranging study for diesel particulates (bound and unbound) using intratracheal instillation method. The results determined the maximum tolerated dose that could be utilized for the full scale intratracheal instillation study of the risk of cancer induction.

- Completed dose ranging study of neurobehavioral effects associated with inhalation of diesel exhaust. The results ascertained the appropriate exposure levels to be utilized to review the dose-response relationship.

- Demonstrated that the level of mutagenic activity of diesel exhaust, as measured in an isolated bioassay test system, is influenced by the presence of ozone.

- Characterized the emissions of six advanced technology vehicles.

1980 Program

The Agency has allocated a total of $6,352,300 to this program of which $3,272,300 is for the Salaries and Expenses appropriation and $3,080,000 is for extramural purposes under the Research and Development appropriation.

The program continues to emphasize the development of the comparative response of a matrix of bioassay test systems to a series of surrogates and diesel exhausts from different vehicles. The results are considered necessary for the quantitative assessment of the potential risk of cancer from the agents emitted from diesel vehicles. Diesel emissions are the primary target of this research. Biological endpoints such as pulmonary dysfunction, neurobehavioral changes, reproductive effects and immune defense dysfunction are addressed but were not emphasized as much as the evaluation of carcinogenesis using whole animal and short term bioassays. Epidemiological research pertaining to diesel exhaust will also focus on cancer induction.

Emphasis of the public health initiative component of the program is on conducting epidemiological studies of populations exposed to diesel exhausts, developing and applying a variety of in vitro screening tests, and expanding in vivo studies relating to carcinogenicity.

Specific tasks include the following:

- Continuation of the study on induction of respiratory carcinogenesis in male Syrian golden hamsters using intratracheal instillation of pollutant extracts.

- Continuation of the evaluation of diesel emissions and comparative samples for carcinogenesis using dermal exposure of the SENCAR (SENsitive to CARcinoma) mouse.

- Continuation of the evaluation of the rate of induction of pulmonary tumor inherent in strain-A mice by inhalation of diesel exhausts.

- Continuation of the development and application of a short-term in vitro carcinogenesis assay (liver islands assay) which will have higher sensitivity and be less expensive than a lifetime in vitro assay.

1980 Explanation of Change from Budget Estimates

The net decrease of $890,700 results from several actions. An increase of $70,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,600. The Congress also reduced the health and ecological effects activities by $4 million which resulted in a decrease of $920,000 to this activity. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $39,300 to this activity.

1981 Plan

The Agency requests a total of $6,617,300 and 39 permanent workyears for this program, of which $3,179,000 is for Salaries and Expenses and $3,438,300 is for extramural purposes under the Research and Development appropriation. This requests reflects a net increase of $265,000 and a decrease of 5 permanent workyears. The dollar increase will be for quick response assays of biological activities. These will be used in conjunction with engineering analyses to help determine ways to minimize the carcinogenic potency of diesel engine exhaust. The decrease in workyears reflects reallocations to other priority programs and the stabilization of this effort after rapid early growth.

The whole animal studies which evaluate the carcinogenic response of normal and special strains of rodents will be completed. These studies will evaluate the potency by techniques ranging from counting tumors to measuring changes in enzyme levels which are believed to be precursors to the onset of tumors. Limited whole animal inhalation studies, evaluating the effects of diesel exhaust on neurological and behavioral activity and on pulmonary function and chronic lung disease, will be continued as will the limited whole animal non-inhalation (skin painting and intratracheal instillation) studies. These studies evaluate the biological response under various dose regimes of diesel exhaust particulates or the organics extracted from the particulates. A series of limited, parallel studies on the same species (hamster, SENCAR mouse) with materials of similar composition to diesel exhaust particulate will be initiated. The materials selected will be based on epidemiological data that suggests a relationship between such materials and an increase in cancer risk. The data from these parallel studies will permit the comparison of the carcinogenic potency of the diesel exhaust with that of the "known" material. Use of the in vitro screening tests will continue. Results will help identify the specific components in the diesel exhaust that may require emissions control and facilitate an understanding of the relationship of changes in emissions with changes in engine design, operation, or after introduction of combustion emission control devices. Isolated test systems will continue to be used to provide rapid health assessments of the pollutants that may be emitted from 1978-80 model year motor vehicles. Both catalyst and diesel exhausts will be evaluated to support the Agency's certification program.

Animal toxicological studies will be conducted on those emission products that, based on the results of rapid, in vitro screening tests, require further investigation. These studies will provide a broader data base for addressing the uncertainty regarding the certification of diesel engines. Epidemiological studies of populations exposed to diesel exhaust products will be continued.

Ambient air quality trend data in Los Angeles will continue to be obtained to evaluate the impact of reducing automobile emissions through new emission control devices. This will provide information on more parameters that may affect the composition of diesel exhaust and thus will aid development of better control strategies. Data obtained from field studies in Long Island and Los Angeles will be used to evaluate and improve the existing highway dispersion models capable of estimating commuter exposure to pollutants from vehicles. Available air quality data will be used to relate population exposures to air quality to determine the contribution of pollutants from vehicles to overall air pollutant levels in urban areas. Characterization of emissions from a few 1979-1980 model year light duty vehicles under limited operation conditions will continue.

HEALTH EFFECTS/CRITERIA POLLUTANTS

1979 Accomplishments

In 1979, the Agency utilized a total of $1,735,700 under this program, of which $1,049,000 was for salaries and expenses and $686,700 was for extramural purposes. Major accomplishments include the following:

- Completion of short-term and intermittent animal exposure studies which assess the health effects of repeated exposures to ozone and nitrogen oxides. Effects noted include impairment of host pulmonary defense mechanisms which are important for clearance of harmful agents, such as bacteria, from the lung. Impairment of these mechanisms increases susceptibility to infectious disease. Further study is required to validate and refine the initial findings.

- Development of techniques to measure effects parameters in animals, such as pulmonary functions, which are evaluated in human exposure (clinical) studies. These techniques, when fully developed, will allow better comparison of animal and human responses to pollutants.

- Realignment of clinical studies to extend experiments on effects from ozone exposures and to include the initiation of experiments on effects from nitrogen dioxide exposures. This realignment was necessary to include more volunteers and to use familiar studies for standardization while incorporating new computerized systems. Results to date show that exercise, which increases the rate and depth of respiration, is a major determinant of pulmonary physiological response (impairment) to ozone and nitrogen dioxide. This finding implies that persons exercising in the presence of these pollutants are subject to greater harm than those resting. Further studies are required to correlate levels of exposure with degree of impairment in both healthy persons and those at risk.

- Installation of computerized systems in the clinical facilities for data acquisition, storage, and validation including exercise rates, pollutant delivery, and cardiopulmonary responses.

- Development of techniques to quantify the degree of respiratory bronchoconstriction in a number of volunteers following administration of bronchoconstriction drugs, both before and after exposure to inhaled pollutants in clinical studies. These techniques were developed in conjunction with the non-criteria program. A mist generator for repeated delivery of standardized amounts of the bronchoconstriction drug in aerosol form was also developed and it will simplify these techniques. Both of these major developments will allow the simulation, in healthy volunteers, of pollutant effects on populations of sensitive individuals such as asthmatics. This capability will also be used in studies on non-criteria pollutants.

- Completion of data collection in an epidemiological study in Los Angeles which is attempting to link pollution from photochemical smog with incidence of acute respiratory disease. The results are being analyzed and are expected to be published in 1980.

- Completion of data collection in Utah which relates levels of several air pollutants to chronic and lower respiratory disease. Results are not yet available, but reports on this study are due to be published during early 1980.

- Improved management of the analytical complexity of environmental epidemiological studies. An ongoing collaborative study, between universities and mathematical society institutes, to develop improved statistical methodologies for data analysis in epidemiological studies has produced a number of technical reports. In many cases, the report will significantly reduce the cost of future studies.

1980 Program

In 1980, the Agency has allocated a total of $5,706,000 to this program, of which $2,439,000 is for Salaries and Expenses and $3,267,000 is for extramural purposes under the Research and Development appropriations. In 1980, this program will continue to provide current scientific data as a basis for maintenance or revision of ambient air standards. This program is designed to respond to EPA's need for information on the health effects of ozone, nitrogen oxides, and other photochemical oxidants, as well as carbon monoxide. The research plan for this program is guided by the oxidants research committee.

Animal studies on effects from exposure to ozone and nitrogen dioxide are continuing; however, emphasis is shifting from short-term exposures to examination of effects from long-term exposures. Pulmonary and systemic effects are being studied, focusing on alterations in physiological, biochemical and metabolic functions; development of acute and chronic diseases; and susceptibility to infections. Impaired animal models are being developed as part of the public health initiative and will be used to mimic responses of humans who may be susceptible to pollutant effects.

Clinical (human) studies continue on effects from exposure to ozone and nitrogen dioxide alone, and in combination with one another. Studies on ozone will examine effects at levels close to the air quality standard to define the lowest level at which persons are affected adversely by ozone exposure. Heat and humidity stresses will be added to ozone exposure studies to evaluate potential ozone effects by other environmental stresses. Studies of effects from exposure to nitrogen dioxide will be performed using pharmacological techniques to study reactivity of respiratory passages. Cardiopulmonary physiological, biochemical, and immunological functions will be examined in these studies. The results of these studies are necessary to provide basic data for reasonable regulatory decisions.

Epidemiological studies in 1980 include a pilot study on acute bronchitis in California; a study of asthmatic children in Boston; and a study of respiratory symptoms in children in New Jersey. In addition, studies are being developed as part of the public health initiative to field test the feasibility of using personal dosimetry monitors in epidemiological studies.

1980 Explanation of Changes from Budget Estimate

The net decrease of $1,094,000 results from several actions. An increase of $41,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $1,800 and $800, respectively. The Congress also reduced all health and ecological effects activities by $4 million, which resulted in a decrease of $939,000 to this activity. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $118,800 to this activity.

A reprogramming of $75,000 was made within the air media to health effects/non-criteria pollutants since an evaluation of the proposed tasks for the criteria and non-criteria components of the public health initiative indicated that the non-criteria component required additional resources in order to assure that the specified tasks were both properly managed and accomplished.

1981 Plan

The Agency requests a total of $6,865,200 and 28 permanent workyears for this program, of which $2,365,800 is for Salaries and Expenses and $4,499,400 is for extramural purposes under the Research and Development appropriation. This reflects an increase of $1,159,200 which will be used to strengthen the extramural program for clinical studies on effects from exposure to oxidants in support of the 1983 (projected) criteria document for ozone and other photochemical oxidants.

Animal studies of effects from long-term exposure to ozone, nitrogen oxides, and other photochemical oxidants, alone and in-combination, will continue with the examination of cardiopulmonary physiological, biochemical, histological, and immunological changes. These are long-term studies, using both normal and impaired animal models, which will simulate long-term exposures of humans and will require several years for useful results to be produced. The above mentioned studies are a continuation of the public health initiative begun in 1980. In addition, studies of the influence of exposure to oxidants on aging will be initiated.

Clinical studies in 1981 will continue to examine the effects of short-term exposures to ozone, nitrogen oxides and other components of the photochemical oxidant mixture which may be added, such as peroxyacetyl nitrates (PAN), both alone and in other combinations simulating actual pollutant mixtures. Studies will be performed on healthy subjects to examine cardiopulmonary physiological responses to pollutant exposure using pharmacological techniques to study reactivity to respiratory passages. Subjects will be stressed with exercise, heat, and humidity, while biochemical, hematologic, and immune function parameters are examined. Increased extramural funding will allow similar studies in clinical settings on volunteers who have respiratory diseases. Other extramural studies will enhance in-house work and will further develop immunological investigative capabilities for clinical research.

After completion of a problem definition study, population studies will be initiated in areas with pollution levels in excess of ambient air quality standards. The definition study will identify types of studies, approaches needed and appropriate locations. Development and use of improved statistical methods for epidemiological analyses and field trial studies on personal exposure monitors will continue as part of the public health initiative begun in 1980.

HEALTH EFFECTS/NON-CRITERIA POLLUTANTS

1979 Accomplishments

In 1979, the Agency utilized a total of $10,061,300 under this program, of which $3,416,300 was for salaries and expenses and $6,645,000 was for extramural purposes for research activities. Major accomplishments include the following:

- Short-term and intermittent studies were completed on normal animals and on animals with simulated upper and lower respiratory disease to determine the effects from exposure to particulate pollutants (including sulfates) in the inhalable size range. Results have shown few effects upon pulmonary function or upon biochemical, hematological, or immunological parameters. This data has been provided for use in the development of criteria documents. Further studies are appropriate and will follow.

- Animal models of human respiratory diseases were developed. These models represent conditions such as emphysema, hypertension, congestive heart failure, asthma, and pulmonary fibrosis and reflect the increased sensitivity to pollutant exposure seen in some humans. They will be used in studies on both criteria and non-criteria pollutants.

- A clinical study was completed to assess acute effects from inhalation exposure to low levels of sulfuric acid mist at various concentrations. This study was undertaken as a follow-up to a 1978 pilot study. Results indicated no significant decrements of pulmonary function.

- A human exposure chamber was modified to permit the evaluation of biochemical and immunological factors during the performance of clinical studies.

- A study of asthmatics in Denver, Colorado, demonstrated little association between elevated particle levels and asthma symptoms.

- An evaluation of pulmonary function among children in Montana in relation to elevated particulate levels demonstrated no significant differences in effects in the various exposure categories.

- Data collection for an epidemiological study on changes in pulmonary function in school children as a function of varied sulfur dioxide, nitrogen dioxide, and particle levels was completed in Akron, Ohio. Data analysis is currently underway.

- Data on morbidity and mortality rates in several Illinois cities were studied in relation to particulate pollution levels. In some cases positive associations were found between particulate pollution levels and health effects, but in other cases those associations were not found. Further studies are needed to clarify the relationships observed.

1980 Program.

In 1980, the Agency has allocated a total of $15,077,600 to this program, of which $7,779,400 is for Salaries and Expenses and $7,298,200 is for extramural purposes under the Research and Development appropriation.

This program, which is an integral part of the public health initiative, continues to provide scientific data needed for maintenance or revision of ambient air standards or for creation of emission standards for hazardous pollutants. More specifically, it is designed to provide the health segment of an integrated data base on effects of sulfur oxides, airborne particles, lead, and hazardous airborne pollutants such as heavy metals and organic compounds. The research includes:

- Animal studies on health effects from particulate pollutants, in the inhalable size range, in which emphasis is shifting to long-term exposure conditions, using both normal and impaired animals. Development and refinement of these models, which emulate human disease conditions continues with cardiopulmonary physiological, biochemical, histologic, and immunologic changes being studied. Research on the harmful effects of trace metals is also continuing.

- Phase I of a phased project to study health effects resulting from the exposure of human volunteers to gases and particulates (in the inhalable size range) was begun in 1979 and will be completed in 1980. Being performed in conjunction with research under the criteria program, Phase I is designed to produce standardized techniques for bronchoconstrictor dosage administration by inhalation. These techniques will allow studies to compare pollutant effects on normal subjects with those in persons simulating respiratory dysfunction. Results to date indicate a high degree of variation in sensitivity to inhalation of bronchoconstrictors, even among those volunteers previously considered "normal."

- Phase II of the above studies will begin in 1980 following the completion of Phase I and involves exposures to various particle species such as sulfates, alone and in combination with ozone, nitrogen oxides, and sulfur oxides. Using techniques developed in Phase I, healthy volunteers will be exposed to pollutants in combination with exercise, heat, and humidity. Cardiopulmonary physiological, biochemical, hematologic, and immunologic parameters will be examined. No hazardous pollutants will be used in clinical studies; however, as part of the public health initiative, other studies will be developed in 1980 to identify biological indicators of exposure to hazardous air pollutants, and results from this research will be applied to epidemiological studies performed during the development of personal physiological monitors.

- A major epidemiological effort will focus on populations exposed to particulate air pollutants in combination with pollutant gases. The precise design of these studies will be determined from results of a problem definition study currently underway. Studies on particles and sulfur dioxide are continuing in Steubenville, Ohio; St. Louis, Missouri; El Paso, Texas, and Tempe, Arizona. These studies of populations exposed to hazardous pollutants involve the application of biochemical indicators and refined statistical techniques. They will also determine whether a high incidence of genetic effects is associated with exposure to air pollutants.

1980 Explanation of Changes from Budget Estimates

The net decrease of $2,227,400 results from several actions. An increase of $172,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $6,600 and $100, respectively. The Congress also reduced all health and ecological effects activities by $4 million, which resulted in a decrease of $2,141,000 to this activity. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $327,000 to this activity.

A reprogramming of $75,000 was made from health effects/non-criteria pollutants since an evaluation of the proposed tasks for the criteria and non-criteria components of the public health initiative indicated that the non-criteria component required additional resources in order to assure that the specified tasks were both properly managed and accomplished.

60-531 O - 80 - 27

1981 Plan

The Agency requests a total of $16,359,800 and 115 permanent workyears for this program, of which $6,499,800 is for Salaries and Expenses and $9,860,000 is for extramural purposes under the Research and Development appropriation. This reflects an increase of $1,282,200 and a decrease of 12 permanent workyears from the current level. The dollar increase expands the extramural program to include (1) development of animal models for pulmonary disposition and clearance of particulate pollutants, (2) new techniques to assess impairment of host defense systems, and (3) animal models to assess carcinogenicity of air pollutants. The position decrease reflects a change in priorities, away from in-house epidemiological studies on effects from indoor air pollution and from exposure to rural fugitive dusts toward the extramural studies mentioned above.

The program will continue long-term studies on animals exposed to particles in the inhalable size range. These studies simulate long-term exposures and resultant effects upon humans and will require several years to produce useful results. Studies will also be undertaken on larger particles and gas-particle interactions. Studies of toxic effects from heavy trace metals will continue and animal studies will be initiated on effects from exposure to additional hazardous particularly organic air pollutants.

Phase II, the clinical studies on particle species initiated in 1980, will be continued. Based on results of the Phase II studies, follow-up studies will begin on those pollutants for which significant effects are found. Physiological, biochemical, immunologic, and hematologic responses will be studied further following exposure to pollutants in combination with exercise, heat and humidity stress. Studies to develop biological indicators for hazardous pollutants will also be continued in 1981 as part of the public health initiative.

The extramural epidemiology program for 1981 will reflect little change from the 1980 program because of its long-term nature.

ECOLOGICAL EFFECTS

1979 Accomplishments

In 1979 resources obligated were $1,553,200, of which $872,300 was for in-house expenses and $680,900 was for extramural purposes. Major findings and accomplishments are listed below:

- Plans were completed for establishing a national crop loss assessment network. This network will supply a data base for predicting the economic effects of ambient simulations of sulfur dioxide and ozone on agriculture crops.

- Studies have shown that Hyslop winter wheat exposed to .06 parts per million sulfur dioxide, which is considerably lower than the present standard, reduced yields by 22 percent; yields were reduced even more at higher concentrations.

- Studies determined that woody foliar and root growth of conifers can be significantly suppressed by exposures during winter conditions to sulfur dioxide concentrations as low as .06 parts per million.

- Studies determined that fluctuating concentrations of sulfur dioxide decrease forage yield and nitrogen fixation of alfalfa when the median concentrations exceeded .08 parts per million, with no effect on forage quality.

- Investigations indicated that the rate of photosynthesis in plants can be depressed by short term exposures to sulfur dioxide concentrations of .04 - .06 parts per million.

- The growth of plants exposed to nitrogen dioxide pollution in the dark is not decreased at concentrations less than 1.5 parts per million under a 5 hr./day exposure regime throughout the plant life cycle.

- The concentration threshold at which ozone causes injury to plants is increased by mild water stress factors and/or limited water availability.

- Plants exposed to sulfur dioxide emit hydrogen sulfide gas to the atmosphere. The quantity of emitted gas is proportional to the concentration of sulfur dioxide to which the plants are exposed.

- Research on the effects of photochemical oxidants on a mixed coniferous forest ecosystem in the San Bernardino National Forest demonstrated many harmful effects ranging in ecological scale from altered physiological processes to a lack of reproduction which will cause the larger tree species, and thus the forest itself, to disappear over an extended period of time.

- Hydrocarbon effects studies have shown that pines emit significant quantities of monoterpenes, oxidant pollutant precursors, into the environment and the rate of emission increases exponentially with temperature.

- Research has shown that isoprene, a potent oxidant precursor, is emitted in significant quantities into the atmosphere by a wide range of plant species including major agriculture crops and forest species.

1980 Program

In 1980, the Agency has allocated a total of $2,389,100 to this program, of which $898,400 is for Salaries and Expenses and $1,490,700 is for extramural purposes under the Research and Development appropriation.

In 1980, research emphasis is being placed on clarifying the effects of criteria pollutants in order to evaluate the adequacy of secondary air quality standards and to provide the ecological basis for refining and updating existing criteria and standards. Research will also support decisions relating to regionalization of standards and prevention of significant deterioration.

Investigations are aimed at detecting, understanding and predicting the impact of airborne pollutants on terrestrial ecosystems (natural systems and agricultural crops). This includes assessments of biotic and abiotic components, the related pollutant interactions on processes and the potential impact on human health or welfare. Research findings are relating air pollutant concentrations to damage potentials in the environment by assessing pollutant perturbations and effects and bioaccumulation in terrestrial ecosystems and in food chains. Studies encompass pollutant sources, emissions, air quality deterioration potential, and other discharges which alter environmental conditions and subsequently affect terrestrial systems.

Extramural research is being expanded to laboratory and field assessments of the acute and chronic, low level effects of photochemical oxidants (ozone, PAN), sulfur dioxide and nitrogen oxides. Studies are being conducted on pollutant interactions as related to agricultural crops and natural ecosystems to determine their impact on productivity, food quality, and its economic implications. Oxidant stress studies on

deciduous forests are being initiated and chronic exposure studies, using criteria pollutants, are defining minimum allowable exposures. A regional crop loss assessment network is being established to determine the economic impact of photochemical oxidants and sulfur dioxide on commercially important crops. Other studies include the effects and assessments of hydrocarbons (biogenic emissions) as they contribute to air-mass loadings.

In addition, synergistic reactions of pollutants coupled with biological processes, environmental factors and interactions within the soil ecosystems are also being evaluated.

1980 Explanation of Changes from Budget Estimates

The net increase of $123,100 results from several actions. An increase of $19,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $1 million to ADP costs resulted in a decrease of $3,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $41,300 to this activity.

A reprogramming of $4,000 was made within the air media to transport and fate to support the effort to integrate the MAPPs 3 program within one activity. A transfer of $36,000 was made to the management and support media to lab support for lab maintenance costs due in part to increasing costs of energy. A transfer of $187,700 was made from water quality freshwater ecological effects as a result of the reorganization of the programmatic functions of the Corvallis and Las Vegas labs after a 1979 RIF.

1981 Plan

The Agency requests a total of $2,295,300 and 11 permanent workyears for this program, of which $975,000 is for the Salaries and Expenses appropriation and $1,320,200 for extramural activities under the Research and Development appropriation. This request reflects a net decrease of $93,800. This decrease represents a change in Agency priorities, delaying the establishment of satellite sites for the national crop loss assessment network as well as some nitrogen dioxide research. The 1981 program includes:

- Studies to characterize pollutant impacts, acute and chronic effects of single pollutants, pollutant mixes and interactions, and where applicable, the economic losses associated with pollutant exposurs.

- Studies to determine the dose/response of selected agricultural crop and tree species to photochemical oxidants (ozone, PAN, and nitrogen oxides). A major portion of this research will be extramural and operation of five crop loss assessment research sites will evaluate ozone and sulfur dioxide effects and the economic losses of crops on a regional basis. Additional sites will be developed as appropriate to attain a national assessment.

- Methods and techniques will be developed to assess bioaccumulation, synergistic reactions and the effects of gaseous pollutant mixtures on agriculture crop yields, plant life in older development stages and physiological processes of plant species.

- Photochemical oxidant stress studies on coniferous and deciduous forest ecosystems will continue, resulting in the development of mathematical models to predict pollutant impact.

- Studies to determine the biogenic emissions of hydrocarbons from vegetation sources, and to define how these pollutants contribute to rural and urban air-mass loadings, will be conducted.

- Studies to assess the long-term stability of plant communities subjected to low level pollution stresses from sulfur dioxide will be conducted. Population survival, reproduction and mortality are of major interest in these studies.

TRANSPORT AND FATE

1979 Accomplishments

In 1979, this program utilized $10,656,500. This includes $2,081,300 for in-house expenses and $8,575,200 for extramural expenses.

A first generation photochemical air quality simulation model, designed to predict pollution concentrations on the regional scale, was completed and delivered to EPA. This model will be used in assessing the impact of the long-range transport and transformation of ozone and its precursors for the Northeast. This work represents an integral part of the total photochemical oxidant transport and fate program to assist the evaluation/revision of the 1982 state implementation plan (SIP) for oxidants.

A preliminary report was prepared to assess current information on the role of hydrocarbons emitted from vegetation, e.g., terpenes, in producing photochemical oxidants in urban and rural areas. Over the past few years there has been a great controversy on the specific degree to which the natural hydrocarbon emissions contribute to photochemical oxidant pollution problems. This report evaluated the current scientific data available on the issue and identifies those areas where additional research is needed. These areas are: (a) deterioration of natural hydrocarbon emissions factors, (b) quantification of natural hydrocarbons gases and aerosols in urban and rural atmosphere, and (c) identification of products resulting from smog chamber photochemical studies of natural hydrocarbons.

Scientific results obtained from the summer of 1978 field study in the Houston area were presented in a special conference. Technical information was presented on the chemical and physical characterization of photochemical oxidants and aerosols found in the Houston atmosphere. This information described the contributions from both man-made and natural sources, historical air quality trend analysis and air quality modeling studies.

A report was prepared that described meteorological conditions that are associated with high ambient ozone and sulfate concentrations. The study was based on a summer air pollution episode that occurred in the eastern portion of the U.S. This study contributed to the overall understanding of the atmospheric conditions that lead to extremely high levels of pollution.

A report was prepared that described the application of wind tunnel experimentation when assessing the air quality impact from a power plant located in complex terrain. The data collected from a field study, which was conducted on a coal fired power plant located in the Clinch River area, was compared with wind tunnel results. This comparative study will be used to develop more accurate air quality simulation models to assess the impact of stationary source pollutants emitted in complex terrain.

1980 Program

In 1980, the Agency has allocated a total of $12,618,100 to this program, of which $2,366,500 is for Salaries and Expenses and $10,251,600 is for extramural purposes under the Research and Development appropriation. In 1980 the program emphasized the following:

The STATE (Sulfur Transport and Transformation in the Environment) program will conduct a major regional field experiment called PEPE (Persistent Elevated Pollution Episodes). Unlike the previous STATE studies which focused primarily on individual power plant plumes, PEPE will expand the field program activities to a larger region where both urban and power plant plumes become well mixed. Pollution episodes on the order of 300 kilometers in diameter will be tracked physically and chemically over several summer days as they move thousands of kilometers. EPA and NASA are planning a joint program to study this phenomenon by developing improved techniques for utilizing satellite imagery to study the structure and movement of the polluted air mass. The results from the STATE program will provide information on the long-range transport and fate of fine and inhalable particles with emphasis on atmospheric sulfates.

Another major field program, NEROS, (Northeast Regional Oxidant Study) will investigate the impact of long-range transport of photochemical oxidants and their precursors in the northeastern portions of the U.S. The results from NEROS will be used in the development of air quality models for predicting and assessing regional scale air pollution problems.

The Houston air quality field study will be in its third year. The results of the field program are intended to provide useful information on the pollutants and meteorological conditions that lead to elevated oxidant and particulate levels.

An imporant series of validation studies for urban scale oxidant pollution problems are being conducted to provide reliable and accurate air quality simulation models. With an extensive air quality data base collected during the St. Louis Regional Air Pollution Study, a special group of photochemical air quality simulation models (AQSM) will be validated for eventual use in preparing and evaluating oxidant control strategies for large urban areas in the U.S.

One of the important air quality modeling areas that will be accelerated in 1980 is the development of models that can be used to predict pollutant concentrations in complex or rough terrain. Since many of the current and projected locations of power plants are found in hilly and mountainous areas, there is a need to develop types of air quality models that can provide reliable and accurate pollutant concentration predictions for assessing pollutant abatement strategies.

Special laboratory studies will be conducted to ascertain information on the formation, rate of growth, and removal of important regulated and non-regulated pollutants with major emphasis on oxidants, sulfate, nitrate hydrocarbons and particulate matter (including fine and inhalable particulates). A smog chamber will be used to simulate atmospheric chemical and physical processes for certain studies.

1980 Explanation of Change from Budget Estimate

The net decrease of $391,900 results from several actions. An increase of $64,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental apropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $3,000 and $2,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $180,200 to this activity.

A reprogramming of $19,000 was made within the air media from ecological processes and effects ($4,000) and from air characterization and measurement methods development ($15,000) and $8,000 from the energy media from energy transport and fate to support the effort to integrate the MAPPs 3 program within one activity.

A transfer of $207,000 was made to the management and support media for lab support for lab maintenance costs due in part to increasing costs of energy. A transfer of $45,700 was made within the air media to characterization and measurement methods development and $45,700 to the toxic substances media to reflect a transfer of personnel.

1981 Plan

The Agency requests a total of $13,105,700 and 42 permanent workyears for this program, of which $2,470,300 is for the Salaries and Expenses appropriation and $10,635,400 for the Research and Development appropriation. The increase of $487,600 will be utilized to accelerate the research program on photochemical oxidant transport and fate processes.

The 1981 program will continue to support research on determining the transport, transformation and removal process of regulated and important non-regulated pollutants with major emphasis on oxidants, sulfates, nitrates, hydrocarbons and particulate matter (including fine and inhalable particulates). The major research areas include the following:

The STATE program will devote most of its effort to the analysis and evaluation of data collected during the PEPE experiment conducted in the summer of 1980. The data collected by using PEPE will be used to develop and evaluate air quality models predicting spatial and temporal concentrations of fine and inhalable particulates on the regional scale.

The NEROS program will focus on completing the development and evaluation of a second generation regional air quality model for photochemical oxidants. The modeling effort will be based on the air quality data collected during the summer experiment of 1979 and 1980.

The Houston air quality study will complete its work on characterizing the atmospheric aerosol/fine particulates in the atmosphere. In order to complete the work on the photochemical oxidant problem in the Houston area, emission data will be collected and used in applying an urban photochemical air quality simulation model adapted for Houston.

Research will continue in other air quality modeling areas. For the urban scale pollution problem, photochemical oxidant air quality models, validated in the 1980 program, will be subsequently modified and adapted in a manner to minimize the necessary data and computational requirements that the general user community will require to run the models.

Smog chamber studies will be conducted to simulate atmospheric pollutant processes. This research will attempt to determine the role hydrocarbons (especially aromatics and low molecular weight paraffins) and nitrogen oxides play in producing elevated levels of photochemical oxidants. Also research will be conducted to assess the impact of natural hydrocarbons emissions on rural and urban oxidant pollutant problems. The laboratory research will focus on the mechanisms of formation and removal of fine and inhalable particulate matter with emphasis on the conversion of precursor gases such as sulfur dioxide to sulfates.

AIR

Industrial Processes

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1980 vs. 1981
		(dollars in thousands)			
Appropriation					
Salaries and Expenses...	$1,128	$1,150	$1,133	$1,069	-$64
Research and Development	2,861	2,900	2,934	3,030	+96
Grand Total.....	3,989	4,050	4,067	4,099	+32
Permanent Positions.....	22	18	18	18	...
Full-time Equivalency...	40	31	31	31	...

Budget Request

The Agency requests a total of $4,098,800 for 1981, an increase of $31,600 from 1980. Included in this total is $1,069,000 for the Salaries and Expenses appropriation and $3,029,800 for extramural purposes under the Research and Development appropriation, a decrease of $64,100 and an increase of $95,700, respectively. The net $31,600 increase will be for identifying the sources of, and control technology for, oxidants.

Program Description

The industrial air processess program is primarily an extramural effort that responds to legislative mandates of the Clean Air Act. The overall objective is to assess industrial air pollution emissions and to develop and demonstrate pollution control technologies capable of reducing or eliminating potentially hazardous and toxic pollutants emission from industrial point sources. Outputs provide technical and the cost data bases which support regulatory standards development and provide industry with environmental control options. Emissions under study are those primarily found in the following industries: chemical processing, agrichemicals (fertilizers and pesticides), textiles, pulp and paper, metal fabrication and finishing, metal and mineral production, petroleum refining, and storage segments, as well as those emissions resulting from hazardous material incidents.

1979 Accomplishments

The 1979 resources obligated for this activity was $3,988,600, of which $1,128,100 was for in-house costs and $2,860,500 was for extramural activities. In 1979, the program

- Assessed and monitored the manufacturing operations for four pesticides, four petro-chemicals, and four organic chemcials.
- Investigated lime/limestone scrubbing for smelting sulfur-bearing nonferrous ores.
- Characterized volatile emissions (arsenic, lead and cadmium) and identified available control technologies for copper, lead, and zinc smelters.
- Demonstrated carbon absorption for control of petroleum solvent emissions and solvent recovery for an industrial dry cleaning facility. This work, undertaken at the request of the Office of Air Quality Planning and Standards (OAQPS), will be the basis for regulation of the industry.

- Determined the state-of-the-art for emission control from printing and other operations in the flexible packaging industry; characterized emission source types; and initiated a program to demonstrate control technology for reduction of organic solvent emissions.

- Evaluated and improved solventless coating technologies for the furniture manufacturing industry to determine inertness and product acceptability. These methods of painting, which do not utilize solvents, will assist the Office of Air Quality Planning and Standards to set lower emission limitations for volatile organics.

- Measured volatile chemical emissions from wastewater treatment basins. This program, developed for the kraft pulping industry, will provide a data base and sampling methodology for other industry segments.

- Investigated one coating process alternative to reduce organic discharges from automobile manufacturing operations.

- Completed an assessment on sources of toxic air emissions from the textile industry and implemented bench scale activity for hydrocarbon removal.

- Demonstrated technology for control of hazardous particulates from glass industry furnaces.

- Developed an approach for evaluating the cost and capabilities of alternatives for controlling hydrocarbon emissions from operations which use solvent such as dry cleaning.

- Conducted an environmental assessment of coal preheaters to identify types and quantities of hazardous pollutants emitted.

- Characterized technologies for control of fugitive lead emissions from secondary lead facilities through an interagency agreement with the National Institue of Occupational Safety and Health (NIOSH).

- Optimized methods for control of asbestos emissions.

- Evaluated, at pilot scale, four flue gas cleaning techniques to remove SOx and trace metals from metallurgical offgases.

1980 Program

In 1980, the Agency has allocated a total of $4,067,200 to this program, of which $1,133,100 is for the Salaries and Expenses appropriation and $2,934,100 is for extramural purposed under the Research and Development appropriation.

A major problems in the attainment and maintenance of ambient air quality standards at the present time is the problem of oxidants. The program emphasis in 1980, therefore, is the characterization and control of hydrocarbon emissions which are precursors to oxidant formation.

To achieve national ambient air quality standards for oxidants, state implementation plan (SIP's) will need to be revised. Before the Agency can fully assist in the development of evaluation of these new SIP's, critical information gaps in the current emissions inventories must be filled. To satisfy this requirement, an industrial air emissions volatile organic chemicals (VOC) program will be initiated. Specifically the program will:

- Characterize point source emissions from approximately eight VOC storage and handling sites to determine their contribution to toral VOC emissions rate. Specific chemical compound identification will be included. Test sites will be selected to enable a nationwide estimate of all emissions made by these storage and handling sites.

- Develop a cost-benefit-risk model with supportig emissions data that can be used in regulating various sources of potential carcinogenic emissions as well as other chemicals from iron and steel manufacturing operations.

- Demonstrate a capture device for volatile organic emissions from automotive tire curing. This is needed for new source performance standards (NSPS) development.

- Demonstrate applicability of surfactant enhanced scrubbing (SES) to control VOC emissions from paint-bake ovens in automotive and/or other industries.

- Evaluate the drum mix dryer for the asphalt hot mix industry to quantify VOC and particulate emissions as a function of operating parameters.

- Evaluate industrial applications of activated carbon for hydrocarbon control in organic chemical and related industries.

- Develop data to determine the cost effectiveness of various emission reduction and collection technologies for VOC control in metal finishing operations.

- Develop data to determine the cost-effectiveness of various maintenance options as an approach to controlling fugitive VOC emissions from refining, petrochemical and organic chemical facilities.

- Undertake further quantification of VOC emission rates to identify the effect of adding oxidant-producing chemicals at industrial wastewater treatment plants.

- Design and test sophisticated instrumentation systems to maximize exhaust of solvent concentrations from curing ovens, paint application booths, and other solvent-use industries to reduce the danger of explosion.

The Office of Air Quality Planning and Standards (OAQPS) estimates that of the 100 new source performance standards planned for promulgation during the next four years, at least 25 will have best available control technology (BACT) that is inadequate in terms of degree of available control. High priority control technology development and testing programs will therefore be undertaken as follows:

- Control technology development programs will be initiated for several critical industrial source categories which will be identified by OAQPS as having inadequate BACT.

- Performance evaluations of retrofit pilot-scale collection technologies such as carbon absorption and catalytic incineration will be conducted at coil, web, and sheet coating facilities, textile finishing facilities, paint-bake ovens, and selected petrochemical sites.

- Technologies for control of emissions from solvent and gasoline loading operations for barges and rail cars will be developed and tested.

- Studies of new and retrofit technology for dust suppression and fugitive emission controls at secondary lead smelters will be conducted.

1980 Explanation of Changes from Budget Estimate

The net increase of $17,200 results from several actions. An increase of $38,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $3,200. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $18,500 to this activity.

1981 Plan

The Agency requests a total of 18 permanent workyears and $4,098,800 for this program, of which $1,069,000 is for the Salaries and Expenses appropriation and $3,029,800 is for extramural purposes under the Research and Developement appropriation. The increase of $31,600 will be used to identify sources of and control technology for oxidants.

States will be revising their implementation plans to meet the National Ambient Air Quality Standards (NAAQS) for oxidants. Industrial air emissions characterization will be continued to support this work. A continuation of control technology development and testing will be supported to improve the performance of best available control technology (BACT) related to several New Source Performance Standards.

A new quick response, short term feasibility testing program will be established to support the Agency's industrial air pollution enforcement program. This activity will perform source inspections and engineering evaluations to determine appropriate control approaches. It will also make small feasibility tests of promising candidate control systems for oxidants, hazardous air pollutants, gaseous and inhalable particulates

Guidelines will be developed, tested and published for use by the Office of Enforcement is their monitoring program for control of fugitive VOC emissions. This effort will acquire substantive information on the major industrial fugutive sources of oxidant precursors needed to develop effective control strategies for the attainment of the oxidant NAAQS.

Major research results to be achieved in 1981 include:

- Verification of the effectiveness of maintenance as an approach to control fugitive VOC emissions from pumps, valves, etc. in petrochemical and refinery operations.

- Determination of efficiency of flares as a control technique to destroy VOC emissions from the petrochemical and refinery industries.

- Development of emission factors data to quantify fugitive VOC emissions from refinery operations and waste treatment systems.

- Conduct a pilot scale field study in order to produce a design manual of control processes for hydrocarbon emissions for textile printing operations.

- Development of a carbon-regeneration system which would reduce the cost of carbon sorption systems as a control device on small fabric coating emissions streams or gasoline control systems.

- Assessment of steel industry electric ore and blast furnaces for emission of carcinogens and other suspected hazardous air discharges.
- Development of technology to control volatile organic emissions from hot and cold steel rolling mills.
- Determination of emissions from cement kiln burning industrial organic waste.
- Determination of emissions from industrial hazardous waste incinerators.
- Submission of inhalable particulate matter (IPM) samplings and analyses data on primary aluminum, lead, zinc and cooper smelters, secondary lead smelters and cement manufacturing facilities to OAQPS.
- Demonstration of surfactant enhanced scrubbing from controlling VOC emissions from metal finishing operations.
- Demonstration of a control device for fugitive arsenic and sulfur dioxide emissions from copper smelter converters.

AIR

Monitoring and Technical Support

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Appropriation					
Characterization and Measurement Methods Development:					
Salaries and Expenses...	$2,396	$3,669	$3,090	$3,102	+$12
Research and Development	4,547	4,864	4,781	4,942	+161
Monitoring Methods and Systems:					
Salaries and Expenses....	1,560	1,384	2,257	2,223	-34
Research and Development.	2,692	3,266	2,828	2,948	+120
Quality Assurance:					
Salaries and Expenses....	1,737	2,851	2,040	2,225	+185
Research and Development.	2,187	2,050	2,420	2,430	+10
Technical Support:					
Salaries and Expenses....	1,750	2,118	2,016	1,950	-66
Research and Development.	1,484	1,087	1,178	1,005	-173
Total:					
Salaries and Expenses....	7,443	10,022	9,403	9,500	+97
Research and Development.	10,910	11,267	11,207	11,325	+118
Grand Total.....	18,353	21,289	20,610	20,825	+215
Permanent Positions					
Characterization and Measurement Methods Development.....	48	63	64	61	-3
Monitoring Methods and Systems.....	22	21	21	21	...
Quality Assurance.....	42	44	42	42	...
Technical Support.....	38	32	34	31	-3
Total.....	150	160	161	155	-6
Full-time Equivalency					
Characterization and Measurement Methods Development.....	54	69	67	64	-3
Monitoring Methods and Systems.....	27	25	32	32	...
Quality Assurance.....	46	45	46	46	...
Technical Support.....	44	47	41	37	-4
Total.....	171	186	186	179	-7

Budget Request

The Agency requests a total of $20,825,300 and 155 permanent workyears for 1981, an increase of $215,500 and a decrease of 6 permanent workyears from 1980. Included in this total is $9,500,000 for Salaries and Expenses and $11,325,000 for extramural purposes under the Research and Development appropriation, with an increase of $97,400 and $118,100, respectively. The net increase of $215,500 has the following components: an increase of $173,500 will provide for prototype studies on the characterization of pollutants in the ambient air at urban locations; an increase of $86,100 will accelerate implemenation of the inhalable particulate network; an increase of $195,200 will provide for additional quality assurance in monitoring emissions from stationary sources; and a decrease of $239,300 reflects reduced support for the Office of Air Quality Planning and Standards monitoring program.

Program Description

The air monitoring and technical support program consists of four major components: (1) characterization and measurement methods development for measuring pollutants from sources and in ambient air, (2) monitoring methods and systems development to support operational monitoring requirements, (3) the development and provision of quality assurance procedures and materials to assure monitoring data validity, and (4) the provision of technical support to EPA regulatory and regional offices. Each of these components is discussed below.

The major emphasis of the characterization and measurement methods development program is the development of sampling and analysis techniques for identification and measurement of pollutants from stationary sources. Work in this area focuses on the development of sampling procedures and associated instrument requirements for impending new source performance standards and improvement of techniques associated with existing new source performance standards, e.g., the development of improved sampling procedures for continous in-stack monitoring of particulate matter. Additional work is carried out on the identification of stationary source pollutants and in the support of stationary source compliance activities.

Another major program activity is the development of sampling and analysis techniques for identification and measurement of pollutants from mobile sources. Integral to this development work are characterization studies which describe gaseous and particulate emissions from advanced power systems for light duty vehicles. Characterization studies are also carried out to determine the composition of aircraft particulates emissions and the effects of emission control systems on the quality, size distribution, and composition of those particulate emissions.

Sampling and analysis techniques for the identification, characterization, and measurement of pollutants in ambient air is the third activity. New and improved analytical techniques for criteria and non-criteria pollutants are developed. This area of research also includes studies characterizing urban and rural atmospheres for a variety of important gaseous and particulate pollutants including: ammonia, sulfates, formaldehyde, polynuclear aromatics, nitrates, and organic acids.

The air monitoring methods and systems program supports the testing, evaluation, and demonstration of measurement systems for monitoring specific pollutants in ambient air and emissions from stationary sources. The program assures the availability of monitoring methods for the measurement of all regulated pollutants at or below the concentration levels of interest, and for measurement of unregulated pollutants at levels of interest specified by the EPA's regulatory offices.

The quality assurance program serves the EPA's air monitoring effort through the validation and standardization of monitoring methods, development and provision of quality control materials and procedures for operational use, the conduct of methods and analysts' performance evaluation studies, development of data analysis and data handling systems, and participation in regional quality assurance workshops.

The air technical support program provides assistance to regulatory and regional offices in implementing the mandates of the Clean Air Act. Efforts are in the area of special measurements of regulated pollutants for regulation revision and planning as well as measurements of unregulated pollutants such as asbestos, organic chemicals and pesticides and their transformation products for future regulatory activities. The program plans and provides support to operational monitoring in those areas where regional or program office personnel cannot respond because of the need for specialized expertise or facilities available only in the Office of Research and Development.

CHARACTERIZATION AND MEASUREMENT METHODS DEVELOPMENT

1979 Accomplishments

During 1979, obligations were $6,942,700 of which $2,395,800 was for in-house purposes and $4,546,900 was for extramural purposes.

In 1979, there were several noteworthy accomplishments, particularly in the mobile source and stationary source areas. A manual of measurement methods was published for 12 unregulated pollutants emitted by passenger cars. These methods will support the implementation of Section 202(a) (4) requirements on these pollutants.

Two reports to Congress were completed. The first, required under Section 214, reported on the particulate matter emissions from motor vehicles. The second, under Section 403(g) reported on sulfur bearing compounds emitted from motor vehicles and aircraft engines.

In the area of stationary sources, a special sampling device was developed to allow the measurement of free sulfuric acid emitted in the flue gas from coal and oil fired boilers. The device separates the sulfuric acid from other primary sulfates and was used to show that free sulfuric acid may be as high as forty percent of the primary sulfate emissions.

1980 Program

In 1980, the Agency has allocated a total of $7,870,900 to this program, of which $3,090,300 is for Salaries and Expenses and $4,780,600 is for extramural purposes under the Research and Development appropriation.

Ambient air quality research is focusing on the optimization of measurement methods for inhalable particulate matter and the fine particulates associated with visibility deterioration. Studies are being conducted to characterize the particulates in some locations and to develop procedures for identifying their sources and apportioning the inhalable particulates according to type of source. Work continues on the development of instruments sufficiently sensitive to measure background levels of pollutants, particularly sulfates, nitrates, hydrocarbons and potentially hazardous organic substances.

In the stationary source research area, measurement methods for inhalable and fine particulates are being perfected. The methods being worked on include a reference method to be used in connection with new source performance standards which may be proposed in the near future, a particle size monitor for in-stack use and a sampling device to collect vapors which become aerosols at ambient conditions. Work is continuing on the characterization of particulates from combustion sources and smelters, on a sampling strategy for pressurized bag-houses and on methods to locate and measure fugitive particulate emissions.

In the mobile source area, work is being done to determine the rates of emission of hazardous gases from gasoline-fueled cars and to identify the conditions which maximize hazardous pollutant formation. Work on diesel emissions continues with large samples being collected and fractionated to allow health effects studies to be conducted. The chemical compounds in mutagenic fractions will be identified, as will the diesel fuel precursors which give rise to these compounds in the emissions. Work is continuing on the characterization of emissions from advanced automotive power systems scheduled for use in the 1980's including turbo-charged, naturally aspirated diesels and gas turbine engines.

In the carbon fiber program, instrumentation for monitoring emissions from production, fabrication and disposal facilities is being evaluated. Simulations of projected processing and disposal operations are being undertaken and a procedure to generate carbon fiber aerosols is being developed for use in other studies.

1980 Explanation of Change from Budget Estimate

The net decrease of $661,800 results from several actions. An increase of $81,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $138,400 to this activity.

A reprogramming of $15,000 was made within the air media to transport and fate to support the effort to integrate the MAPPs 3 program within one activity. A transfer of $136,000 was made to the management and support media to lab support for lab maintenance costs due in part to increasing costs of energy. A reprogramming of $45,700 was made within the air media from transport and fate to reflect a transfer of personnel. A reprogramming of $500,000 was made within the air media to monitoring methods and systems in order to comply with an OMB directive to place all funds for the National Bureau of Standards in one activity in each applicable media for ease of program review.

1981 Plan

The Agency requests a total of $8,044,400 and 61 permanent workyears for this program, of which $3,102,300 is for the Salaries and Expenses appropriation and $4,942,100 is for extramural purposes under the Research and Development appropriation. An increase of $173,500 and a decrease of 3 permanent workyears will be used to establish a prototype study to characterize the ambient air in different locations, to identify potentially hazardous substances and to determine the sources of the hazardous pollutants.

All components of this program will continue to emphasize inhalable and fine particulate matter and organics including specific compounds identified as hazardous. The work on carbon fibers will be completed and the potential environmental problems arising from the use of this material identified.

Carefully designed studies will be undertaken to characterize the ambient air with respect to hazardous pollutants at an urban industrial and non-industrial site. The pollutants will be identified and the biological activity determined for those pollutants occurring at significant levels. The levels of a limited number of chemicals already identified as potentially hazardous, will be determined for use in establishing exposures and assessing risk. Work on inhalable and fine particulates will continue.

Research will continue on inhalable and fine particulates from stationary sources. This work will provide the measurement methods and emission data for the particulate species needed to develop particulate and visibility criteria. Work will also be conducted to determine emission factors for hydrocarbons from selected stationary sources, to develop low cost instruments for the routine enforcement and surveillance activities of measuring gaseous pollutant concentrations and plume velocity and opacity from positions off the source property. Research will continue on procedures for measuring pollutants emitted from extended sources and other unusual sources such as the flares used in petroleum refineries.

Research on mobile sources will continue on unregulated and potentially hazardous pollutants emitted from light and heavy duty vehicles powered by a variety of engines. Turbo-charged and naturally aspirated diesel engines will be emphasized. Both in-use and prototype vehicles will be studied. The impact of fuel composition and driving conditions on the chemical and physical properties of the emissions will be determined.

MONITORING METHODS AND SYSTEMS

1979 Accomplishements

During 1979, resources obligated totaled $4,251,600. Included in this total is $1,559,800 for salaries and expenses and $2,691,800 for extramural purposes. In 1979, the program:

- Registered fuels and fuel additives and prepared required reports.
- Completed pilot studies aimed at selecting the best instrumentation mix for the inhalable particulate network monitoring stations and provided data for decisions on instrument selection.
- Operated and expanded the inhalable particulate network to a total of 100 monitoring sites and issued semi-annual reports.
- Collected diesel emissions at the New York Port Authority Terminal; analyzed emissions and made the results available for a study of health effects.
- Prepared instrument calibration and standards on 100 compounds for use in organic screening analyses.
- Completed testing on design features of a differential absorbtion laser measurement technique and found the system adequate to measure oxidant transport.

1980 Program

In 1980, the Agency has allocated a total of $5,085,400 to this program, of which $2,257,100 is in the Salaries and Expenses appropriation and $2,828,300 is for extramural purposes in the Research and Development appropriation. The highlights of the program include:

- Continuation of the fuel and fuel additive registration program and updating the program through computerized techniques.
- Comparison of promising sampling techniques, procurement of appropriate equipment for approximately 160 sampling sites, performance of all needed physical and and chemical measurements and operation of data system for the inhalable particulate sampling network.
- Characterization and field testing of a large particle classifier and elucidation of particle size effects of measured total suspended particulates and inhalable particulates on the fugitive dust problem.

60-531 O - 80 - 28

- Exploration of avenues to measure specific compounds newly recognized as a high EPA priority and recommendation of methodologies for testing.

- Development of short-term monitoring response capability to provide timely response to Agency problems.

- Proposal of an inhalable particulate reference method and submission for promulgation in the Federal Register.

1980 Explanation of Change from Budget Estimate

The net increase of $435,400 results from several actions. An increase of $26,300 resulted from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $3,100 and $13,300, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $74,000 to this activity.

A reprogramming of $500,000 was made within the air media from air characterization and measurement methods development in order to comply with the OMB directive to place all funds for the National Bureau of Standards in one activity in each applicable media for ease of program review

1981 Plan

The Agency requests a total of $5,171,500 and 21 permanent workyears for this program, of which $2,223,500 are for the Salaries and Expenses appropriation and $2,948,000 are for extramural purposes in the Research and Development appropriation. This is an increase of $86,100 to accelerate implementation of the inhalable particulate network. During 1981 the program will:

- Conduct fuel and fuel additive registration and regulation program as required by the Clean Air Act Amendments.

- Operate and expand the inhalable particulate network to 300 stations based on program office needs.

- Report on feasibility of using multi-spectral scanner data for mapping and interpreting polluted air mass transport.

- Evaluate large particle size classifier to support a possible new ambient air particle standard.

- Develop capability to anlayze for non-volatile organic chemicals associated with particulate matter.

- Evaluate and modify ten methods for hazardous volatile organic compounds as identified and prioritized by the Office of Air Quality Planning and Standards.

- Provide a system for evaluating the health effects of diesel emission in ambient air.

QUALITY ASSURANCE

1979 Accomplishments

During 1979, obligations totaled $3,924,200. Included in this total was $1,736,800 for salaries and expenses and $2,187,400 for extramural purposes. During 1979, the program:

- Developed procedures for making new certified standards for both ambient air and stationary emissions measurements.

- Validated four methods for measuring ambient and stationary source emissions.

- Prepared sections for the Quality Assurance Handbook as new and improved methods and procedures became available.

- Completed blind performance audits among 100 to 150 laboratories semi-annually and issued audit reports on CY-1978 activities.

- Conducted workshops in all ten regions to assist States' implementation of quality assurance requirements of the Air Monitoring Regulations.

- Validated and promulgated ten equivalent monitoring methods.

- Maintained repository of quality control reference samples and materials to conduct national and special performance audits of ambient air and stationary source measurements.

1980 Program

In 1980, the Agency has allocated a total of $4,459,500 of which $2,039,500 is for the Salaries and Expenses appropriation and $2,420,000 is for extramural purposes under the Research and Development appropriation. Planned outputs include:

- Maintenance of repository of quality control reference samples and materials to conduct national and special performance audits of ambient air and stationary source measurements.

- Performance and systems audits of state and local air monitoring stations and national air monitoring stations including the inhalable particulate network.

- Portable auditing devices for sulfur dioxide, nitrogen disulfide and ozone that can be used at a field monitoring station to determine the accuracy of a continuous source monitor.

- Performance specifications and quality assurance practices for continuous source monitors (carbon monoxide and hydrogen sulfide).

- Standards methods for measuring national emissions standards for hazardous air pollutants in ambient air, e.g., mercury, beryllium, vinylchloride, benzene.

- Improvements in existing reference methods for total suspended particulates, sulfur dioxide and carbon monoxide.

- Audit material verification centers for regional and national use for systems and performance evaluations.

- Process applications for verification of equivalent methods.

- Assistance to regional quality assurance workshops for States.

1980 Explanation of Change from Budget Estimate

The net decrease of $441,500 results from several actions. An increase of $58,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,100. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $67,800 to this activity.

A transfer of $90,000 was made to the radiation media to quality assurance to reflect the support of a new program dealing with ionizing radiation quality assurance. A transfer of $250,000 was made to the drinking water media to quality assurance to correct an incorrect transfer of interdisciplinary funds to the air media in the budget request; the funds are now reprogrammed to the drinking water media to more accurately portray the intended purpose of the quality assurance program.

A transfer of $90,000 was made to the water quality media to monitoring methods and systems reflecting a shift of emphasis from quality assurance to monitoring methods and systems. The two programs are closely aligned; the monitoring methods program corrects deficiencies in candidate operational monitoring methods and systems programs, then the Quality Assurance program takes these corrected methods and validates their utility for operational monitoring of pollutants; this reprogramming represents a change in priority to emphasize correction of technical deficiencies in additional methods to respond to NPDES monitoring requirements.

1981 Plan

The Agency requests a total of $4,654,700 and 42 permanent workyears of which $2,224,700 is for the Salaries and Expenses appropriation and $2,430,000 is for extramural purposes under the Research and Development appropriation. This is an increase of $195,200 for additional quality assurance effort in monitoring emissions from stationary sources. During 1981 the program will:

- Validate six measurement methods.
- Perform systems audits for gaseous and inhalable particulate monitoring networks, national air monitoring stations, and State and local air monitoring stations.
- Perform on site evaluations of five stationary sources to assure that the measurements made are of known accuracy.
- Develop three new audit materials for stationary source measurements.
- Produce and distribute approximately 200 standard reference materials containing contaminants incorporated into biological tissue.
- Verify auditing devices used by State and local agencies.
- Maintain and upgrade repository of quality control reference samples and materials to conduct national and special performance audits of ambient air and stationary source measurements.
- Continue operation of standards laboratory.

TECHNICAL SUPPORT

1979 Accomplishments

During 1979, obligations totaled $3,234,200. Included in this total was $1,750,100 for salaries and expenses and $1,484,100 for extramural purposes. During 1979, the program:

- Provided analytical services to special monitoring networks such as the non-criteria pollutant monitoring network, National Fuels Surveillance Network in support of implementation plans and control strategy developments, e.g., data for nitrogen dioxide levels of large urban areas, ozone levels in national forests and organic levels at suspected major sources of emissions.

- Provided monitoring data to the Office of Enforcement on levels of phosphorous in gasoline and confirmatory analysis of lead in gasoline in support of the compliance program (Section 211 of the Clean Air Act).

- Provided monitoring data on oxidants in the Lake Tahoe Basin to Region IX and the States of Nevada and California for the purpose of developing control strategy models and modified state implementation plans. Vertical profiles were developed for ozone, nitrogen oxides, hydrocarbons and particulates at different sites in the Tahoe Basin.

- Operated the International Precipitation Laboratory as a joint effort for the World Meteorological Organization and the Collaborating Center for Environmental Pollution Control, a global international cooperative effort with the World Health Organization. Provided consultation and reports on air quality, including acid rain measurements, throughout the world.

1980 Program

In 1980, the Agency has allocated a total of $3,194,000 to this program of which $2,015,700 is for Salaries and Expenses and $1,178,300 is for extramural purposes under the Research and Development appropriation. The 1980 program will:

- Provide analytical services to special monitoring networks such as the Non-Criteria Pollution Monitoring Network, National Fuels Surveillance Network and the National Air Surveillance Network for use in support of state implementation plan monitoring.

- Operate the Air Pollution Background Network and expand operations to conform with national air monitoring sites.

- Collect data in four major Northeastern U.S. urban areas (Boston, New York, Baltimore, and Washington, D.C.) for the Office of Air Quality Planning and Standards to extend the data base on long range oxidant transport and to evaluate the impact of state implementation plans on regional air quality.

- Analyze gasoline samples for lead, phosphorous, sulfur and manganese for enforcement purposes (Support Section 211 of the Clean Air Act.)

- Analyze metals, asbestos and carcinogens in air in support of regions.

- Evaluate impact of alternative new source performance standards.

1980 Explanation of Change from Budget Estimate

The net decrease of $10,800 results from several actions. An increase of $53,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $6,300. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $57,700 to this activity.

1981 Program

The Agency requests a total of $2,954,700 and 31 permanent workyears for this program, of which $1,949,500 is for the Salaries and Expenses appropriation and $1,005,200 is for extramural purposes under the Research and Development appropriation, a decrease of $239,300 and 3 permanent workyears. This decrease represents a lower level of technical support required by the Office of Air Quality Planning and Standards monitoring program. The 1981 program will provide:

- Specialized services to the Office of Air Quality Planning and Standards for trends assessment including analysis of data from the national air monitoring sites for trace elements and non metal organics, and collection of oxidants concentration data in a major urban area to assess regional pollution patterns.

- Support for trend data collection from the Air Pollution Background Network. Procure, install and operate two additonal sites for the network.

- Source sampling, overhead monitoring and analytical support to Office of Air Quality Planning and Standards and the regions.

- A field study for the Office of Air Quality Planning and Standards to determine atmospheric loading of one hazardous pollutant for regulatory assessment.

- Collection and analysis of ambient and source air samples for asbestos.

- Support liaison with regional offices.

- Collection of data to assist Office of Air Quality Planning and Standards in review of state implementation plans.

AIR

Air Quality and Stationary Source Planning and Standards

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Emissions Standards and Technology Assessment:					
Salaries and Expenses	$3,598	$3,175	$3,681	$3,504	-$177
Abatement, Control and Compliance.....	11,600	26,800	25,845	16,948	-8,897
Energy and Pollutant Strategies Development:					
Salaries and Expenses	1,550	1,950	2,046	1,956	-90
Abatement, Control and Compliance.....	1,033	1,200	1,415	1,559	+144
State Program Guidelines and Regulations Development:					
Salaries and Expenses	2,838	1,550	2,998	3,238	+240
Abatement, Control and Compliance.....	2,287	2,800	1,406	1,711	+305
Total:					
Salaries and Expenses	7,986	6,675	8,725	8,698	-27
Abatement, Control and Compliance.....	14,920	30,800	28,666	20,218	-8,448
Grand Total.....	22,906	37,475	37,391	28,916	-8,475
Permanent Positions					
Emissions Standards and Technology Assessment	112	121	121	107	-14
Energy and Pollutant Strategies Development	44	41	44	44	...
State Program Guidelines and Regulations Development.....	87	90	90	93	+3
Total.....	243	252	255	244	-11
Full-time Equivalency					
Emissions Standards and Technology Assessment	126	131	126	115	-11
Energy Pollutant Strategies Development	50	49	53	50	-3
State Programs Guidelines and Regulations Development.....	101	100	100	101	+1
Total.....	277	280	279	266	-13

Budget Request

The Agency requests a total of $28,916,100 and 244 permanent workyears for 1981, a decrease of $8,475,400 and 11 permanent workyears from 1980. Included in this total is $8,698,500 for Salaries and Expenses and $20,217,600 for Abatement, Control and Compliance, with decreases of $27,200 and $8,448,200, respectively. These decreases primarily reflect reductions in extramural support for the setting of New Source Performance Standards.

Program Description

This subactivity includes the setting of emission standards for stationary sources and industry assessments and pollution control cost and other analyses which support the standard setting function. Also included are the establishment, review, and revision, if necessary, of ambient air quality standards; the assessment of potential pollutants; the development of pollutant control strategies, analytical tools and guidelines; the translation of control strategies into regulatory actions; and the assessment of the impact of regulatory actions on energy supplies.

Emissions Standards and Technology Assessments -- National emission standards for stationary sources are set under Sections 111 and 112 of the Clean Air Act. Section 111 mandates the Environmental Protection Agency to establish New Source Performance Standards. Section 112 authorizes National Emission Standards for Hazardous Air Pollutants.

New Source Performance Standards (NSPS) reflect the performance of the best demonstrated systems of emission reduction, considering cost and energy impact for specific processes or facilities in a source category. The analysis supporting the NSPS considers technical feasibility; cost; and economic, energy and environmental impacts. NSPS and other technology assessment activities are tied to the implementation of control strategies for air quality control regions which have not attained the National Ambient Air Quality Standards (NAAQS) and for the prevention of significant deterioration (PSD). The NSPS setting process results in providing useful data to State agencies in defining best available control technology, lowest achievable emission rates, and reasonbly available control technology. Presently, a total of 29 source categories are regulated by NSPS, with 69 additional projects underway.

National Emission Standards for Hazardous Air Pollutants (NESHAPS) have been set for asbestos, beryllium, mercury, and vinyl chloride. A fifth air pollutant, benzene, has been listed as a hazardous air pollutant, and the program to establish a NESHAPS is currently underway.

Energy and Pollutant Strategies Development -- The primary activities of this program element are: the development and revision, if necessary, of National Ambient Air Quality Standards (NAAQS); the general assessment of effectiveness of ongoing control programs; the development of appropriate recommendations as to the need for control of specific pollutants; and the analysis of energy impacts of control and of energy-related development on air quality.

State Programs Guidelines and Regulations Development -- The Clean Air Act Amendments of 1977 addressed the problem of widespread nonattainment of National Ambient Air Quality Standards, and provided extended time frames for attainment. These extended time frames were coupled with stringent requirements that must be met by the States in new implementation plans and by sources of air pollution in areas exceeding the standards. Since air pollution problems related to atmospheric transformation and long range transport affect large geographic areas, regional approaches are also required.

The Clean Air Act requirement for the revised State Implementation Plans and new control strategies requires development of policy, procedures and guidelines which can be utilized by States in implementing plan revisions. Analytical tools are prepared for State and local agencies to aid in control strategy reassessment and development. EPA activities supportive of States in control program development are described under the air quality strategies implementation subactivity.

EMISSION STANDARDS AND TECHNOLOGY ASSESSMENT

1979 Accomplishments

1979 resources included approximately $11,599,600 in contract support. These funds were used for engineering studies and other analyses needed to set New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) and the issuance of information on reasonably available control technology for review of State Implementation Plans (SIP). Also included was the continued detailed study of the synthetic organic chemcial manufacturing industry (SOCMI). New Source Performance Standards for aluminum plants, 111(d), glass plants, internal combustion engines, automobile surface coating and phosphate rock were proposed. The revised steam generator, gas turbine, and Kraft pulp mill 111(d) standards were promulgated. Thirty-six additional NSPS were underway in 1979. A priority list of source categories for which standards of performance will be developed under Section 111 of the Clean Air Act was published in the Federal Register. Five reviews of existing standards were completed. A screening to identify the fate of previously uninventoried organic solvents was completed. Control techniques documents were completed for petroleum storage, petroleum tank trucks and vapor recovery systems, perchloroethylene dry cleaning, synthesized pharmaceuticals, rubber tires and graphic arts. Work continued on twelve NESHAPs projects. Twenty-nine product reports, covering 63 percent of the synthetic organic chemical manufacturing industry process emissions, were completed in draft form.

1980 Program

In 1980, the Agency has allocated a total of $29,525,800 and 121 permanent workyears to this program, of which $3,681,000 is for Salaries and Expenses and $25,844,800 is for extramural purposes under the Abatement, Control and Compliance appropriation. These contract resources are being used to continue work related to setting standards for the synthetic organic chemical manufacturing industry and studies required for setting NSPS and NESHAPs. A total of $1.9 million is being transferred to EPA's Office of Research and Development for support in standards setting. Work is continuing on setting performance standards for all listed source categories. NSPS will be promulgated for automobile surface coating, hydrocarbon storage tank revision, stationary internal combustion engines, glass manufacturing and phosphate rock. Fifteen NSPS proposals are expected for metal furniture; organic solvent degreasing; graphic arts; paper coating; can coating; organic chemical fugitive emissions; coil coating; large appliance coating; non-metallic minerals; ammonium sulfate; sodium carbonate; steel foundry-electric arc furnaces, asphalt roofing; perchloroethylene dry cleaning; and lead battery manufacturing. Four reviews of existing standards will be completed, and eight reviews are underway with three notice of findings anticipated. A nine-volume technical report on the SOCMI will be drafted in 1980, including 39 product reports covering 80 percent of SOCMI process emissions. Control techniques documents for sulfur oxides, particulate matter, best available retrofit technology (BART), and primary aluminum 111(d) will be completed in 1980.

NESHAPs will be proposed for four benzene categories; including maleic anhydride, ethylbenzene/styrene, handling and storage, and refinery fugitive, and revision of Part 61 General Provisions. Work will continue on 14 NESHAP categories, and will be initiated on six.

1980 Explanation of Changes from Budget Estimate

The net decrease of $449,500 results from several actions. An increase of $137,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $8,300. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $310,300. A reprogramming of $170,000 was made within the air media to air energy and pollutant strategies development to provide for projected costs based on prior year experience. Finally, a reprogramming of $98,000 was made within the air media to air mobile sources standards and guidelines ($95,100) and to air mobile source preproduction compliance verification ($2,900) to support the fuel economy program.

1981 Plan

The Agency requests a total of $20,452,000 and 107 permanent workyears for this program, of which $3,504,000 is for the Salaries and Expenses appropriation and $16,948,000 is for the Abatement, Control and Compliance appropriation. Efforts will be made to complete the New Source Performance Standards (NSPS) schedule mandated by the Clean Air Act. Thirty-three projects will result in proposals and 17 in promulgations. Development of NSPS for synthetic fuel areas, such as direct and indirect coal liquefaction, high and low Btu coal gasification and shale oil, will be initiated. Seventeen NESHAPS projects will be continued from 1980, with 6 proposals and 9 promulgations expected. Seven existing standards will be reviewed. Technical support for SIP, best available control technology (BACT), and lowest achievable emissions rate (LAER) determinations, and for the review of construction permit applications for synthetic fuels will be provided.

ENERGY AND POLLUTANT STRATEGIES DEVELOPMENT

1979 Accomplishments

1979 resources included approximately $1,033,200 for contract support for pollutant screenings and control strategy evaluations, and economic analyses of control strategies and plans. The major focus in 1979 was in the areas of National Ambient Air Quality Standards (NAAQS) and hazardous air pollutants. The NAAQS for lead and the revised ozone standard were promulgated. Work continued on the carbon monoxide and nitrogen oxides standards. Assessment of the need to revise the NAAQS for particulates and SO_2 also continued. In the area of hazardous pollutants, the main accomplishment was the proposal of the Airborne Carcinogen Policy. Work continued on analytic-health risk assessments of arsenic, coke ovens, polycyclic organic matter, cadmium, acrylonitrile, ethylene/dichloride, perchloroethylene and vinylidene chloride as potential hazardous air pollutants under Section 112. Work was initiated to assess the exposure and resulting cancer risk of approximately 43 chemicals suspected of being present in the ambient air. Work continued on the report to Congress on visibility.

In the energy area, major updates were performed on the energy and environmental data base and a methodologies manual was prepared. The data collection and computer processing of data on power plant expansion was completed. This will support future analyses of prevention of significant deterioration (PSD) increment consumption, ability to meet NSPS and impact of EPA policies on utility growth. Work continued on the impact analysis for the utility boiler NSPS.

1980 Program

In 1980, the Agency has allocated a total of $3,461,300 and 44 permanent workyears to this program, of which $2,046,500 is for the Salaries and Expenses appropriation and $1,414,800 is for extramural purposes under the Abatement, Control and Compliance appropriation. The contracts will support the evaluation of the need to revise national ambient air quality standards, the analysis of the environmental, economic and regulatory impacts of the possible standards revisions, and the development of an improved risk assessment methodology.

The 1980 program plan calls for completion of review and appropriate revision to four ambient air quality standards. Reviews include carbon monoxide, nitrogen oxide, sulfur oxide and particulate matter. The report on visibility was submitted to Congress. Work will be initiated to determine the relationship between fine particulates/visibility and sulfates/acid rain. In the hazardous pollutants area, promulgation of the Airborne Carcinogen Policy is expected. Analytic-health risk assessments for polycyclic organic matter, cadmium, perchloroethylene, ethylene dichloride, acrylonitrile, vinylidene chloride, and arsenic, will be completed and listing, if necessary, will occur. Risk assessments will be completed for methyl-chloroform, Freon 113, methylene chloride and trichloroethylene.

In the energy area, the impact analysis for industrial boilers will be completed. The energy and environmental related data base for fossil fuel fired power plants will be maintained.

1980 Explanation of Changes from Budget Estimate

The net increase of $311,300 results from several actions. An increase of $71,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,800. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $6,200.

A reprogramming of $26,200 was made within the air media to air mobile source preproduction compliance verification to support the fuel economy program. A reprogramming of $170,000 was made within the air media from air emissions standards and technology assessment to provide for projected costs based on prior year experience. Finally, a reprogramming of $105,000 was made within the air media from air quality and emissions data analysis and program assessment to reflect a change in the accounting for resources which provide analyses in support of revisions to the ambient air quality standards.

1981 Plan

The Agency requests a total of $3,514,800 and 44 permanent workyears for this program, of which $1,956,200 is for the Salaries and Expenses appropriation and $1,558,600 is for the Abatement, Control and Compliance appropriation. This is a decrease of $90,300 and an increase of $143,800, respectively. The program will continue to emphasize review and revision of National Ambient Air Quality Standards (NAAQS) and the assessment of hazardous pollutants in 1981. Review and promulgation, if necessary, of revised NAAQS for particulate matter, sulfur oxide and nitrogen oxide will occur. Technical, health, energy and economic issues raised through litigation and public inquiry will be addressed regarding changes made to all revised NAAQS. The relationships between fine particulates/visibility and sulfates/acid rain will be identified, so that appropriate legislative or regulatory action can be recommended.

In the hazardous pollutants area, the Airborne Carcinogen Policy will be implemented. Health risk assessment/decision analysis methodology development will continue. Health risk assessments for two chemicals will be completed and a listing decision will be made. Risk and exposure assessments will be completed for three additional chemicals. Population exposure estimates will be completed for 15 chemicals. A study to determine the effectiveness of strategies and problems associated with implementation of strategies to control airborne asbestos will be initiated.

STATE PROGRAMS GUIDELINES AND REGULATIONS DEVELOPMENT

1979 Accomplishments

1979 resources included approximately $2,286,500 in contract support for the main areas of program emphasis: nonattainment and ozone SIPs; and New Source Review/Prevention of Significant Deterioration. The program emphasized review and approval of 1979 nonattainment SIPs, resolution of technical problems of attaining the ozone standard, and provision of direction and national consistency to New Source Review (NSR). Forty-nine States/territories required to submit nonattainment SIPs made official submittals in 1979. Extensive review and consultation with States and regional offices both preceded and followed these submittals. Follow-up actions on conditional approvals, the development of I/M and transportation control programs, review of regulations for sources of volatile organic chemical emissions, and analysis of particulates control constituted the major emphases of the SIP process.

The complexity of $HC/NO_x/O_3$ relationships creates major problems in designing control strategies for the attainment of the ozone standard, and severely impacts the States' ability to develop ozone State Implementation Plans (SIP). Particular emphasis was given in 1979 to removing the technical barriers in attaining the ozone standard. Planning was completed for the Northeast Corridor Study to be conducted in 1980 around five major urban areas: Philadelphia, Boston, New York, Baltimore, and Washington, D.C. Technical guidance on air quality models, emission factors and design of the field studies was developed as part of a multiyear program which is leading to the 1982 ozone SIP revisions.

The New Source Review (NSR) program, which directly affects private sector growth, was emphasized through the continuation of a program to ensure consistency of Best Available Control Technology/Lowest Achievable Emission Rate determinations. Progress in securing State assumption of the program for the prevention of significant deterioration has been delayed pending resolution of issues raised in the "Alabama Power Company et al vs. Costle" court ruling.

Stack height regulations and regional consistency regulations were proposed, and Part 51 regulations to account for the revised ozone NAAQS promulgated. Work continued on defining supplementary controls for smelters and the continuous monitoring regulations. Work was initiated on visibility regulations.

1980 Program

In 1980, the Agency has allocated a total of $4,404,400 and 90 permanent workyears, of which $2,998,200 is for Salaries and Expenses and $1,406,200 for Abatement, Control and Compliance. Contracts support the three main areas of program emphasis: 1979 nonattainment SIPs; 1982 ozone SIPs; and New Source Review/Prevention of Significant Deterioration.

Follow-up action on the conditional approvals, schedules and commitments of the 1979 nonattainment SIPs remain a major activity in 1980. Two additional

SIP submittals have been received. Development and implementation of I/M, development of transportation control measures (TCM), review of a second round of VOC regulations and analysis of urban fugitive particulates control are continuing.

Emphesis on removing the technical barriers in attaining the ozone standard continues in 1980 with the expected completion of additional guidance documents, such as volatile organic compounds (VOC) emissions, hydrocarbon (HC) species data required in support of ozone modeling, measuring transported ozone and precursors in urban areas, compilation of emission inventories for use with ozone models, and use of diffusion grid models. The Northeast Corridor Study is being managed and activities for regional scale ozone modeling have been initiated.

In the NSR/PSD area, the regulatory analysis and revised prevention of significant deterioration (PSD) regulations pursuant to "Alabama Power Company et al vs. Costle" are being completed. The clearinghouse of BACT/LAER determinations to ensure national consistency in New Source Review (NSR) is being maintained and managed. The national program to encourage State assumption of PSD is a major emphasis in 1980.

Regulations will be promulgated for stack heights and regional consistency. Proposals include visibility regulations for western power plants, supplementary controls for smelters, continuous emission monitoring, Part 51 regulations for revised NAAQS, and New Source Review.

1980 Explanation of Changes from Budget Estimate

The net increase of $54,400 results from several actions. An increase of $111,000 results from the costs of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to agency travel costs resulted in a decrease of $6,200. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $9,500. A reprogramming of $40,800 was made to the air mobile source preproduction compliance verification to support the fuel economy program.

1981 Plan

The Agency requests a total of $4,949,300 and 93 permanent workyears for this program, of which $3,238,300 is for the Salaries and Expenses apropriation and $1,711,000 is for the Abatement, Control and Compliance appropriation. This is an increase of $240,100 and $304,800, respectively. In 1981, the emphasis of the program will continue to be on the 1979 nonattainment SIPs, the 1982 ozone SIPs, and New Source Review/Prevention of Significant Deterioration. Follow-up on conditional approvals of 1979 nonattainment SIPs, and implementation of SIP schedules and commitments, will continue in 1981. Submittals of schedules for the implementation of transportation control measures are expected. Ongoing programs and studies of unconventional particulate sources will be continued. Studies of fugitive dust sources and control policy and "best management practices" of surface mining operations will be undertaken. The 18-month extensions for submittal of the revised total suspended particulates (TSP) SIPs will be due in early 1981 and these will require review and approval. Review and approval of lead SIP submittals will be completed.

The program of regulations, policy, and technical guidance to direct States and regional offices in preparation of the 1982 ozone SIPs will continue. A study of modeling effort for the Northeast Corridor will be managed and given technical direction and contract support. Emission factors for the ozone SIPs will be developed. A program to manage and ensure national consistency in New Source Review of current SIPs will be conducted.

National regulations to remedy visibility impairments from existing western power plants will be promulgated, and guidance provided on "plume blight" models. National regulations requiring plans for visibility around Class I areas will be proposed. These regulations, required by Section 169A, will address regional-scale visibility impairment in all mandatory Class I areas. In the eastern United States, this includes sulfate and other secondary aerosols. To support the regulations, an extensive regulatory analysis and regional-scale model will be developed.

Policy and technical guidance and regulatory support for any revised NAAQS SIP requirements will be provided. Congressionally required reports on air pollution control, emission factors for SIPs and toxic pollutants, and AP-42 updates will be provided.

AIR

Mobile Source Standards and Guidelines

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Mobile Source Standards and Guidelines:					
Salaries and Expenses	$3,608	$4,015	$4,325	$4,325	...
Abatement, Control and Compliance.....	6,658	1,800	1,727	2,059	+$332
Mobile Source In-Use Emission Assessment:					
Salaries and Expenses	237	3,020	211	176	-35
Abatement, Control and Compliance.....	1,930	...	2,584	2,369	-215
Emissions Testing, Analysis and Data Support for Standards and Guidelines:					
Salaries and Expenses	2,328	1,845	2,388	2,319	-69
Abatement, Control and Compliance.....	90	480	169	150	-19
Total:					
Salaries and Expenses	6,173	8,880	6,924	6,820	-104
Abatement, Control and Compliance.....	8,678	2,280	4,480	4,578	+98
Grand Total.....	14,851	11,160	11,404	11,398	-6
Permanent Positions					
Mobile Source Standards and Guidelines.....	101	110	114	108	-6
Mobile Source In-Use Emission Assessment..	7	6	7	6	-1
Emissions Testing, Analysis and Data Support for Standards and Guidelines.....	58	46	45	38	-7
Total.....	166	162	166	152	-14

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Full-time Equivalency					
Mobile Source Standards and Guidelines.....	116	137	148	135	-13
Mobile Source In-Use Emission Assessment..	7	19	10	8	-2
Emission Testing, Analysis and Data Support for Standards and Guidelines.....	67	45	55	47	-8
Total.....	190	201	213	190	-23

Budget Request

The Agency requests a total of $11,398,100 and 152 permanent workyears for 1981, a decrease of $5,900 and 14 permanent workyears from 1980. Included in this total is $6,820,600 for Salaries and Expenses and $4,577,500 for Abatement, Control and Compliance, with a decrease of $103,900 and an increase of $98,100 respectively. Although this decrease reflects completion of most Clean Air Act mandated actions, the increase in contracts reflects work on non-Federal Test Procedures (FTP) regulations.

Program Description

This subactivity involves the development of emission standards for mobile sources of air pollution -- passenger motor vehicles, heavy duty and light duty trucks, motorcycles, and aircraft -- and associated technical activities, such as testing, technology assessments, and emissions characterization. It also involves the development of technical procedures and guidelines applicable to the control of emissions for new and in-use vehicles. The Clean Air Act Amendments of 1977 set forth an extensive control program for mobile sources.

The development of standards for mobile sources requires a characterization and analysis process. An essential part of this process is the continuous assessment of new or improved technologies for potential changes in the nature of air pollutant emissions and other related performance factors, such as fuel economy. It also requires tests, monitoring mechanisms, or other strategies to ensure compliance with the standards. This subactivity includes the technical work underlying EPA efforts to assure the compliance of both new vehicles (e.g., certification) and in-use vehicles (e.g., inspection and maintenance).

Included in this effort are activities aimed at determining mobile source in-use emissions performance. The findings are used to calculate the average emissions that are to be expected from the in-use vehicle population, and to assess the effectiveness of mobile source emission control programs. The data obtained is used to calculate the emission reductions required for attainment and maintenance of National Ambient Air Quality Standards (NAAQS). Since testing began in 1973, the results have consistently indicated that between one-half and three-quarters of tested in-use vehicles fail to meet standards. Much of this failure appears to be attributable to basic maladjustments or disablements of vehicle engines or emission control systems.

As emission standards are imposed on additional classes of motor vehicles and the stringency of these standards increases, reassessments of the control technology used by the manufacturers, in terms of energy and nonregulated pollutants, are required. For example, emissions of currently unregulated pollutants for diesel-powered and catalyst-controlled vehicles are being assessed to determine if additional regulatory action is necessary to prevent the emission of potentially carcinogenic and toxic substances.

In addition, this program must take steps to implement certain provisions of the recently enacted National Energy Conservation Policy Act. These requirements include possible revisions of fuel economy testing procedures and the need for information about additional classes of vehicles. Also required is a report (in collaboration with the Departments of Transportation and Energy) to determine how realistic are current fuel economy estimates.

MOBILE SOURCE STANDARDS AND GUIDELINES

1979 Accomplishments

The 1979 resources included nearly $6.7 million for contracts. These contracts supported standard setting activities, emission characterization and assessments, inspection and maintenance (I/M) evaluations, and test procedure improvements.

Major regulatory activities included: promulgation of engine parameter adjustments and light duty truck emission standards and the proposal of standards for heavy duty vehicle hydrocarbon (HC) and carbon monoxide (CO) and light duty diesel particulates. Significant progress was made on rulemakings for the high altitude performance adjustments and emissions standards, short test for emission warranties, final aircraft regulation revisions, and heavy duty evaporative test procedures and standards.

Major nonregulatory accomplishments included: guidance on inspection and maintenance (I/M) program development, which consisted of regional seminars and numerous individualized follow-up meetings to assist States in obtaining the necessary legislation; preparation of legislative information packages on I/M; assessment and follow-up on the I/M portion of State Implementation Plans; public awareness activities; evaluation of I/M benefits, options and problems; and technical guidance development. Of the 29 states required to establish I/M, 22 states have passed legislation and efforts obtain legislation are continuing in the seven remaining states.

60-531 O - 80 - 29

During 1980, the States requiring an inspection and maintenance program must follow the implementation schedule included in the State Implementation Plan. This requires an EPA update of technical documentation developed in 1979, and the provision of area specific technical information. The remaining seven States needing authorizing legislation, as well as States reassessing existing legislation are being assisted. Assistance to States in program implementation includes inspection standards and calibration, quality assurance procedures, and technical review of facilities and testing support equipment. Analytical evaluations of program effectiveness and new technologies are being conducted. Short tests for NO_x control and improvements in current test procedures are being evaluated. The Portland study has been extended for a year to allow for the accumulation of data on the emissions impact over a longer time period. In addition, I/M programs for heavy duty vehicles will be initiated because of the large potential for emission reductions from these sources.

1980 Explanation of Changes from Budget Estimate

The net increase of $236,700 results from several actions. An increase of $148,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs resulted in a decrease of $6,600. A reprogramming of $95,100 was made within the air media from emissions standards and technology assessments for support of the fuel economy program.

1981 Plan

The Agency requests a total of $6,383,500 and 108 permanent workyears for this program, of which $4,325,000 is for the Salaries and Expenses appropriation and $2,058,500 for the Abatement, Control and Compliance appropriations. This is a slight decrease of $300 and an increase of $332,100, respectively.

Standard setting for light duty vehicles and trucks, heavy duty vehicles, and aircraft is scheduled for completion in 1981. Emission standards for heavy duty vehicles include the 75 percent reduction for nitrogen oxide (NO_x) and diesel particulates.

Promulgation of the light duty high altitude standard and allowable maintenance for light duty vehicles is expected in 1981. In addition, follow-up will be provided to the light duty truck, NO_x research, and aircraft rulemakings. Regulatory review of Subpart A is also expected to culminate in 1981. New regulatory action will be initiated in the area of non-FTP regulations, light duty vehicle durability, and certification of tamper resistant systems.

Support will continue to regional, state, and local efforts to implement I/M, as provided for in the SIP schedules. Development and improvement of the technical basis for I/M for current and prototype motor vehicles will be provided. Specific I/M problems which will be addressed are emission test technology improvements; determination of the validity of I/M benefits for light duty trucks; and initiation of evaluation of I/M at high altitudes, under cold weather conditions, and for heavy duty gasoline powered vehicles.

In the area of hazardous pollutants control, efforts will concentrate on implementing Section 202(a) of the Clean Air Act and on control of light duty diesels. Unregulated emissions from new prototype catalyst cars and alternate light duty engines will be characterized.

New fuel economy studies aimed at closing the gap between reported fuel economy and actual in-use experience will be initiated, and work will continue on improving test procedures. The annual trends analysis and report to Congress will also be prepared.

MOBILE SOURCE IN-USE EMISSION ASSESSMENT

1979 Accomplishments

1979 resources included $1.9 million for contracts for testing of in-use vehicle populations in order to provide updated emission factors. The development, improvement, dissemination, and use of emission factors for all classes of motor vehicles is essential to the implementation of the Clean Air Act mandated air quality planning process, especially as it relates to the 1982 SIPs for oxidants and carbon monoxide.

Work was initiated in 1979 to determine actual emissions from in-use light duty trucks, and emission factors testing for motorcycles was completed during 1979. Analytic projects related to development of emission factors for AP 42 and supportive analytic tools were provided.

1980 Program

In 1980, the Agency has allocated a total of $2,794,900 and 7 permanent workyears to this program, of which $210,900 is for Salaries and Expenses and $2,584,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

These resources are being used to continue work initiated in 1979 in testing in-use vehicles, determining their emissions under various conditions, and providing appropriate analyses for use in assessing program effectiveness and the need for both the State-based control programs and the national program. Work is continuing to determine emissions from light duty and heavy duty trucks. In-use emissions testing will continue through 1980 and beyond as an aid to heavy duty standard setting and as a mechanism for reevaluating already established standards.

1980 Explanation of Changes from Budget Estimate

The net decrease of $225,100 results from several actions. An increase of $9,000 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $300. A reprogramming of $3,800 was made within the air media to mobile source monitoring in-use emission assessment, for support of the fuel economy program. Finally, a reprogramming of $230,000 was made within the air media to emissions testing, analysis and data support due to a reassessment of the actual need for additional work by EPA on field laboratories on determining actual vehicle emissions and the validity of contractor work in this area.

1981 Plan

The Agency requests a total of $2,544,900 and 6 permanent workyears for this program, of which $175,900 is for the Salaries and Expenses appropriation and $2,369,000 for the Abatement, Control and Compliance appropriation. This represents a decrease of $35,000 and $215,000, respectively.

These resources will be used to determine in-use vehicle emission rates to support heavy duty standard setting and control technology development. Emission factors field testing for both light duty cars and trucks, and for heavy duty trucks will be continued. Data will be collected for the AP 42 update as well.

EMISSIONS TESTING ANALYSIS AND DATA SUPPORT FOR STANDARDS AND GUIDELINES

1979 Accomplishments

1979 resources included $90,400 in contracts for data processing and testing support. Activities involved baseline testing in connection with standard setting for heavy duty engines; support for the characterization of emissions from diesel vehicles; test procedure improvements in the areas of durability evaluation and road load determination; and analysis of data gathered in I/M assessment and emission factors programs.

1980 Program

In 1980, the Agency has allocated a total of $2,557,300 and 45 permanent workyears to this program, of which $2,388,300 is for Salaries and Expenses and $169,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

Current activities include baseline testing for a NO_x standard for heavy duty engines; support for test procedure improvements aimed at assuring the validity of the FTP; and efforts to charaterize emissions of new technology vehicles. Statistical and analytic support to I/M evaluation and for the AP 42 update is being provided.

1980 Explanation of Changes from Budget Estimate

The net increase of $232,300 results from several actions. An increase of $51,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to Agency ADP costs resulted in a decrease of $1,000 and $25,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $23,600. A reprogramming of $230,000 was made within the air media from air mobile sources monitoring in-use emissions assessment due to a reassessment of the actual need for additional work by EPA on field locations on determining actual vehicle emissions and the validity of contractor work in this area.

1981 Plan

The Agency requests a total of $2,469,700 and 38 permanent workyears for this program, of which $2,319,700 is for the Salaries and Expenses appropriation and $150,000 for the Abatement, Control and Compliance appropriation. This represents a decrease of $68,500 and $19,000, respectively.

These resources will be used to prepare the annual light duty vehicle technology report to Congress and to study emission control device costs. Technology assessment will concentrate on control of non-FTP emissions; administration of NO_x research regulations; analysis of reasons for the failure of light duty vehicle evaporative emission control systems; prototype engine/control system evaluation; diesel particulates control technology study; assessment of tamper resistant control systems; and analysis of the procedure for durability testing to be used in proposed rulemaking.

AIR

State Programs Resource Assistance

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Control Agency Resource Supplementation:					
Abatement, Control and Compliance.....	$94,294	$85,600	$82,800	$87,673	+$4,873
Training:					
Salaries and Expenses.....	315	350	399	419	+20
Abatement, Control and Compliance.....	1,116	711	1,148	661	-487
Grants for Planning Control of Carbon Monoxide and Photochemical Oxidants in Nonattainment Areas:					
Abatement, Control and Compliance....	9,700 a/	...	...	...	...
Total:					
Salaries and Expenses.....	315	350	399	419	+20
Abatement, Control and Compliance.....	105,110	86,311	83,948	88,334	+4,386
Grand Total.....	105,425	86,561	84,347	88,753	+4,406
Permanent Positions					
Control Agency Resource Supplementation.....	...	...	...	...	...
Training.....	5	6	6	6	...
Total.....	5	6	6	6	...
Full-time Equivalency					
Control Agency Resource Supplementation.....	36	65	65	65	...
Training.....	8	7	8	8	...
Total.....	44	72	73	73	...

a/ Funds transferred to Department of Transportation for obligation.

Budget Request

The Agency requests a total of $88,752,800 and 6 permanent workyears for 1981, an increase of $4,405,500 from 1980. Included in this total is $418,800 for the Salaries and Expenses appropriation and $88,334,000 for the Abatement, Control and Compliance appropriation, with an increase of $19,500 and $4,385,900, respectively. The increase requested for Abatement, Control and Compliance will provide assistance to State/local air pollution control agencies to carry out State Implementation Plan (SIP) development and implementation activities and initiate enforcement programs directed at tampering with automotive emission controls. There is no change in the 1981 workyear request from 1980.

Program Description

This subactivity encompasses the grant resources and assistance provided to support State and local governments and Indian tribes in implementing air pollution control programs, accomplishing national priorities and meeting requirements of the Clean Air Act. Support is provided in the form of grants to control agencies for the conduct of air pollution control planning, monitoring, and enforcement activities. Support is also provided in the form of contractor services to States, assignment of EPA personnel to State agencies, and training provided for the personnel of State and local agencies. State Implementation Plans submitted in 1979 for nonattainment areas as required by the Clean Air Act included regulations establishing emission limits for various air pollution sources and specific schedules for the adoption of other measures, including I/M programs and control of transportation sources where extensions of ambient air quality standard attainment dates beyond 1982 had been granted. In 1980, action to implement these schedules will be taken and assure reasonable further progress toward the attainment of ambient air quality standards. Emphasis is also being given to improving State/local air quality monitoring, and adoption by States of new source review programs, particularly for the prevention of significant deterioration, increased source inspections, expeditious enforcement actions, and the assessment of noncompliance penalties.

Grants to control agencies having a major role in developing and carrying out these SIP and other requirements, constitute the major form of EPA resource assistance. Grants assistance is supplemented by the assignment of personnel, training of State/local air pollution personnel, and the provision of services of contractors for specific tasks identified by the States, localities, or EPA as required for carrying out or revising the State Implementation Plan. Examples of this type of support include development of emission inventories, application of dispersion modeling techniques, special air quality monitoring, control strategy/regulation development and development of procedures necessary for implementation of mandatory I/M programs. These activities are covered in the following program elements.

Control Agency Resource Supplementation--Under the Clean Air Act, the States, in partnership with local agencies, are responsible for developing and implementing plans to attain and maintain ambient air quality standards. EPA partially funds the operating costs of these State and local agencies, under Section 105 of the Act.

Training--Resource assistance is further supplemented by the provision of training in specialized areas of air pollution control. Since July 1, 1976, the EPA Air Pollution Training Institute at Research Triangle Park, North Carolina, has been operated under contract. New courses are developed as needed, instruction manuals and materials are revised and updated, and laboratory courses at Research Triangle Park are conducted and manuals and instructional materials are provided to university field centers. A small EPA staff monitors the contract, maintains liaison with regional offices and State and local agencies, assesses changing training requirements, and ensures that those requirements are fulfilled. The EPA staff also works with regional university centers to develop State and local self-sufficiency in training by offering field courses closer to the agencies.

Grants for Planning Control of Carbon Monoxide and Photochemical Oxidants in Nonattainment Areas

The general objective of the planning assistance program is to assist urban areas where national ambient air quality standards have not been attained in developing comprehensive planning and growth management processes which permit both attainment of standards and economic growth. The grant will provide funding for planning agencies to participate in the development and implementation of State Implementation Plans for urban areas that have not attained the health protective primary standards for photochemical oxidants and/or carbon monoxide with particular emphasis on transportation control measures.

The air quality planning and analyses that will have to be carried out to implement the Clean Air Act supplement DOT funded programs which are generally related to integrating the various aspects of transportation systems into a cohesive whole that serves an area's transportation needs. The activities eligible for funding under the Section 175 grants emphasize concerns with the air quality implication of proposed transportation system changes and are intended to encourage the undertaking of transportation measures which have a beneficial impact on air quality. These include:

- Development and evaluation of long range alternative growth and transportation system strategies.
- Development and evaluation of short range transportation improvement packages-including contingency packages to best insure timely attainment of standards.
- A tightly managed transportation planning and programming process geared toward a regulatory product that best insures implementation of key measures.
- New planning and evaluation activities that stress not only detailed air quality assessment, but also extensive consultation activities (with other agencies, interest groups, elected officials) needed for coordination, support and timely implementation of strategies.

Control Agency Resource Supplementation

1979 Accomplishments

The 1979 resources included $94,293,700 in extramural funds. The major effort of State/local control agencies was directed toward submission of revised implementation plans for nonattainment areas as required by the Clean Air Act (CAA) Amendments of 1977. Fifty-one States/territories were required to submit implementation plans. In monitoring, States took major actions to acquire appropriate monitoring equipment and establish quality control procedures as required by EPA regulations and to upgrade monitoring sites and data quality. Development of adequate data bases for submission of 1982 SIPs, was begun. Twenty-five major cities implemented a system for reporting a daily index of air quality, as required by the CAA. Forty-one States adopted regulations for the control of volatile organic compounds (VOC) from stationary sources. Twelve States enacted legislation to implement an I/M program or committed to implement an I/M program based on existing legal authority. Enforcement efforts by the States were accelerated with particular emphasis on major source compliance.

1980 Program

In 1980, the Agency was allocated $82,800,000 in the Abatement, Control and Compliance appropriation. State implementation plans from all States, as required by the CAA, will have been submitted by early 1980 and EPA review/approval actions initiated. In most cases these plans will require extensive further development follow-up action by the States, particularly with respect to Inspection/Maintenance (I/M), transportation control measures (TCM), control of volatile organic compounds (VOC) and analyses/measures relating to control of non-traditional sources of particulate emissions.

In 1980-1981, 30 States are expected to submit schedules for TCM. Forty-one States are expected to be developing lead SIPs. Thirty-five States have conditional approvals of various kinds requiring specific follow up actions. Twenty-nine States will begin I/M implementation actions. Enforcement related actions will focus on new source review, noncompliance penalty implementation, compliance inspections and enforcement actions directed at major sources, and the enforcement of permits issued under prevention of significant deterioration (PSD) provisions of the CAA. The States will continue to implement the provisions of the monitoring regulations promulgated in 1979 with particular emphasis on the establishment of a national air monitoring station (NAMS) network with appropriate quality assurance procedures.

1980 Explanation of Change from Budget Estimate

The net decrease of $2,300,000 results from congressional action.

1981 Plan

The Agency requests a total of $87,673,000 for this program. In addition to activities to carry out approved State implementation plans, work will be done in preparation for submittal in 1982 of ozone and carbon monoxide SIPs in the 25 States granted attainment date extensions. Full implementation of I/M programs will be initiated and schedules for TCM will continue to be developed, with 30 state submittals expected. All NAMS sites are expected to be operational and an intensification of effort to upgrade additional State/local monitoring stations (SLAMS) will be underway. Formal submittal of lead SIPs by 41 States is expected. In enforcement, continued emphasis will be placed on achieving major source compliance and in selected states an antitampering program will be initiated. States will have assumed almost complete responsibility for PSD New Source Review.

Training

1979 Accomplishments

The 1979 resources included $1,116,200 in extramural funds. Eighty-seven courses were conducted in 21 different subjects at Research Triangle Park and 41 locations in the field for 2,290 trainees (representing 10,006 trainee days). One course was completely revised, revision was begun on 15 other courses, and development work was begun on two new courses. Two new video-instructional courses were completed, and work was begun on development of two self-instructional courses. Five self-instructional courses were administered to 236 trainees, and technical assistance was provided to State and local agencies and universities (122 requests). In the area of academic training, graduate level traineeships were provided for 17 control agency employees, and for 21 other persons at eight schools. Eighty-one control agency employees and 15 other persons were supported with fellowships for full and part-time study, and 60 students were supported doing graduate study at the Environmental Management Institute at the University of Southern California. In the area of training related to motor vehicle inspection/maintenance, under EPA Grants to Colorado State University, two new

courses were developed and one course was revised. Three workshops were conducted for teachers and 31 workshops conducted for 341 people including legislators, environmental agency staff, and others involved in I/M program development.

1980 Program

In 1980, the Agency has allocated a total of $1,547,300 and 6 permanent workyears. Eighty short-term training courses will be offered in 19 subjects at Research Triangle Park and 41 field locations, for 2,100 trainees (representing 9,100 trainee days). Revision will be completed on 16 courses, 3 new courses will be developed, and development begun on 2 others. Five self-instructional courses will be administered to 240 trainees and eight area training centers will be supported. Graduate level traineeships will be provided for 23 control agency employees and 20 other persons at eight schools. Twenty-six control agency employees will be supported doing graduate study at the Environmental Management Institute at the University of Southern California. In the area of training relating to motor vehicle inspection/maintenance, under EPA grants to Colorado State University, two new training courses for investigators will be developed and five training courses will be conducted for vocational teachers.

1980 Explanation of Change from Budget Estimate

The net increase of $486,300 results from several actions. An increase of $12,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $700. A congressional increase of $1.5 million to academic training resulted in an increase of $480,000 to this activity. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $5,500 to this activity.

1981 Plan

The Agency requests a total of $1,079,800 and 6 permanent workyears for this program, of which $418,800 is for Salaries and Expenses and $661,000 is for Abatement, Control and Compliance. This is an increase of $19,600 and a decrease of $487,100, respectively. Grants for academic training have been eliminated. Seventy-two training courses will be conducted in 20 subjects for 1,900 trainees (representing 8,200 trainee days). Three hundred trainees will complete self-instructional courses, three new courses will be developed, and five courses will be revised. Eight workshops will be conducted with 250 workshop attendees. Sixteen control agency employees and nine other students will be supported by graduate level traineeships.

Grants for Planning for Control of Carbon Monoxide and Photochemical Oxidants in Nonattainment Areas

1979 Accomplishments

In 1979, $48,500,000 was transferred from this subactivity, to the Department of Transportation for the purpose of awarding grants to organizations of local elected officials in areas where local transportation related sources contribute materially to air quality standard violations for carbon monoxide and oxidants. Obligations against this transfer amounted to $9,699,900. In 1979, EPA funded approximately 70 cities in their effort to develop work plans for new and effective transportation systems. These funds supplement transportation planning funds provided by the Department of Transportation to the same agencies. The urbanized areas designated nonattainment for oxidants and/or carbon monoxide must follow a continuous, phased implementation of transportation control measures. Air quality-related transportation measures must be included in the Transportation Improvement Program (TIP) and the Annual Element required by the Department of Transportation.

Specifically, the Metropolitan Planning Organizations (MPO's) must develop appropriate data bases on ambient air quality and emissions, as well as assess the impacts on air quality of changes in transportation systems. As a result of these assessments, control measures must be adopted as formal regulatory provisions of SIP's.

1980 Program

In 1980, the funds remaining from the $46,500,000 transferred to DOT in 1979 for this purpose will be utilized by DOT for grants to Metropolitan Planning Agencies. Funds appropriated under this program element in 1979 will also be used to assist urban areas in developing 1982 ozone SIPs.

1981 Plan

No additional funding is requested.

AIR

Air Quality Strategies Implementation

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Air Quality Management Implementation:					
Salaries and Expenses..	$8,564	$8,710	$9,066	$8,655	-$411
Abatement, Control and Compliance.....	333	...	253	221	-32
Grand Total.....	8,897	8,710	9,319	8,876	-443
Permanent Positions					
Air Quality Management Implementation.....	314	324	317	288	-29
Full-time Equivalency					
Air Quality Management Implementation.....	340	357	344	313	-31

Budget Request

The Agency requests a total of $8,875,700 and 288 permanent workyears, a decrease of $443,500 and 29 permanent workyears from 1980. Included in this total is $8,654,900 for Salaries and Expenses and $220,800 for the Abatement, Control and Compliance appropriation, a decrease of $411,300 and $32,200, respectively. These reductions reflect anticipated State assumption of the PSD permit issuance program.

Program Description

This subactivity includes the provision by the regional offices of policy direction and guidance to States in the development of strategies for the attainment and maintenance of National Ambient Air Quality Standards and the prevention of significant deterioration. This involves the review of State developed strategies for consistency with the requirements of the Clean Air Act and EPA regulations, and the tracking of State progress in meeting the schedules set forth in these strategies, including making assessments of whether States are making reasonable further progress toward attaining standards by the statutory deadlines.

It also includes the development by EPA of strategies for specific geographical areas where States do not prepare adequate plans for attaining and maintaining standards; the incorporation of these control strategies into appropriate Federal regulatory action; and the interaction with State and local governments in implementing these strategies. Other major activities include the audit of State and local control agencies for adherence to Federal requirements and guidelines; consultation with State and local control agencies on specific air pollution control problems; review of the impact of new sources of air pollution; and the management of State and local agency grant resources and their allocation.

Air Quality Management Implementation - The Clean Air Act Amendments of 1977 specify stringent criteria for preparing State Implementation Plans (SIP) and substantially increase the number of plans required. Therefore, major efforts are required for the review and approval of the SIPs and for the promulgation of plans where State plans are inadequate.

Major efforts are also necessary to provide guidance to States in meeting the commitments made in SIP submissions which are essential to the attainment of standards, including establishment of mandatory automotive inspection/maintenance programs, regulation of transportation sources, control of urban fugitive dust and additional stationary source controls.

Major EPA regional office activity is also required to guide States in developing the necessary data base and strategy demonstrations which are required for the 1982 SIP submission for ozone and carbon monoxide, where an extension of time for attainment under the Act has been granted. This includes extensive involvement with local elected officials, metropolitan planning organizations, State transportation departments, and the State air pollution control agencies, and will require major EPA regional office coodination and participation efforts. EPA regions must participate actively in the local planning processes to assure that air quality considerations are taken into account in a meaningful way and that the local plans, particularly the transportation elements, are integrated into the SIP as enforceable measures in a time frame consistent with the requirements of the Act. These activities are expected to extend through 1982. Similar activities will have to be carried out to develop and review SIPs for lead and for other anticipated revisions to standards as required by the Act.

The 1977 Amendments also impose major new requirements on the process for reviewing new sources of pollution to assure that they will not cause deterioration of air quality in areas attaining the National Ambient Air Quality Standards (NAAQS), or that will not delay attainment or aggravate current problems in areas not yet attaining the NAAQS. The determination of best available emission control technology, analysis of air quality impact, selective source siting, and emission trade-offs analyses are all integral to this review process and will require EPA regional office resources. State program assistance increases over the past three years are supporting State assumption of these activities.

AIR QUALITY MANAGEMENT IMPLEMENTATION

1979 Accomplishments

1979 resources included $332,500 in contract funds to support purchase of computer time to do modeling to evaluate impact of new sources on the PSD increment and attainment strategies in the SIPs. Public hearings for PSD reviews and EPA promulgation of 1979 SIP actions were also covered. The 1979 program was directed toward review and approval of the nonattainment SIPs submitted by States. The 41 notices of proposed rulemakings were published establishing a schedule of follow-up actions that the States must take to achieve retain an approved status.

The regions provided guidance to State in the development and review of TSP SIPs for some 397 nonattainment areas. Special analyses of urban fugitive particulate matter sources and control were initiated. A further major activity was the engineering and air quality review of some 1,500 new sources under the PSD regulations.

1980 Program

In 1980, the Agency has allocated a total of $9,319,200 and 317 permanent workyears to this program, of which $9,066,200 is for the Salaries and Expenses appropriation and $253,000 is for extramural purposes under the Abatement, Control and Compliance appropriation. The major efforts being undertaken with these resources include the tracking, overview, and guidance of State efforts to complete development and begin to implement the various schedules contained in the 1979 SIP. This includes securing enabling legislation for mandatory I/M programs; enacting regulations for control of additional major source categories of volatile organic emissions; developing procedures and purchasing equipment to establish I/M programs; analyzing transportation control measures potential and demonstration of selected measures; and analyzing and

control measures potential and demonstration of selected measures; and analyzing and developing measures for control of urban fugitive dust. Also included is the annual review of State progress in meeting the reasonable further progress (RFP) requirement of the 1977 Amendments to the Clean Air Act. The meeting of these requirements is essential to assure attainment of air quality standards.

In 1980, the EPA regional offices are also providing guidance and are reviewing state lead SIP submissions, and the development of the required 1982 SIPs in nonattainment areas for ozone and carbon monoxide, where EPA has approved a time extension for attainment of standards. This effort focuses upon the development of new emission inventories and other data bases and provides a more sophisticated demonstration of air quality standard attainment.

Other activities include the overview of all existing State new source review programs, including the audit of selected State reviews to insure consistency with the requirements of the Clean Air Act and EPA regulations. EPA regions are actively assisting States in developing programs for the prevention of significant deterioration where such programs were not established in 1979.

1980 Explanation of Changes from Budget Estimate

The net increase of $609,100 results from several actions. An increase of $397,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $51,400 and $35,900, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $318,000 to this activity.

Regional reprogrammings were made in order to support costs based on 1979 expenditures from ambient water quality monitoring, $25,000; to water quality state programs regulations and guidelines, $80,100; from noise program implementation, $56,400; from drinking water underground injection control program, $65,800; to ambient air quality monitoring, $77,000; and to water quality municipal waste treatment construction, $9,000.

1981 Plan

The Agency requests a total of $8,875,700 and 288 permanent workyears for this program, of which $8,654,900 is for the Salaries and Expenses appropriation and $220,800 is for the Abatement, Control and Compliance appropriation. EPA regional offices will maintain the 1980 emphasis on follow-up and implementation of the 1979 nonattainment SIPs, development of the 1982 ozone SIPs, and State assumption of responsibility for New Source Review/Prevention of Significant Deterioration. Regional offices will follow up on SIP commitments and schedules for I/M/, TCM, and fugitive dust programs. States requiring additional controls on emitters of volatile organics (VOC) will be assisted in developing consistent regulations. States will be assisted in reviewing applications for use of the "bubble" concept. A method of assessing emission limitations that covers the emissions from the entire facility.

Regions will continue to assist States in completing the 1982 ozone and CO SIPs. In 1981, many I/M programs will be completing the pilot or demonstration phases, and decisions will be made on full-scale implementation. Transportation control measures will be selected and programs for implementation will be presented to the public and appropriate agencies for support and implementation. EPA involvement and leadership is critical in these areas.

The management of NSR is especially important in 1981, as many States will just have assumed responsibility for the program. State/local actions which may adversely impact on ambient air quality standards under Sections 109(j) of the Federal Highway Act and 176(c) of the Clean Air Act will be reviewed for consistency with SIPs.

Air

Mobile Source Preproduction Compliance Verification

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Preproduction Compliance Verification:					
Salaries and Expenses....	$1,878	$1,530	$1,680	$2,128	+$448
Abatement, Control Compliance.....	721	900	704	754	+50
Emissions Testing, Analysis and Data Support for Preproduction Compliance Verification:					
Salaries and Expenses....	2,232	900	1,270	1,534	+264
Abatement, Control and Compliance.....	1,462	400	218	168	-50
Total:					
Salaries and Expenses....	4,110	2,430	2,950	3,662	+712
Abatement, Control and Compliance.....	2,183	1,300	922	922	...
Grand Total.....	6,293	3,730	3,872	4,584	+712
Permanent Positions					
Preproduction Compliance Verification.....	51	50	52	55	+3
Emissions Testing, Analysis and Data Support for Preproduction Compliance Verification.....	6	21	20	29	+9
Total.....	57	71	72	84	+12
Full-time Equivalency					
Preproduction Compliance Verification.....	70	59	61	65	+4
Emission Testing, Analysis and Data Support for Preproduction Compliance Verification.....	24	28	41	42	+1
Total.....	94	87	102	107	+5

Budget Request

The Agency requests a total of $4,584,500 and 84 permanent workyears for 1981, an increase of $712,200 and 12 permanent workyears from 1980. Included in this total is $3,662,600 for Salaries and Expenses and $922,000 for Abatement, Control and Compliance, an increase of $712,200 and no change, respectively. Increases in this subactivity provide for a greater level of fuel economy confirmatory testing.

Program Description

This subactivity includes: (1) engineering review and confirmatory testing of prototype motor vehicles and engines in order to certify their compliance with emission standards; (2) semiannual publication of fuel economy guides and calculation of corporate average fuel economy values; and (3) related technical and data processing support.

EPA is currently developing improvements in its certification program. In previous years, motor vehicle manufacturers' complete lines of vehicles and engines have undergone the full certification process. However, the potential air quality impact of improperly certifying a vehicle is not equal for all manufacturers or engine families. Rather, the air quality risk is related to the degree of failure and the number of vehicles sold. Consequently, EPA has undertaken reforms to this program which will reduce the paperwork, reporting, and testing burdens on the automobile, truck, and motorcycle industries, while at the same time improving the control of emissions from motor vehicles.

The certification process involves the submission of applications to EPA by the manufacturers; the development of emissions performance information by manufacturers or EPA on the basis of prototype vehicle testing; and the review of this data by EPA for the purpose of determining compliance with standards. Certification testing also results in the generation of vehicle fuel economy data. These data are the foundation of EPA's fuel economy public information activities (carried out jointly with the Department of Energy), and are used to support the Department of Transportation's program of compliance with fuel economy standards as required by the Energy Policy and Conservation Act.

MOBILE SOURCE PREPRODUCTION COMPLIANCE VERIFICATION

1979 Accomplishments

1979 resources included $721,200 in contract funds for data processing and analytical support. Major contract efforts were focused on: development of a computer assisted engineering and emissions data review program (which allows the major motor vehicle manufacturers to submit information on computer compatible media); services aimed at reducing the time it takes to process applications for certification; and a package of nontechnical support.

The 1979 certification process took into account new stricter standards for hydrocarbons (HC) and carbon monoxide (CO) for model year 1980 light duty vehicles. Technological changes in the automobile industry were addressed through the development of criteria for engineering review of vehicles using electronic control systems. This was carried out while the certification process itself was gradually revised to improve its effectiveness and reduce its burden.

The heavy duty engine program consisted of engineering review of the manufacturers' design information on new engines to identify engine configurations for durability testing and potentially high polluting engine configurations for emission data testing. An abbreviated review program was conducted for the motorcycle manufacturers.

EPA continued to support the Department of Transportation's fuel economy regulatory program in 1979. Highway fuel economy tests were run on vehicles tested for emissions compliance to assure the validity of manufacturers' data. City fuel economy tests were also run on vehicles, and review of manufacturer submitted data for engine classes not reviewed for emissions control purposes was performed.

1980 Program

In 1980, the Agency has allocated a total of $2,384,300 and 52 permanent workyears to this program, of which $1,680,500 is for Salaries and Expenses and $704,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

Light duty vehicles with lower air quality impact are subject to an abbreviated review, while the complete engineering review and testing process is being performed on those engine families with the highest sales and greatest potential air quality impact. Criteria for the review of vehicles using electronic control systems, which underwent further refinement in 1979, is being implemented in 1980, as are parameter adjustment regulations (aimed at reducing the adjustability of idle mixture and initial choke settings). Control of hazardous emissions by manufacturers is being encouraged through a program of engineering review and testing. 1980 also marks the onset of new light duty vehicle standards for carbon monoxide, oxides of nitrogen, and evaporate hydrocarbons, as well as a control program for vehicles to which high altitude standards apply.

For heavy duty engines, the 1980 program continues the abbreviated review process implemented in 1979. Manufacturer's design information on new engines is being reviewed to identify engine configurations for emissions data testing. Abbreviated reviews are also being conducted for the motorcycle manufacturers.

Support to the Department of Transporation's fuel economy program is continuing at a greater level of effort. A high priority has been placed on improvements aimed at assuring more reliable fuel economy values and a significantly increased level of testing in support of compliance.

1980 Explanation of Changes from Budget Estimate

The net decrease of $45,500 results from several actions. An increase of $63,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,100. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $200,000 to this activity. Finally, a reprogramming of $73,700 was made within the air media -- from air emission standards and technology assessment ($2,900); from air energy and pollutant strategy development ($26,200); from air state program guidelines and regulations development ($40,800); and from air mobile source monitoring in-use emission assessment ($3,800)-- and a reprogramming of $18,500 was made from the Office of Air, Noise and Radiation program management activity, for support of the fuel economy program.

1981 Plan

The Agency requests a total of $2,382,300 and 55 permanent workyears for this program, of which $2,128,300 is for the Salaries and Expenses appropriation and $754,000 for the Abatement, Control and Compliance appropriation. This is an increase of $447,800 and $50,000, respectively.

Resources will be concentrated on full certification review of classes of light duty vehicles and trucks which represent the greatest potential for air quality improvement, while the abbreviated review process will continue for heavy duty trucks and motorcycles.

Selective audits of manufacturers and in-house confirmatory testing will be increased from 1980, as will work related to the Federal Government's fuel economy standards compliance, fuel economy label, and gas mileage guide programs. The increased level of confirmatory testing for fuel economy purposes is part of EPA's effort to improve the validity of manufacturers' fuel economy values.

Regulatory development activities will include improved implementation of current certification regulations; development of new regulations and procedures to implement modifications mandated by the Clean Air Act; and revisions of the certification program which improve technical accuracy.

EMISSION TESTING ANALYSIS AND DATA SUPPORT FOR PREPRODUCTION COMPLIANCE VERIFICATION

1979 Accomplishments

1979 resources included nearly $1.5 million in contract funds for support of emission testing and data processing activities. These resources supported laboratory and data processing activities associated with emission certification and fuel economy compliance.

1980 Program

In 1980, the Agency has allocated a total of $1,487,900 and 20 permanent workyears to this program of which $1,269,900 is for Salaries and Expenses and $218,000 is for extramural purposes under the Abatement, Control and Compliance appropriation. These resources support operations of the emissions testing laboratory and data processing activities. Fuel economy review and analysis is being facilitated at an intensified level by progress made in 1979 on computerizing the process.

1980 Explanation of Changes from Budget Estimate

The net increase of $187,900 results from several actions. An increase of $32,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $11,500. Finally, a reprogramming of $166,500 from other media -- from radiation environmental standards ($37,000), from radiation monitoring and analysis ($18,500), from radiation technology assessment ($18,500), from noise strategies implementation ($74,000), and from the Office of Air, Noise and Radiation program management activity ($18,500) will be used to support the fuel economy program.

1981 Plan

The Agency requests a total of $1,702,300 and 29 permanent workyears for this program, of which $1,534,300 is for the Salaries and Expenses appropriation and $168,000 for the Abatement, Control and Compliance appropriation. This represents an increase of $264,400 and a decrease of $50,000, respectively.

These resources provide laboratory correlation support for certification, systems/program analysis, computer programming, and related administrative support to the emissions testing laboratory.

Fuel economy review and analysis will result in calculation of preliminary corporate average fuel economy and corporate average fuel economy (PCAFE/CAFE) values and other fuel economy information.

60-531 O - 80 - 30

Air

Trends Monitoring and Progress Assessment

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Appropriation					
Ambient Air Quality Monitoring:					
Salaries and Expenses.....	$2,499	$2,188	$2,489	$2,387	-$102
Abatement, Control and Compliance.....	109	21	92	320	+228
Air Quality and Emissions Data Analysis and Progress Assessment:					
Salaries and Expenses.....	1,359	1,401	1,633	1,496	-137
Abatement, Control and Compliance.....	660	620	290	290	...
Total:					
Salaries and Expenses.....	3,858	3,589	4,122	3,883	-239
Abatement, Control and Compliance.....	769	641	382	610	+228
Grand Total.....	4,627	4,230	4,504	4,493	-11
Permanent Positions					
Ambient Air Quality Monitoring.	77	85	84	82	-2
Air Quality and Emissions Data Analysis and Progress Assessment.....	38	43	38	34	-4
Total.....	115	128	122	116	-6
Full-time Equivalency					
Ambient Air Quality Monitoring.	90	89	89	89	...
Air Quality and Emissions Data Analysis and Progress Assessment.....	47	50	43	39	-4
Total.....	137	139	132	128	-4

Budget Request

The Agency requests a total of $4,492,800 and 116 permanent workyears, a decrease of $11,000 and 6 permanent workyears from 1980. Included in this total is $3,882,900 for the Salaries and Expenses appropriation, and $609,900 for the Abatement, Control and Compliance appropriation. The decrease in Salaries and Expenses of $239,000 reflects a shift in headquarters and regional office workload. The increase of $228,000 in Abatement, Control and Compliance is due to increase emphasis on completing Regional Environmental Profiles.

Program Description

This subactivity covers work related to monitoring ambient air quality levels and air pollution source emission levels, determining and analyzing their relationships, and assessing the progress made toward the attainment of environmental goals.

Ambient Air Quality Monitoring - Activity in this program includes EPA's ambient air monitoring operations carried out by regional offices, associated laboratory support, and special field monitoring studies. Most ambient air quality and source monitoring is carried out by State and local agencies. The regional offices oversee State monitoring efforts, help develop and implement State quality control programs, and evaluate data submitted to EPA by the States. Determination of attainment or nonattainment of ambient air quality standards is made on the basis of these data. Monitoring activities and data analyses are expected to increase due to the need to evaluate progress in nonattainment areas toward attainment of ambient air quality standards. In addition to the monitoring for criteria pollutants required by the State Implementation Plans (SIP), a limited program to acquire available State data on currently unregulated pollutants is also being carried out. These data aid in understanding relationships between sources and receptors of these pollutants, and are used for making long and short term trends analyses to support decisions for control.

This program also includes efforts directed at improving State and local monitoring programs. The regions are actively involved in overseeing State/local implementation of the comprehensive regulations for air quality surveillance and reporting promulgated in 1979. Adherence to these criteria should promote uniformity of siting, and produce ambient data of higher quality.

Air Quality Emissions Data Analysis and Progress Assessments - Major activities include the preparation of the annual and special reports on air quality and emission trends, special analyses on the status of attainment of the National Ambient Air Quality Standards (NAAQS), development and dissemination of new or improved techniques for data analysis, and collection and analysis of emission data. Also included are the development, update, and maintenance of systems for storage and retrieval of air quality and emissions data. The data systems are composed mainly of an inventory of point sources and their emissions, and software and procedures for data storage and dissemination. Support is provided to the 30 State and local agencies using the Comprehensive Data Handling System to guarantee efficient and timely submission of data to EPA.

AMBIENT AIR QUALITY MONITORING

1979 Accomplishments

1979 resources included $109,400 in contract funds for quality assurance audits and equipment maintenance. The major thrust of the 1979 program was to evaluate a substantial portion of the monitoring networks and individual stations operated or planned by State/local agencies. Regional staff played a key role in designating the State/local stations to be included in the National Air Monitoring Stations (NAMS) and State and Local Air Monitoring Stations (SLAMS) networks. Schedules were developed to ensure that these networks be fully operational and in compliance with all EPA criteria. The submission and validation of data from the States continued. The quality assurance program received increased attention, with special emphasis on the auditing of individual sites and State laboratories. Regional staffs provided technical overview of the development of plans for expanded State/local quality assurance programs to be implemented in 1980 and 1981.

In the area of daily reporting of air quality, regional offices surveyed the use of the PSI, and found that the index is used in at least 71 urban areas. Of the 46 urban areas with populations above 500,000, 37 are now or soon will be using the index. EPA staff also continued its involvement in special monitoring studies for noncriteria pollutants both in quality assurance and sample collection.

1980 Program

The development of air quality data and field monitoring operations is allocated $2,581,000 and 84 permanent workyears, of which $2,489,000 is for Salaries and Expenses and $92,000 is for extramural costs in the Abatement, Control and Compliance appropriation. Contracts support quality assurance audits and equipment maintenance. Fifteen-hundred (1,500) site evaluations of National Air Monitoring Stations (NAMS) and State and Local Air Monitoring Stations (SLAMS) will be performed, with emphasis on sites in major urban areas not attaining standards. All State networks will be reviewed for adequacy in terms of the number of sites and their geographical distribution. Regions are performing detailed reviews of State quality assurance programs, including on-site audits of all State laboratories. All regional laboratories are participating in EPA's Office of Research and Development's national performance surveys. Involvement in special monitoring studies is continuing, with emphasis on management of data collection for the 1982 ozone SIPs. Coordination of daily reporting of air quality in urban areas with populations greater than 500,000 is continuing.

1980 Explanation of Change from Budget Estimate

The net increase of $372,600 results from several actions. An increase of $88,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $14,200 and $96,700, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyear resulted in an increase of $87,200 to this activity.

Regional reprogrammings resulted in transfers between media with an increase to this activity of $308,100; the media contributing to this increase are drinking water ($175,600), water quality ($29,300), solid waste ($17,900), pesticides ($7,300), and air quality management implementation ($77,000).

1981 Plan

The 1981 level of resources for air quality data and field monitoring operations is $2,707,400 and 82 permanent workyears, of which $2,387,400 is for the Salaries and Expenses appropriation and $320,000 is for the Abatement, Compliance and Control appropriation. This is a decrease of $101,500 and an increase of $229,000, respectively. Contracts support the development of data analyses and graphic displays of air quality conditions as part of the Regional Environmental Profiles. The regions will continue the overview and management of State monitoring programs. This effort includes the evaluation and review of State monitoring networks for conformance to EPA regulations, and for adequacy in meeting data needs for trends assessment, compliance evaluation, SIP development and evaluation. This evaluation and review is done on a network basis and on-site at individual monitoring stations NAMS being first priority.

The quality assurance program includes three basic functions: quality assurance audits of State monitoring systems, coordination of State data quality assessments, and validation of all NAMS data for adequacy and timeliness. SLAMS data from all States will also be validated. Special data collection efforts will be provided for the complex photochemical dispersion modeling used in 1982 ozone SIP development. Regions will also actively participate in data collection efforts in all cities where trajectory models are required for the 1982 submittals and in data base development in large urban areas for particulate control strategies.

EPA will provide the necessary management and coordination with States to ensure that complete State emission inventories are submitted and stored in the national data bank (NEDS). This is necessary to ensure that complete national emission data can be developed and special analyses for individual nonattainment strategy problems can be undertaken. Regions will participate in performance audits of their laboratories, provide response to emergency spills or air episodes, and overview source operated monitoring networks in controversial PSD or energy source sitings.

AIR QUALITY AND EMISSIONS DATA ANALYSIS AND PROGRESS ASSESSMENT

1979 Accomplishments

1979 resources included $659,700 in contract funds to support assessment of environmental trends, software support for the NAMS, and support to the Comprehensive Data Handling System. The National Air Quality and Emissions Trends Report, 1977 was published. Major emphasis was given to national management of the 5-year plan for implementing the recommendations of Standing Air Monitoring Work Group (SAMWG) and carrying out Section 319 of the Clean Air Act Amendments of 1977. These requirements are reflected in new regulations for monitoring and reporting promulgated in 1979. A major goal of these regulations is to establish a national air monitoring network which generates high quality data and is operated by State and local agencies using national uniform methods. Effective implementation involves national oversight, the provision of technical guidance to the regional offices, and the development of new software to facilitate reduced State reporting. Key activities included assuring that the NAMS were being established in a nationally uniform manner, and preparing periodic assessments of the plans and first year progress in implementing SAMWG's recommendations and the regulations.

Programs to assess and report the Nation's progress in achieving National Ambient Air Quality Standards (NAAQS) and to operate EPA's national air data systems continued. Efforts continued toward making the States more self-sufficient in data handling and analysis by increasing the capabilities of the EPA developed systems used in 30 State and local agencies, and providing use of these systems to additional agencies via an EPA comput

1980 Program

The assessment of environmental trends and progess of control programs has been allocat $1,922,800 and 38 permanent workyears, of which $1,632,900 is for Salaries and Expenses and $289,900 is for extramural purposes under the Abatement, Compliance and Control appropriati Contracts support assessment of environmental trends and modification of NAMS Information System to permit direct user access to data. Major program emphasis include: data storage, processing and retrieval; development and maintenance of systems used for data processing; determination of trends in air quality and emissions; development of standard operating procedures and regulations for ambient monitoring stations operated by State and local agen and management of the National Air Monitoring Stations (NAMS).

Specifically, a comprehensive audit of 100 NAMS is being performed. Findings from thes audits serve as a primary source of data for assessment of NAMS and provide clear documentation for the corrective actions needed to comply with EPA criteria. Data from NAMS are be coded to indicate reliability of trends based on data collected as part of the EPA/State quality assurance program. New software and related procedures which can display data graphically are being developed and made available to States. Population exposure methods for CO are being developed and tested. A strategy is being prepared for the optimum use of ambient and source monitoring and models. Regulations on ambient monitoring for lead are being promulgated. Monitoring regulations to reflect the TSP and SO_2 NAAQS reviews are being proposed.

1980 Explanation of Change from Budget Estimate

The net decrease of $98,100 results from several actions. An increase of $47,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. Congressional reductions of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $1,800 and $17,300, respectivel An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $21,700 to this activity. A reprogramming of $105,000 was made within the air media, to air-energy and pollutant strategies. development to reflect a change in the accounting for resources which provide analyses in support of revisions to the ambient air quality standards.

1981 Plan

The Agency requests a total of $1,785,400 and 34 permanent workyears for this program, of which $1,495,500 is for the Salaries and Expenses appropriation and $289,900 is for the Abatement, Control and Compliance appropriation. This is a decrease of $137,400 and no change, respectively. Emphasis will continue on operation and updating of existing air data systems, on providing training and guidance to system users, and responding to requests from the public. For the EPA-developed systems installed in 33 State/local agencies, assistance and training services will be continued and systems will be upgraded. The Comprehensive Data Handling System will be modified and a software package will be upgraded and distributed to users.

Majors efforts will be continued to oversee the implementation of EPA's revised air quality surveillance regulations. Comprehensive on-site audits of approximately 125 NAMS will be conducted to assess compliance with the regulations. Procedures will be developed linking precision and accuracy values to NAMS data, and incorporating these into national trends analyses and other reports which will rely on NAMS as the primary source of data. In 1981, 1,300 NAMS are expected to meet site criteria and use EPA reference methods. The program to identify and resolve anomalies in historical NAMS data will be continued.

Revised monitoring regulations will be promulgated to support revised NAAQS. Guidance will be issued on the siting of monitors for nonattainment analyses.

AIR

Stationary Source Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Stationary Source Enforcement:					
Salaries and Expenses...	$11,982	$12,595	$13,776	$13,736	-$40
Abatement, Control and Compliance.....	10,535	12,435	12,181	10,697	-1,484
Total.....	22,517	25,030	25,957	24,433	-1,524
Permanent Positions.....	406	502	479	471	-8
Full-time Equivalency.....	439	517	522	507	-15

Budget Request

The Agency requested a total of $24,432,600 for 1981, a decrease of $1,542,200 from 1980. Included in this total is $13,736,100 for Salaries and Expenses and $10,696,500 for Abatement, Control and Compliance, with decreases of $39,400 and $1,484,800, respectively.

Program Description

The stationary source air enforcement program is designed to effectively utilize the enforcement authorities provided by the Clean Air Act, as amended in 1977, to ensure that all major sources comply with requirements of State Implementation Plans (SIPs); that new stationary air sources are constructed in accordance with applicable New Source Review (NSR), New Source Performance Standards (NSPS), and Prevention of Significant Deterioration (PSD) provisions; that new and existing stationary air sources subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) meet hazardous air pollutant standards; and that relevant provisions of the Power Plantand Industrial Fuel Use Act of 1978 are implemented.

EPA's highest priority in the stationary source air enforcement program (other than responding to emergency conditions) has been and continues to be the major source enforcement effort (MSEE) initiated in 1978. EPA commenced this accelerated enforcement against major stationary source violators which had never come into initial compliance with applicable requirements of the Clean Air Act and the Clean Water Act. The stationary source enforcement program is continuing its part of the MSEE by developing, and concluding, through settlement or litigation, cases against large air stationary source violators and ensuring compliance by closely tracking their compliance schedules or consent decrees.

It is this program's responsibility to implement certain new regulations under the Clean Air Act. The noncompliance penalty regulations under Section 120 will be promulgated in early 1980 and will create a positive incentive for compliance for many major sources in violation. Regulations will also be promulated in early 1980 for the implementation of Section 119 of the Act, relating to issuance of administrative orders to primary nonferrous smelters for the control of sulfur oxides emissions. The smelter order program should accelerate the movement toward compliance for the smelter industry.

Further, there will be a continuing commitment to a strong compliance monitoring program with particular attention being given to examining the field surveillance and compliance monitoring programs being implemented by the States as part of a cooperative effort to improve, where necessary, such programs.

EPA bolsters State air enforcement efforts by supporting State control agencies through control agency grants, by providing specialized skill and expertise and special contractual assistance. EPA will take the primary enforcement role with respect to selected sources when the States cannot or will not enforce.

1979 Accomplishments

As of December 1979, EPA had initiated civil action against 288 of the 319 air stationary source facilities initially listed for EPA civil actions under the MSEE. EPA has concluded 77 of these cases. A significant air pollution control settlement was negotiated with the U.S. Steel Corporation for six of the company's western Pennsylvania facilities, an agreement which will result in a reduction of approximately 22,000 tons per year of particulate emissions. Also, in conjunction with its modernization plan for the Mahoning Valley, Republic Steel signed a consent decree that allows modernization of its facilities in its Howland, Main Street, Pine Street, and Youngstown plants while bringing those facilities into compliance with all applicable air and water pollution control requirements. A very significant consent decree was negotiated with TVA which covers ten of TVA's electric power plants in the Southeast. Under this agreeent, reached with the full participation of the States of Alabama and Kentucky and 10 citizen, health, and environmental organizations, all TVA facilities are required to meet air emission standards on or before the end of 1982. This will result in a reduction of more than 970,000 tons of sulfur dioxide and 85,000 tons of particular emissions per year.

During 1979, EPA proposed regulations which would establish the procedures by which EPA and the States will assess and collect noncomplinace penalties under Section 120 of the Clean Air Act. The regulations also set forth the means by which the States may assume delegation of the noncompliance penalty program. Further, regulations were proposed which would establish the substantive requirements of initial primary nonferrous smelter orders (NSOs) issued under Section 119 of the Clean Air Act and the procedures to be used in issuing those NSOs.

A significant example of EPA working with the Department of Energy (DOE) to ensure that conversions to coal take place without compromising EPA's obligation to protect public health is the delayed compliance order for the New England Power Company's Brayton Point Station. The order was issued in conjunction with a prohibition order issued by DOE and will allow the New England Power Company to immediately convert two generating units at Brayton Point from oil to coal. The Brayton Point conversion will save aproximately 13,000 barrels of oil per day or an average yearly saving of over 4.7 million barrels.

For 1979, planned contract expenditures were $10,535,100, including $4,821,100 for enforcement case support; $3,954,000 for compliance monitoring and field surveillance; $495,000 for regional data system support; $750,000 for regional industrial studies support; and $515,000 to support development of national compliance profiles and enforcement strategies.

1980 Program

In 1980, the Agency has allocated a total of $25,956,800 and 479 permanent workyears for this program, of which $13,775,500 is for Salaries and Expenses and $12,181,300 is for extramural purposes under the Abatement, Control and Compliance appropriation.

During 1979, significant progress was made in developong the cases associated with the original MSEE list. Many cases, however, have not been concluded. During 1980, concluding the remaining cases on the MSEE list as rapidly as possible will be a very important objective. Once a case is concluded, the compliance schedule or consent decree must be tracked closely by EPA. In addition, preliminary results from a recent survey indicate that a potentially large number of sources were not covered by the original MSEE effort. This large number of additional sources will result in a significant workload which could approach a level comparable to that associated with the original MSEE.

Also, EPA will begin immediately to prepare for the implementation of Section 120 by assuring that evidence of violation for major source violators is current and complete and that technical and legal staff are prepared to handle the issuance of notices and the conduct of adjudicatory hearings. Other important activities during 1980 will be the issuance of new source permits under the prevention of significant deterioration (PSD) program, especially expeditious issuance of energy-related permits, issuance of Section 119 primary nonferrous smelter orders, responses to Section 110(f) energy emergencies, and issuance of Section 113(d)(5) delayed compliance orders due to coal conversion. Another substantial effort will be a Federal overview and support program that determines whether the States are performng satisfactory compliance monitoring inspections and, where necessary, improves their capability to do so.

Planned contract funds for 1980 total $12,181,300. Activities planned for these funds include $5,379,300 for enforcement case development, $4,635,000 for compliance monitoring and field surveillance, $1,157,000 for regional industrial, technical, and economic studies, $515,000 for national profiles and enforcement strategy studies, and $495,000 for data support.

1980 Explanation of Change from Budget Estimate

The net increase of $927,000 results from several actions. An increase of $524,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $170,900 and $101,500, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $558,100 to this activity.

A reprogramming of $75,000 was made to the Office of Enforcement program management for litigation management support and establishment of a special investigations unit. A reprogramming of $104,700 was made from interdisciplinary Federal activities/EIS revie to reflect the transfer of the Federal facilities monitoring and compliance function which is more appropriately identified with enforcement activities.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers to water quality NEPA compliance/EIS preparation ($29,600); to uncontrolled hazardous waste sites ($1,500); to regional management ($12,600); to interdisciplinary EIS reviews ($17,300); from water quality State programs regulations and guidelines ($51,100); from water quality permit issuance ($72,500); from the Office of Regional Counsel ($3,200); from drinking water enforcement ($1,900); from hazardous wastes enforcement ($3,000); and from pesticides enforcement ($16,500).

1981 Plan

The Agency requests a total of $24,432,600 for this program, of which $13,736,100 is for the Salaries and Expenses appropriation and $10,696,500 is for the Abatement, Control and Compliance appropriation, a decrease of $29,400 and $1,484,800, respectively. The majority of these resources will be used to bring major violators of SIPs, NSPS, and NESHAPS regulations into compliance and through the use of Section 113 and Section 120 provisions. Other significant activities include the overview of State enforcement programs, especially compliance monitoring and new source programs, issuance of PSD permits, issuance and tracking of NSOs and energy-related programs.

The original major source enforcement effort (MSEE) began in 1978 to bring into compliance those violators which had never been in compliance. Most of these cases should be concluded by settlement or litigation in 1980. Thus, the workload associated with the original MSEE during 1981 will primarily be that of closely monitoring the compliance schedules and consent decrees of the subject facilities, although undoubtedly some additional litigation will carry over into 1981. A major element of the program, beginning in 1980 and extending into 1981, will focus on the large number of sources added to the program in 1980. A substantial amount of time and effort will be required to develop and conclude these additional MSEE cases.

By 1981, the noncompliance penalty program will be underway. Noncompliance penalties must be assessed against all sources not meeting SIP requirements or in violation of NSPS or NESHAPS regulations. The noncompliance penalty program will be an effective method for obtaining compliance; however, this program is anticipated to result in a large number of adjudicatory hearings and this will be a major resource demand in1981.

The concept of preventing regression from achieved levels of compliances applies to all stationary source enforcement programs. Failure to support an effective program for ensuring the continued compliance of sources with emission limitations would, to a substantial extent, negate the efforts orginally expended to bring sources into compliance. The budget request reflects a continuing commitment to a strong field surveillance program with the use of contractors for much of this element of the program. It should also be noted that EPA intends to expand substantially its program for continuous monitoring in the future, which should ultimately lead to more effective compliance monitoring with less resources devoted to that effort.

EPA will implement the primary nonferrous smelter order (NSO) program, under Section 119 of the Clean Air Act in 1980. Any smelter receiving an NSO is permitted to defer compliance with the sulfur dioxide emision limitation to which it is subject under an applicable SIP. Initial NSOs may extend through January 1, 1983. A smelter that receives a Section 119 order will be placed on a rigorous compliance program which includes interim controls, and a research and development program to investigate and demonstrate control methods that are economically and technologically feasible. A major effort during 1981 will be monitoring the compliance programs and the research and development programs of these smelters.

An area of increasing focus is the relationship and balance between environmental and energy concerns. The Power Plant and Industrial Fuel Use Act of 1978 prohibits, with exemptions, new power plants and new major fuel burning installations from using, as a primary energy source, natual gas or petroleum. Also prohibited is the construction of comparable new sources without the capability to use coal or an alternate non-petroleum-based fuel as a primary energy source. Exemptions will be granted by the Department of Energy (DOE) where environmental requirements could not be met if coal is burned as the primary energy source. EPA must work with DOE to ensure that these new sources are constructed in accordance with NSR, NSPS, and PSD requirements. In addition, certain existing power plants having the technical capability to use coal may be required to convert under the Power Plant and Industrial Fuel Use Act. Upon conversion, these sources will still have to meet environmental standards. Also, as part of EPA's energy-related programs, EPA will provide quick and thorough responses to Section 110(f) energy emergencies and Section 113 (d)(5) delayed compliance orders and will continue to expedite issuance of energy-related PSD permits.

In accordance with EPA's increasing attention to toxic substances, increased emphasis is being placed upon hazardous air pollutants subject to regulation under Section 112. EPA, in 1980 and 1981, plans to implement new NESHAP programs; thus increased enforcement efforts will be required to ensure compliance with these requirements.

Contract funds requested in 1981, totalling $10,696,500, include $5,300,000 for enforcement case development, $4,091,500 for compliance monitoring and field surveillance, $740,000 for regional industrial technical and economic studies, and $565,000 for data support.

AIR

Mobile Source Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Mobile Source Enforcement:					
Salaries and Expenses	$3,510	$3,496	$3,931	$3,883	-$48
Abatement, Control and Compliance	2,332	3,355	2,943	2,967	+24
Total	5,842	6,851	6,874	6,850	-24
Permanent Positions	117	138	126	118	-8
Full-time Equivalency	143	158	157	152	-5

Budget Request

The Agency requests a total of $6,849,500 for 1981, a decrease of $25,100 from 1981. Included in this total is $3,883,000 for Salaries and Expenses and $2,966,500 for Abatement, Control and Compliance, with a decrease of $48,300 and an increase of $23,200, respectively.

Program Description

The mobile source enforcement program is directed primarily toward achieving compliance with motor vehicle emission standards and fuels regulations. The major objectives of the program are to (1) assure that new vehicles meet emission standards; (2) assure that vehicles meet emission standards in-use; (3) assure that emission control systems are not removed or rendered inoperative (gross tampering occurring on 19-29 percent of in-use cars); (4) assure compliance with emissions inspection/maintenance (I/M) requirements and vehicle miles traveled (VMT) measures; (5) assure control of hydrocarbon emissions during gasoline transfer operations; (6) assure that harmful additives are removed from gasoline; (7) administer California waivers; and (8) administer the emission warranties.

1979 Accomplishments

In 1979, the mobile source enforcement program continued to carry out its responsibilities under Title I and Title II of the Clean Air Act by emphasizing programs aimed at reducing the failure of vehicles to meet emission standards. In 1979, the mobile source enforcement program issued 37 selective enforcement test orders to manufacturers to test vehicles on the assembly line. Twenty-four (24) recall investigations were completed resulting in the recall of 1,940,000 vehicles. Manufacturers' certification and production compliance procedures were enforced by conducting three inspections and 10 investigations. The tampering and fuel switching provisions were enforced by performing 221 new car dealership inspections and 221 fleet tampering/fuel switching inspections. Fourteen hundred (1400) service station inspections were conducted to assure compliance with the Stage I vapor recovery provision and 14,500 unleaded gasoline inspections were conducted. A survey of 39,500 refuelings was conducted to determine the rate at which vehicles requiring unleaded gasoline are being fueled with leaded gasoline and indicated that a rate of 8-10 percent fuel switching is occurring.

Approximately $2,332,000 in contract funds were obligated in 1979 in support of recall emission testing, surveys, antitampering and antifuel switching publicity, computer support, catalyst testing, fuel switching observations, and assistance to States for the unleaded gasoline and vapor recovery programs.

1980 Program

The Agency has allocated in 1980 a total of $6,874,600 to this program, of which $3,931,300 is for Salaries and Expenses and $2,943,300 is for extramural purposes under the Abatement, Control and Compliance appropriation. The extramural funds will be used for recall emission testing, fuels inspections, public awareness, catalyst testing, model enforcement, fuel switching observations, surveys, and computer support.

In 1980, the mobile source program initiated comprehensive enforcement of the antitampering and antifuel switching provisions aimed at reducing emissions from the in-use fleet thereby supporting the adoption of inspection/maintenance programs. Inspection and investigatory efforts are coordinated nationally to focus on major private and municipal fleets, new car dealerships, commercial auto repair facilities, and service stations to maximize publicity and deterrent effect when violations are detected.

Other major activities in 1980 will be to continue the assembly line testing program for light duty vehicles and the recall program; implement warranty regulations; implement the aftermarket part certification program; administer the emission and California waivers, and administer the fuel/fuel additive waiver requests.

The enforcement activities will be to issue 35 selective enforcement audit vehicle test orders; conduct 27 recall investigations; 780 confirmatory/surveillance tests; 1400 fleet tampering/fuel switching inspections; 1200 new car dealership inspections; 25,000 fuel inspections and 5,000 fuel switching observations; 15 warranty investigations; two inspection/maintenance and transportation control measure audits; and test 10 aftermarket parts.

1980 Explanation of Change from Budget Estimate

The net increase of $23,300 results from several actions. An increase of $129,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $23,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $36,300 to this activity.

A reprogramming of $3,800 was made from water quality enforcement to support increased travel costs. A reprogramming of $50,000 was made to the Office of Enforcement program management for litigation management support and establishment of a special investigations unit.

1981 Plan

The Agency requests a total of $6,849,500 for the program, of which $3,883,000 is for the Salaries and Expenses appropriation and $2,966,500 is for the Abatement, Control and Compliance appropriation. Extramural funds will be used for recall emission testing, fuel switching enforcement observations, fuels inspections, an antitampering and anti-fuel switching publicity campaign, aftermarket part testing and computer support.

In 1981, the centralized enforcement program aimed at controlling tampering and fuel switching in order to reduce in-use emissions from mobile sources will be continued. This program will include a special effort directed toward preventing a widespread increase in fuel switching caused by a shortfall in unleaded gasoline accompanied by monitoring of the petroleum industry to detect the locations and severity of such shortages. The antitampering and anti-fuel switching effort is intended to complement and facilitate the implementation of inspection/maintenance programs by preventing further deterioration of the vehicle fleet before I/M programs are implemented.

The selective enforcement audit (SEA) program will be continued in order to deter the production of nonconforming light duty vehicles. The SEA program assures the new vehicles on the production line are in compliance with emission standards before being introduced in commerce.

The recall program will continue to assure compliance of in-use venicles with emission standards. SEA activity, recall testing, and increased public contact due to federally enforceable warranty provisions will serve to identify a greater number of vehicle classes suspected of exceeding emission standards in use.

In 1981, activities of the fuels program will include conducting 25,000 combined unleaded, vapor recovery and octane inspections at service stations and fleet dispensing facilities. These inspections will be performed with State and/or private testing firms. The program will continue to monitor lead usage reports and the status of refiner efforts to achieve compliance with the lead phasedown program, administer the provision which prohibits the use of fuel and fuel additives and administer the emission waivers as required.

During 1981, the major activities for the mobile source enforcement program will be to:

- Conduct 1200 new car dealership tampering inspections.
- Conduct 1400 fleet tampering/fuel switching inspections.
- Conduct 550 confirmatory/surveillance tests.
- Conduct 5000 fuels observations.
- Issue 33 vehicle SEA test orders.
- Conduct 19 recall investigations.
- Enforce unleaded gasoline, Stage I vapor recovery and octane disclosure requirements through 25,000 combined fuels inspection tests.
- Conduct 10 inspection/maintenance audits.
- Conduct 10 transportation control measure audits.
- Administer emission waivers.
- Administer fuel/fuel additive waiver requests.
- Conduct 15 warranty investigations.
- Conduct 5300 enforcement observations of retail gasoline outlets.

WATER QUALITY

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase Decrease - 1981 vs. 1981	Page
		(dollars in thousands)				
APPROPRIATION						
Salaries and Expenses...	$10,950	$113,266	$109,861	$112,195	+$2,334	
Research and Development	42,575	38,078	39,140	35,961	-3,179	
Abatement, Control and Compliance.....	240,644	180,107	188,435	186,932	-1,503	
Total.....	387,169	331,451	337,436	335,088	-2,348	
Permanent Workyears.....	3,101	3,173	3,088	3,032	-56	
Full-time Equivalency...	3,592	3,791	3,747	3,676	-71	
Outlays.....	283,462	284,800	282,400	285,300	+2,900	
Authorization Levels....	745,229	703,728	696,233	*		

* Authorization pending.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase Decrease - 1981 vs. 1981	Page
		(dollars in thousands)				
PROGRAM HIGHLIGHTS						
Health and Ecological Effects:						WQ-18
Salaries and Expenses...	$10,168	$10,464	$11,388	$10,830	-588	
Research and Development	12,994	11,760	12,215	11,054	-1,161	
Industrial Processess:						WQ-37
Salaries and Expenses...	2,488	3,776	2,823	2,074	-749	
Research and Development	7,896	11,051	11,554	9,163	-2,391	
Public Sector Activities:						WQ-45
Salaries and Expenses...	4,614	4,742	5,332	4,338	-494	
Research and Development	16,764	9,616	9,596	9,962	+366	
Monitoring and Technical Support:						WQ-59
Salaries and Expenses...	5,878	6,599	6,473	6,319	-154	
Research and Development	4,921	5,651	5,775	5,782	+7	
Total:						
Salaries and Expenses...	23,148	25,581	26,016	24,061	-1,955	
Research and Development	42,575	38,078	39,140	35,961	-3,179	
Total, Research and Development Program.....	65,723	63,659	65,156	60,022	-5,134	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase Decrease - 1981 vs. 1981	Page
		(dollars in thousands)				
Water Quality Planning and Standards:						WQ-71
Salaries and Expenses...	11,492	12,089	11,731	12,151	-420	
Abatement, Control and Compliance.....	19,908	27,100	26,978	25,136	-1,842	
Effluent Standards and Guidelines:						WQ-87
Salaries and Expenses...	5,585	4,178	5,821	6,367	+546	
Abatement, Control and Compliance.....	20,345	24,933	22,662	23,678	+1,016	
Grants Assistance Program:						WQ-95
Salaries and Expenses...	...	...	...	...	...	
Abatement, Control and Compliance.....	151,232	88,730	86,810	82,730	-4,080	
Water Quality Strategies Implementation:						WQ-100
Salaries and Expenses...	7,925	11,072	8,351	9,422	+1,071	
Abatement, Control and Compliance.....	6,347	500	6,647	6,387	-261	
Water Quality Monitoring and Analysis:						WQ-113
Salaries and Expenses...	7,677	6,042	7,540	8,209	+669	
Abatement, Control and Compliance.....	3,532	2,520	2,471	2,436	-35	
Municipal Source Control:						WQ-118
Salaries and Expenses...	26,399	32,981	27,614	27,759	+145	
Abatement, Control and Compliance.....	33,773	29,400	36,778	36,729	-49	
Total:						
Salaries and Expenses...	59,079	66,362	61,057	63,908	+2,851	
Abatement, Control and Compliance.....	235,137	173,183	182,346	177,096	-5,251	
Total, Abatement and Control Program.....	294,216	239,545	243,403	241,004	-2,400	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase Decrease - 1981 vs. 1981	Page
		(dollars in thousands)				
Water Quality Permits Issuance:						WQ-129
Salaries and Expenses...	6,247	6,653	6,850	7,949	+1,099	
Abatement, Control and Compliance.....	1,349	2,750	3,036	6,927	+2,891	
Water Quality Enforcement:						WQ-134
Salaries and Expenses...	15,477	14,670	15,937	16,277	+340	
Abatement, Control and Compliance.....	4,156	4,174	3,053	3,909	+856	
Total:						
Salaries and Expenses...	21,724	21,323	22,787	24,226	+1,439	
Abatement, Control and Compliance.....	5,506	6,924	6,089	9,836	+3,747	
Total, Enforcement Program	27,230	28,247	28,876	34,062	+5,186	
Permanent Positions						
Health and Ecological Effects.....	201	204	210	196	-14	WQ-18
Industrial Processess.....	43	57	57	43	-14	WQ-37
Public Sector Activities..	99	117	121	112	-9	WQ-45
Monitoring and Technical Support.....	135	125	127	120	-7	WQ-59
Total, Research and Development Program.....	478	503	515	471	-44	
Water Quality Planning and Standards.....	303	359	333	327	-6	WQ-71
Effluent Standards and Guidelines.....	114	113	116	112	-4	WQ-87
Grants Assistance Programs	...	...	...	...	...	WQ-95
Water Quality Strategies Implementation.....	224	196	248	263	+15	WQ-100
Water Quality Monitoring and Analysis.....	192	175	188	191	+3	WQ-113
Municipal Source Control...	939	931	925	915	-10	WQ-118
Total, Abatement and Control Program	1,772	1,774	1,810	1,808	-2	
Permit Issuance	204	237	243	243	...	WQ-129
Water Quality Enforcement..	568	541	520	511	-9	WQ-134
Total, Enforcement Program.	772	778	763	754	-9	

60-531 O - 80 - 31

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase Decrease - 1981 vs. 1981	Page
		(dollars in thousands)				
Full-time Equivalency						
Health and Ecological Effects	294	287	340	331	-9	
Industrial Processes	69	86	75	52	-23	
Public Sector Activities	138	157	154	130	-24	
Monitoring and Technical Support	174	178	169	159	-10	
Total, Research and Development Program	675	708	738	672	-66	
Water Quality Planning and Standards	387	447	398	393	-5	
Effluent Standards and Guidelines	135	152	151	147	-4	
Grants Assistance Programs	7	7	7	7	...	
Water Quality Strategies Implementation	246	232	280	288	+8	
Water Quality Monitoring and Analysis	257	244	243	241	-2	
Municipal Source Control	1,038	1,084	1,072	1,058	-14	
Total, Abatement and Control Program	2,070	2,166	2,151	2,134	-17	
Permit Issuance	237	273	270	295	+25	
Water Quality Enforcement	610	644	588	575	-13	
Total Enforcement, Program	847	917	858	870	+12	

Overview and Strategy

In 1981, the water quality program will continue the major thrusts initiated in 1980 as a result of changes made by the Clean Water Act of 1977. This program will:

- continue to increase overall emphasis on toxic pollutant controls;
- continue a basic strategy for the construction grants program which both minimizes risks to program integrity and continues a high level of obligations;
- proceed with delegation of management functions to the States and the development of water quality management programs at the State level;
- protect sensitive wetland systems through effective implementation of Section 404 of the Clean Water Act;
- proceed with implementation of the hazardous substances regulations under Section 311 of the Clean Water Act;
- continue aggressive enforcement of the law; and
- develop scientific information necessary to support sound management decisions.

Within this context, the program has identified several program activities which must receive increased attention in 1981 to assure that goals set by legislation are achieved. In general, particular emphasis in 1981 will be given to program implementation rather than standard setting. Specific program activities which require increased resources/attention are as follows:

- implementation of the pretreatment program as a means to significantly reduce the introduction of toxic discharges into our waterways;

- inclusion under the auspices of Section 311 of a program to respond to environmental emergencies from abandoned hazardous waste sites and hazardous substances spills;

- expanded implementation of Section 404 to protect sensitive wetlands areas by assuring that adequate environmental review is given to the most controversial permit applications and that enforcement support is available to deal with illegal dredge and fill actions;

- continuation of the Agency effort to ensure that applications for Section 301(h) waivers receive adequate and timely review both to protect the rights of municipalities and to protect the ocean environmental; and

- implementation of regulations that consolidate permitting procedures for five separate programs to simplify the permitting process and better utilize Agency resources.

Emphasis on Toxic Pollutant Control

In 1981, the emphasis on controlling toxic pollutants will again encompass nearly every water program. Specific programs and/or activities which support toxics control are discussed below.

During 1981, EPA will largely accomplish the task of standard setting in the area of toxic pollutant control. The promulgation of Best Available Technology (BAT) regulations required by the "Settlement Agreement" will be completed, although a substantial workload resulting from litigation of those regulations is anticipated in that year and beyond. Increased attention will be given to determining whether there are additional toxic compounds which should be addressed in effluent guidelines, and special "hot spot" studies will determine whether controls in addition to and beyond BAT are necessary. Completion of BAT regulations will allow a shift in emphasis to investigations of "innovative" technologies to minimize the overall discharge of all toxics (whether identified or not) into the environment.

EPA s monitoring strategy for 1980 and 1981 has two main components: first, it will provide information to management to support policy setting by developing an understanding of how water pollution control programs affect environmental quality; second, monitoring activities will support operational programs by providing technical information to identify where specific regulatory actions are required. Specifically, the monitoring program will provide pollutant-by-pollutant control strategies based on assessments of environment distribution, exposure/risk analyses and fate studies for the 65 classes of toxic pollutants stipulated in the Settlement Agreement and the Clean Water Act; area-by-area regulatory strategies and guidance to the States for geographic areas where Best Available Technology may not be adequate to control pollution; and environmental impact assessments for the 21 primary industrial categories.

One of the key constraints to carrying out toxics control is the inadequacy of State laboratories to perform toxics monitoring and the absence of strong quality assurance programs. To help address this problem, the 106 grant program will encourage states to use these funds to develop strong quality assurance programs, and data collection will be standardized to foster comparability across the country.

The promulgation of the General Pretreament Regulation (40 CFR Part 403) in June 1978, marked a significant step in the Agency's efforts to control toxic pollutants. Contributions of toxic pollutants from indirect dischargers have virtually escaped regulations until the initiation of this program. The result was a striking disparity between the economic burden shouldered by direct dischargers required to install treatment technology and indirect dischargers who were often identical in all respects to their direct discharger counterparts but were not required to treat their wastes.

Failure to regulate indirect dischargers also resulted in striking gaps in environmental controls. One study reveals that the toxic loading from POTWs discharging the untreated waste from their indirect industrial users exceeded the total amount of process waste contributed by direct dischargers in the area studied. The pretreatment program has operated over the last year and will continue in 1980 to operate with a very limited number of positions supplemented by some contract funds. As a result, the Agency has fallen behind in its implementation schedule.

Given the approach of the 1983 legislative deadline and the very significant impact of these discharges on water quality, the Agency is requesting additional enforcement and permit resources for implementation of this program. These resources, along with resources included in Step 1 of the construction grants program, will support local program assistance activities, review and approval of local programs, consideration of requests for modification of pretreatment standards, modification of municipal permits to incorporate pretreatment requirements, and sampling and inspections to determine whether pretreatment requirements are actually being met.

The permit program in 1981 will also continue its emphasis on control of toxics through the issuance of BAT permits to industrial dischargers in the 21 industrial categories in the Settlement Agreement. These permits will have as their basis the effluent limitations for toxics developed as a part of the Settlement Agreement. Priority will also be given to resolving adjudicatory hearings to make major permits finally effective and enforceable.

Control of toxic pollutants by EPA must also address discharges into the environment caused by spills, leaks, and similar non-routine occurences. The promulgation in late 1979 of revised regulations designating hazardous substances and reportable quantities under Section 311 will allow EPA to expand its spill prevention and emergency response program into the hazardous substances area for the first time. The Environmental Emergency Response Team and the Technical Assistance Team (TAT) contract will expand marginally in 1981 to provide increased on-scene support for both hazardous substances spills and emergencies arising from abandoned waste site discharges. The primary program emphasis in 1981 will be to integrate these new regulations into the prevention and response programs already developed and to continue implementation of a response program for abandoned hazardous waste site emergencies.

Construction Grants Delegation

The abatement of water pollution problems resulting from conventional pollutants, such as excess suspended solids, bacteria, and oxygen demanding loads that degrade our waterways remains a major mission of the Agency. The problem of conventional pollutants is massive and will continue to require a large commitment of personnel and dollar resources into the future.

The construction grants program continues to be the main Agency mechanism to address these municipal point source needs. The remaining Federal share required for construction of municipal treatment facilities to meet the legislative standards under the Clean Water Act (i.e., BPWTT) is more than $50 billion. A long-term strategy to meet the highest priority of these needs in a reasonable amount of time is now under development and will address issues related to inflation, eligibilities and priorities and funding distribution. The Agency is requesting $3.7 billion in new obligational authority for 1981, as part of this evolving long-term strategy.

The program in 1981 will put principal emphasis on program implementation and management; few (if any) new policy and legislative thrusts are anticipated. The transition in program orientation resulting from the Clean Water Act of 1977 and the re-emphasis on program quality will be largely completed. The highest management priority effort in the near term will be to shift the program toward decentralized management, with State delegation and use of the Corps of Engineers resources receiving maximum emphases. The Agency recognizes that both maintaining obligation rates at reasonable levels and ensuring full technical, environmental, and fiscal integrity of our projects are co-equal objectives and must be balanced against each other.

Section 301(h) of the 1977 Amendments to the Clean Water Act authorizes the Administrator to grant a waiver of secondary treatment requirements to publicly owned treatment works (POTWs) which discharge into marine waters, if certain conditions are met. These conditions include the provision that the discharge will not interfere with public water supplies, with recreational activities, or with a balanced, indigenous population of shellfish, fish and wildlife.

Currently, 225 preliminary applications for Section 301(h) waivers have been filed with the Agency. Although only about 100 of these are estimated to be "facilities eligible for review", the review process itself is extremely resource intensive and requires high technical skill levels. Additionally, the Agency estimates that two-thirds of the determinations will require hearings [non-adversary procedures for initial licensing (N.A.I.L.)] which may require as much as one workyear per hearing. The 1981 budget includes an initiative to complete technical evaluation and permit issuance activities for these waiver requests. Resources provided by this budget should allow processing of most initial Section 301(h) applications and conclusion of non-adversary initial licensing hearing procedures.

Water Quality

The long-range goal of the water quality management program is to assist in the achievement of fishable/swimmable water quality through the development of a State and local decision-making process to control point and nonpoint sources of pollution. To accomplish this goal, the Agency has encouraged the adoption of State/EPA Agreements which define program priorities and establish long-term strategies to achieve environmental objectives. By the end of 1980, all States will have completed at least an initial agreement. EPA has made and will continue to make grants under Sections 106 and 208 of the Clean Water Act to State, interstate, and areawide agencies. Section 106 funds have been used by States for operation and maintenance of their water quality management programs, while Section 208 funds provided matching grants to designated State and areawide agencies for solving water quality problems through the preparation of water quality management plans.

EPA has developed a multi-year program and funding strategy which establishes priorities and funding needs, promotes consolidation of programs, and emphasizes State management and plan implementation. This strategy, which reflects a transition from a planning mode to an implementation mode, changes the emphasis on planning from one which requires a comprehensive analysis of every potential or identifiable water quality problem which a State or area might face to a very specific problem output orientation. Utilizing the problem analyses developed in the initial Section 208 plans, the Agency is working to ensure that the water quality management program focuses only on a few of the substantial problems for which solutions can be implemented in a timely fashion. Only those agencies which are implementing significant portions of their initial plan are being funded.

The program s primary emphasis has shifted to the development of cost-effective, non-point source controls, especially in the areas of urban runoff, agriculture, constuction and ground water. This more focused approach has allowed funding of prototype projects which are used to train regional, State, and local staffs. The findings of these projects, once evaluated and documented, can then be used by other localities.

1981 will see the continued implementation of this strategy with increased emphasis on improved regional management and a more aggressive management stance in identifying national priorities. An evaluation will be made of the current method for allocating 106 funds, and if warranted, the Section 106 funding policies could be amended if warranted. A preliminary report to Congress on urban storm problems, effects, and controls will be prepared as will a summary report on results of Model Implementation Projects for agricultural pollution control.

Protection of Wetlands

The importance of wetlands to maintenance of an ecological balance is well recognized. Not only do these areas serve as spawning and maturation areas for fish and shellfish species, but they also provide flood protection to downstream areas, protection of beach and other coastal land through wave energy absorption, and water quality benefits through the absorption of nutrients and some toxic pollutants. Despite the recognized importance of these areas, they continue to be destroyed at an alarming rate. The problem seems to be on the increase as agricultural concerns in the South and other areas are finding that inexpensive "swamplands" can be drained and become valuable cropland.

Given the irreversible nature of the destruction of these areas, the Agency must take very seriously the responsibilities placed on it by the 1977 Amendments to the Clean Water Act. As a result of those amendments, EPA must not only issue regulations establishing State program approval criteria and review and act upon applications from States, but must also provide continuing oversight for both States and the Corps permit program.

Additional regional resources provided in this submission will give EPA the capacity to review about 75 percent of all the permits (major permits total approximately 2,500) at a minimal level. Additionally, technical and enforcement support for review of pre-permitting activities and illegal activities will be provided. The reprogramming of resources within the headquarters and regional enforcement decision units will allow for an enforcement response to unauthorized activities in the regions in double the number of cases as in the past. This enforcement thrust is essential if EPA is to have a comprehensive and effective approach to protection of wetlands.

Effective Enforcement of the Law

Effective enforcment of the law requires that the Agency determine and articulate the requirements that permittees must meet, as well as follow up to determine that those requirements are being met. EPA expects to improve its permitting process in 1981 through coordination and consolidation of permitting procedures for five separate EPA permit programs. To the extent feasible, the consolidated permit regulations will make regulatory standards and application forms consistent for permits issued under the Clean Water Act, and the Resource Conservation and Recovery Act. The Agency expects permit consolidation to produce better permits, reduce delays, simplify permitting procedures, and make more efficient use of Agency resources.

Enforcement will be increasingly involved during 1981 with the Permits and Construction Grants Divisions in carrying out the municipal policy and strategy. This strategy was designed to effectively and efficiently move municipalities toward compliance with requirements of the Clean Water Act. Enforcement s role during 1981 will include initiation of enforcement actions where it has been determined that facilities are not using all available tools to achieve compliance.

Scheduled for expansion in 1981 are pretreatment and toxics compliance monitoring and enforcement programs. A greater number of biomonitoring inspections and compliance sampling inspections for toxics will be conducted during 1981 to monitor for compiance with pretreatment regulations and toxic limitations incorporated into "second round" permits. Where violations are detected, the appropriate enforcement action will be initiated.

The discharge monitoring report quality assurance program, a pilot program in 1980, will be expanded to a national level in 1981, to ensure that EPA and State laboratories are properly analyzing permittee samples.

Scientific Bases for Decisions

EPA s research and development program is designed to provide the scientific information necessary to support sound policy, management and enforcement decisions. In accordance with the Agency s guidance, the program emphasizes the behavior of toxic pollutants and their effects on our health and the environment. Activities planned for 1981 may be divided into four categories: health research, environmental processes and effects, measurement and monitoring, and industrial and municipal research.

Health research will address the health implications of existing and new technology for the treatment, disposal and reuse of wastewater and sludge. It will also determine the health effects of priority toxic pollutants in complex effluents. Finally, it will develop recreational freshwater quality criteria and criteria for the safe reuse of wastewater for potable, industrial and aquacultural purposes.

Environmental processes and effects activities will concentrate on (1) understanding the structure and function of natural and modified freshwater and marine ecosytems, including wetlands, as a basis for predicting the consequences of human activities on these ecosystems; (2) measuring the effects of pollutants, singly and in complex mixtures, on these ecosystems and their components, including individuals, populations, and communities and determining rates of recovery; (3) developing necessary and effective methods for measuring ecological effects of these pollutants; (4) determining movement, transformation, and fate of toxic pollutants in acquatic ecosystems, including the role of sediments in the food chain; and (5) determining the effects of and criteria for control of specific pollution sources such as dredging and associated activities and discharges from nonpoint sources.

Measurement and monitoring will emphasize research to provide the systems, models, and tools required to take representative environmental samples and make reliable measurements. Outputs will include guidelines for sample collection and preparation and analytic methodology for the cost effective identification and quantification of all relevant chemical and biological factors in water, leachates, sludges, sediments, and soil. It will provide broad screening methods which are critically required for measuring organic pollutants and toxics in wastewaters and sludges. It will develop and evaluate monitoring systems and provide technical support to Agency spill and emergency response activities through aerial and remote sensing and data interpretation. Quality assurance research and services will continue to support the establishment and maintenance of quality data which result from Agency monitoring and measurement systems.

The water quality control technology research addresses both industrial and municipal waste water effluent pollution problems. This research will include the assessment of the pollution characteristics and the development and evaluation of technology to control the pollution. The research will provide for the development of information for the preparation of industrial effluent guidelines and "best management practices" for industrial pollution not readily controlled by effluent limitation. The research will also provide for the assessment of suggested "innovative and alternative technologies" for the treatment of municipal waste waters in direct support of the construction grants program. Research into the potential for recycling and reuse of waste waters and control of hazardous and toxic pollutants in waste water effluents will be supported, as will a program for the development of cleanup technology for hazardous materials spills. The research will also develop and evaluate cost-effective methods for selecting agricultural best management practices. The water quality control technology research will also provide engineering expertise and support to the Agency s regulatory enforcement and permitting activities.

PURPOSE - Research and Development Program

Research and development in EPA s water quality program provides the scientific information needed to support its standard setting and enforcement activities. The multifaceted research program includes the development of efficient and cost effective waste water treatment technology for both municipalities and industries; the determination of the health implications of existing technology for treatment and disposal of waste water and sludge; the determination of useful and defensible monitoring methods; documentation of the validity of monitoring data; definition of criteria for water use in various aquatic environments; the establishment of strategies for control of pollution from spills of hazardous materials; and the prevention or control of pollution from agricultural and forestry sources. The overall goal is to provide the scientific basis for economical and socially viable environmental management.

PURPOSE - Abatement and Control Program

The objectives of the water quality abatement and control programs are to abate water pollution from industrial and municipal sources and to assist State, areawide, and local agencies in controlling water pollution from point and nonpoint sources by providing management, technical, and resource assistance.

Industrial point source control is accomplished by the development of technology-based effluent limitations. The current emphasis is on development of effluent limitations for toxic pollutants which reflect best available technology economically achievable for existing sources and which represent new source performance standards for new sources. In particular, the emphasis on toxic pollutants has required the concurrent development and use of new analytical methods, substantial increases in resources devoted to sampling and analysis activities, development of new and cost-effective analytical methods for routine monitoring of individual toxic pollutants, examination of waste water treatment technologies for effectiveness in removing toxic pollutants, and more intensive and thorough engineering investigations of specific industrial categories. These effluent limitations will be aimed at controlling the discharges of 65 compounds and classes of compounds for 34 industry categories. Industrial effluent limitations are implemented through National Pollutant Discharge Elimination System (NPDES) permits. Pretreatment standards for existing and new industrial users of municipal treatment works will be developed for 34 primary industry categories along with effluent limitations for direct dischargers. Pretreatment standards will regulate toxic pollutants which are incompatible with municipal works.

Municipal point source control proceeds via Federal grants to municipal, intermunicipal, State and interstate agencies which assist in financing the planning, design and construction of municipal waste water treatment facilities. The construction grants program helps municipalities to achieve the effluent limitations required by the Act. As is the case with industries, effluent limitations are implemented through NPDES permits, and construction grants are made to assist municipalities in meeting their permit conditions. Construction grant funds are allocated to each State on the basis of formulas set forth in the Clean Water Act. Within these allotments, grants are awarded on a priority basis for individual projects. Generally each project is eligible for 75 percent Federal assistance, although grants may provide up to 85 percent for projects using innovative or alternative technology in treatment facilities design.

As part of the municipal construction grants program, the Section 205(g) State management assistance grant program authorizes the use of two percent or $400,000, whichever is greater, of each State s allotment to cover the cost of delegation of the construction grants program to the States. To the extent that funds suffice, they can also be used for NPDES permit, dredge and fill, and Section 208 management programs. The goal of this program is to allow the States, rather than EPA, to assume management of the day-to-day responsibility of construction grants activities.

Because a primary responsibility for the control of pollution lies with the States, EPA s abatement and control efforts are oriented toward support of State and local efforts to develop and maintain their technical, institutional and financial mechanisms in water quality management. The primary mechanism for accomplishing this and related objectives will be comprehensive, integrated State/EPA Agreements covering all water quality and directly related resource assistance programs. State/EPA Agreements are the primary vehicle for accomplishing national water quality management priorities in a cost-effective way, as well as State and local priorities based on particular localized problems.

The cornerstone of the State/EPA Agreement is the management, technical and resource assistance and guidance provided to State, areawide, and local water quality planning and management agencies under the Clean Water Act. These agencies develop water quality problem assessments, water quality standards, and detailed water quality management plans with Agency assistance and national priority guidance.

Implementation programs meeting national, State, and local priority needs are supported under Section 106 State program grants, Section 314 Clean Lakes grants, and under the municipal waste treatment construction program. In addition, delegated State management of municipal waste treatment, National Pollutant Discharge Elimination System (NPDES) and dredge and fill programs can be encouraged and supported with Construction Management Assistance grants under Section 205(g).

Combined and integrated with other abatement and control, enforcement, and research programs in EPA and other Federal agencies under the State/EPA Agreements, the water quality management program functions to assure sound management of surface and ground water resources, including drinking water; promotes the development and implementation of techniques, management practices and regulatory programs to control nonpoint sources of pollution; promotes the consideration of cost-effective alternatives to advanced waste treatment construction; promotes water conservation; and assures that effective pretreatment and industrial source control programs are implemented.

The abatement and control program also includes: the development and publication of water quality criteria to reflect the latest scientific knowledge on the kind and extent of all identifiable effects on health and welfare relating to Section 304(a) and in support of Section 307(a) for adding substances to the list of toxic pollutants; the provision of assistance and review of State water quality standards to ensure that acceptable standards are established in each State; the development of guidelines, standards and regulations to correct water pollution problems resulting from such sources as in-place toxicants and discharges from vessels and aquaculture projects; the regulation, implementation and national management of a grants assistance program for the classification and restoration of the Nation's eutrophic lakes; and the national management, coordination and program development regulating the discharge of dredged or fill material, including the review and recommendation of requests from States from Section 404 permit authority.

The emergency response program continues its priority efforts to fully implement the new hazardous substances spill response program, spill prevention program, and the emergency assistance and containment activities related to hazardous waste site incidents. The response and prevention activities associated with oil spill emergencies will continue according to the responsibilities outlined in the National Contingency Plan (40 CFR 1510).

EPA monitoring and analysis activities are coordinated with State and other Federal efforts and include ambient water quality monitoring, data collection, and dissemination of water quality data. Current programs include: implementation of a water monitoring strategy to provide data and analyses needed by top management to establish policy and measure results of clean-up programs; establishment of a clearinghouse for water monitoring data to help improve coordination and integration of data collection efforts; and analysis of monitoring data to assist in development and implementation of standards and regulations. Increasing emphasis is being placed on improving State capability to monitor toxic pollutants, nonpoint sources, and biological impacts.

The Marine Protection, Research and Sanactuaries Act of 1972, as amended, authorizes EPA to regulate the disposition of materials into the oceans, excepting dredge material. Under this authority, a permit program for ocean disposal of waste has been underway since 1973. In addition, EPA has reoriented its oceans program to include a coordinated approach to the problems in the ocean environment. This reorientation includes close interaction with other Federal agencies having ocean-related activities.

Primary objectives for 1981 include:

- Propose regulations for best available technology economically achievable (BATEA) effluent guidelines, new source performance standards (NSPS), pretreatment standards for existing sources (PSES) and pretreatment standards for new sources (PSNS) for the remaining of the 34 primary industries, and promulgate regulations for 21 to 25 industry categories.

- Improve management as specified in the construction grants program management strategy; implement a coordinated approach to grant making, permitting and enforcement as specified in the municipal strategy and policy; meet the treatment needs of the largest 106 metropolitan areas, including pretreatment requirements and combined sewer overflow problems; pursue maximum State participation in construction grants program administration through delegation of Federal activities under Section 205(g) of the Clean Water Act, where capability exists; encourage cost-effective high quality municipal facilities which employ innovative/alternative technologies wherever feasible.

- Respond to oil and hazardous substances spills; designate new hazardous substances on the basis of protection of human health from spills of acute or immediately acting agents (as opposed to chronic or long-term toxic effects).

- Implement national agricultural and urban storm water prototype projects.

- Complete 20 Clean Lakes projects.

- Expand the assessment of sources of toxic pollutants to publicly owned treatment works (POTWs) and assess the effectiveness of pretreatment.

- Primary emphasis within the dredge and fill program will be the continued and expanded review of major and significant permits, along with the development and approval of State programs to control discharges of dredged and fill material.

Purpose - Enforcement Program

The Water Quality program is responsible for implementing a number of components of the Clean Water Act. The program has two divisions: permits issuance and water quality enforcement.

The permit issuance program has responsibility for both determining procedures and issuing permits under the National Pollutant Discharge Elimination System (NPDES) permit program. The permit is the mechanism for imposing limitations, standards and conditions on point source discharges into navigable waters of the United States. At the national level, the program includes regulation writing and revision, national program and policy guidance, and State permit program approval. Regional activities include issuing permits, conducting adjudicatory heargins, and overviewing State permit programs.

The recent program emphasis has been to control indirect pollutant discharges by implementing the pretreatment program which establishes national standards to control the discharge of toxic pollutants into municipal wastewater treatment systems.

The goal of the water quality enforcement program is to assure compliance with Clean Water Act requirements. At headquarters this involves overview, establishing policy direction and guidance, and support for specific regional compliance monitoring and legal actions. Regional activities include emergency enforcement responses, review and evaluation of self monitoring reports inspections, use of administrative sanctions to require compliance, referal and prosecution of lawsuits, and enforcement of non-NPDES requirements.

SUMMARY OF INCREASES AND DECREASE	(in thousands of dollars)
1980 Water Quality Program.....	$337,436
Salaries and Expenses.....	+2,334
The net increase resulted from additional funding for planning and standards ($.4 million); effluent standards and guidelines ($.6 million); strategies implementation ($1.1 million); monitoring and analysis ($.7 million); municipal source control ($.1 million), and enforcement activities ($1.4 million). These increases are partially offset by reductions to health and ecological effects ($.6 million); industrial processes ($.8 million); public sector activities ($.5 million); and monitoring and technical support ($.1 million).	
Research and Development.....	-3,179

The net reduction in extramural support resulted primarily from the decrease of the Great Lakes Program (-$1.9 million); a decrease in the renewable resources (-$1.8 million); and a partially offsetting increase to the Chesapeake Bay Program (+$.5 million).

Abatement, Control and Compliance..... -1,503

The net decrease results primarily from a reduction to the Section 208 areawide waste treatment management grants (-$3.5 million); clean lakes program (-$1.5 million); training grants (-$.5 million). These decreases are partially offset by additional funds for permit issuance (+$2.9 million); enforcement (+$.9 million), and a net minimal increase from all other activities (+$.2 million).

1981 Water Quality Program..... 335,088

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $335,087,700 is requested for 1981. This request, by appropriation account, is as follows:

Salaries and Expenses.....	$112,194,400
Research and Development.....	35,961,300
Abatement, Control and Compliance..	186,932,000

This represents a decrease of $2,347,500 from the 1980 level. The net decrease is comprised of many changes.

A net decrease of $1,719,000 to health and ecological effects results primarily from a reduction of $1,989,300 to the Great Lakes program which will result in less work on the transport and fate of present persistent toxic organic chemicals, and an increase of $613,500 for fresh water ecological effects which will be used to fund activities associated with man s impacts on aquatic systems and to determine recovery rates in ecosystems.

A net decrease of $3,139,600 to industrial processes which reflects the intent of EPA to work with other agencies to utilize other existing funds to undertake any necessary future BMP development; this change reflects the fact that there are already a large number of BMPs available for implementation.

The effluent standards and guidelines activities will be increased by $1.6 million to increase work in industrial hazardous waste controls (e.g. management practices for sludges), energy saving technologies in water pollution and developing regulations for major segments of the "synfuel" industry. A reduction of $9.5 million is made to the Section 208 areawide waste treatment management grant program, a reduction of $580,000 is made to training grants reflecting a nonrecurring congressional add-on in 1980.

An increase of $812,000 for strategies implementation will allow almost a full review of major/controversial dredge and fill permits. The clean lakes program is reduced by $1.5 million. The enforcement activities are being increased by $5.2 million.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate	$331,451
Congressional increases/decrease:	
Travel	-854
ADP	-52
Supplies and Expenses	-1,276
Great Lakes	+2,000
Section 208	-2,500
Academic Training	+580
Ocean Outfall	+1,000
Flathead River Study	+354
Hazardous Substances Accident Assessment	+1,250
Proposed Supplemental for pay raise	+3,863
Reprogramming for authorization workyears	+387
Miscellaneous reprogramming	+1,233
1980 Current Estimate	337,436

The Congress reduced Agency travel costs and supplies and expenses by $2 million each which resulted in decreases to the water quality media of $854,000 and $1,276,000, respectively. The congressional reduction of $1 million to ADP costs resulted in a decrease of $52,000 to this media. A congressional reduction of $2.5 million was also made to Section 208 areawide waste treatment management grants. The Congress also increased programs included within the water quality media: Great Lakes $2 million; ocean outfall, $1 million; Flathead River study $354,000; and hazardous substances accident assessment, $1.25 million. Finally, the Congress provided an increase of $1.5 million for academic training of which $580,000 is applicable to this media.

The proposed supplemental to partially fund the October 1979 pay raise includes $3,863,000 for the water quality media. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $387,000 to this media.

Miscellaneous reprogrammings resulted in the following changes: a decrease to the air media, $133,500; an increase of $2,677,500 from the drinking water media; a transfer of $96,700 to the solid waste media; a transfer of $100,400 to pesticides; a transfer of $77,600 to radiation; a transfer of $5,300 from the noise media, a transfer of $20,700 from the interdisciplinary media; a transfer of $329,400 to toxic substances; a transfer of $68,000 from the energy media; and a transfer of $808,500 to the management and support media.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$387,169	$325,850
Effects of congressional changes	-2,900	...
Effects of pay raise supplemental	+3,863	...
Change in amount of carryover funds available	-63,477	+11,586
Program change	+6,300	-2,348
Effect of reprogramming	+1,620	...
Change in rate of obligations	-6,725	-7,004
Total estimated obligations	325,850	328,084
(From new obligation authority)	(322,436)	313,084
(From prior year funds)	(3,414)	(15,000)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The congressional changes discussed in the previous section are estimated to decrease obligations by $2.9 million. The pay raise supplemental will increase obligations by $3,863,000. Reprogrammings will increase obligations by $1.6 million.

The amount of carryover funds estimated to be obligated in 1980 is $3,414,000, a decrease of $63,477,000 from the 1979 level. In 1981, obligations from carryover funds are estimated to be $15 million, an increase of $11.5 million over the 1980 level.

The obligations related to the program increase were originally estimated as $6.3 million in 1980. In 1981, the program decrease is expected to reduce obligations by $7 million.

A change in the rate of obligation is expected to occur in both 1980 and 1981, creating a decrease to the amount of funds obligated by $6.7 million and $7 million, respectively.

WATER QUALITY

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
PROGRAM LEVELS					
State and Areawide water quality management (Section 208) plans approved	210	40	100	150	+50
State and areawide water quality management (Section 208) Continuation Grants Awarded	200	198	198	175	-13
Clean Lakes Projects Awards	45	60	50	60	+10
Clean Lakes Projects Completed	10	20	20	20	...
Ocean Dumping Permits	60	47	53	47	-6
Construction Grants Awards	2,599	3,400	3,511	2,550	-961
Step I Awards	(982)	(800)	(807)	400	-407
Step II Awards	(818)	(1,300)	(1,548)	1,200	-348
Step III Awards	(799)	(1,300)	(1,156)	950	-206
Active Construction Grants Projects	11,881	10,700	11,725	11,000	-725
State Program Approvals (National Pollutants Discharge Elimination System)	33	37	36	39	+3
Adjudicatory Hearings Settled (Major Sources)	20	60	20	40	+20
Permits issued by EPA:					
Municipal --					
Major	197	207	77	...	-77
Minor	307	...	...	...	...
Nonmunicipal --					
Major	304	441	497	500	-3
Minor	1,992	...	...	...	...
Enforcement Actions (Administrative Orders, Notices of Violation, and Referrals to U.S. Attorneys)	736	1,684	733	1,004	+271
Compliance Inspections	2,010	2,586	2,121	2,771	+650

WATER QUALITY

Health and Ecological Effects

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Health Effects:					
Salaries and Expenses.	$955	$1,224	$2,102	$2,125	+$23
Research and Development.....	5,311	5,849	4,915	5,033	+118
Transport and Fate:					
Salaries and Expenses.	336	281	572	573	+1
Research and Development.....	788	970	837	694	-143
Chesapeake Bay:					
Salaries and Expenses.	918	500	905	410	-495
Research and Development.....	968	2,400	2,010	2,503	+493
Great Lakes:					
Salaries and Expenses.	361	409	1,019	945	-74
Research and Development.....	2,715	1,166	2,570	654	-1,915
Marine Ecological Effects:					
Salaries and Expenses.	2,387	2,168	2,678	2,861	+183
Research and Development.....	694	1,225	968	445	-523
Freshwater Ecological Effects:					
Salaries and Expenses.	4,711	5,882	4,112	3,917	-195
Research and Development.....	2,518	150	915	1,724	+809
Total:					
Salaries and Expenses.	10,168	10,464	11,388	10,831	-557
Research and Development.....	12,994	11,760	12,215	11,053	-1,162
Grand Total.....	23,162	22,224	23,603	21,884	-1,719
Permanent Positions					
Health Effects.....	23	23	32	32	...
Transport and Fate of Pollutants.....	3	5	9	9	...
Chesapeake Bay.....	6	5	6	6	...
Great Lakes.....	9	7	7	7	...
Marine Ecological Effects.....	57	45	58	54	-4
Freshwater Ecological Effects.....	103	119	98	88	-10
Total.....	201	204	210	196	-14

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Full-time Equivalency					
Health Effects.....	32	28	51	50	-1
Transport and Fate of Pollutants.....	7	17	16	15	-1
Chesapeake Bay.....	5	5	11	11	...
Great Lakes.....	14	9	13	13	...
Marine Ecological Effects.....	89	72	109	117	+8
Freshwater Ecological Effects.....	147	156	140	125	-15
Total.....	294	287	340	331	-9

Budget Request

The Agency requests a total of $21,884,000 and 196 permanent workyears for this program, of which $10,829,800 is for the Salaries and Expenses appropriation and $11,054,200 is for extramural purposes under the Research and Development appropriation, increases of $558,300 and $1,160,700 respectively. The net decrease of $1,719,000, and a 14 permanent workyear decrease includes: an increase of $140,900 for the evaluation of the health effects associated with alternate sludge disposal practices; a decrease of $141,800 which will extend the validation of recently completed models by one to two years and assistance in the application of models for waste load allocations be reduced by approximately 25 percent; a decrease in Chesapeake Bay Study of $1,900; a decrease in Great Lakes research of $1,989,300 which will result in less work on the transport and fate of present persistant toxic organic chemicals; a decrease of $340,400 which will result in the elimination of research on the effects of complex industrial effluents and a reduction of work on sublethal responses of marine organisms to pollutant exposure; and a $613,500 increase in freshwater ecological effects which will be used to fund activities associated with man's impacts on aquatic systems and to determine recovery rates in ecosystems. The decrease of 14 permanent workyears in the freshwater and marine ecological programs will shift some activities to the extramural program and are consistent with the program changes described above.

PROGRAM DESCRIPTION

The health effects research program supports three national goals and policies set out in the Federal Water Pollution Control Act: to eliminate the discharge of pollutants; to attain water quality which provides for recreation; and to prohibit discharge of toxic pollutants in harmful amounts. The research efforts will be directed toward:

- Determination of the health implication of existing and innovative technology for the treatment and disposal of wastewater and sludge.
- Development of rapid screening tests suitable for extrapolation to man for the characterization of toxic pollutants in complex effluents.
- Determination of the feasbility of establishing criteria for the safe reuse of wastewater for potable, industrial and aquacultural purposes (in conjunction with the public sector water quality program).
- Determination of the health effects of priority organic consent decree chemicals.

60-531 O - 80 - 32

The research addressing health impacts of new technologies developed in the control technology program will be assessed so that the Agency can make recommendations for safe and effective changes in treatment methods. It includes studies on the health effects of aerosols from land application to help establish safe siting practices. Toxic organic contaminants are an important area of water quality health effects research. Health effects data bases for the regulation of identified priority pollutants will be established and methods for identifying currently unrecognized organic contaminants through bioassays will be developed. In addition, the program provides technical assistance to EPA regional and program offices through short-term studies, consultation and expert testimony in legal proceedings.

The primary objective of the transport and fate program is to provide a comprehensive set of practical, tested state-of-the-art tools for water quality management directed primarily at wasteload allocations for nutrients and toxics, advanced waste treatment justifications and the areawide wastewater management planning (Section 208) process. Verified and demonstrated models for water quality impact assessment will be developed and/or evaluated, and the technology transferred to the user. The emphasis will be on nutrient and toxics transport and fate, together with related loading models for rural, suburban and urban areas. Limited technical assistance will be provided in the use of these tools, and in the evaluation of results obtained therefrom.

The Chesapeake Bay program was developed in response to a Congressional mandate that required EPA to conduct a study of the Bay, define the factors adversely impacting the environment, develop research to address adverse factors, and define management strategies to ameliorate degradation in the Bay due to pollution. The program has been developed through a cooperative effort between citizen groups, state environmental agencies (Virginia and Maryland), and the EPA.

The results of integrated studies in three priority areas i.e., toxic substances, eutrophication and submerged aquatic vegetation will provide a predictive capacity to assess the consequences of pollutant loadings on the Chesapeake Bay in terms of effects on the ecosystem, on organisms, on human health, and on the economic impact of the uses made of the system. Capacity to predict these impacts will aid management decisions at all government levels.

The basic objective of the Great Lakes research program is to provide the scientific and technical base needed to effectively manage water quality in the Great Lakes. This includes providing methods for assessing the sources, fate, effects, and relative importance of physical, chemical, and biological pollutants in the Great Lakes and for translating human exposure and water quality goals into pollution source control requirements. An integral part of the program is the development, improvement, and adaptation of mathematical predictive models for translating information on existing or projected pollution loadings into ambient water quality impacts and human exposure levels. This research supports the U.S.-Canadian International Agreement (1978) and EPA responsibilities under the Clean Water Act.

The marine ecological effects research program is designed to provide information on which to base legally defensible criteria, standards, and guidelines for effective pollution control programs and treatment strategies. This program includes research in the following areas: (1) determination of the effects of specific pollutants or pollutant combinations on representative or key sensitive organisms in aquatic ecosystems and on critical ecosystem parameters and processes; (2) investigation of the physical, chemical, and biological transformation products of pollutants in marine ecosystems; (3) development of mathematical ecosystem simulation and laboratory models to aid in the prediction of pollutant stress effects on aquatic biota and ecosystems, and

(4) examination of the transport and effects of pollutants in marine environments. Major areas of study include research on ocean disposal, aquatic toxicology, dredged material, bioaccumulation, wetlands, and analytical techniques.

The goal of the freshwater ecology research program is to determine the effects and fate of pollutants in freshwater aquatic systems, including streams, impoundments, and natural lake systems. The program is designed to gain an understanding of the structure and function of natural systems and the effects of pollutants, singly and in complex mixtures, on these systems and on individual species, populations, and communities of aquatic organisms. This includes research on the recovery rates of damaged ecosystems, monitoring methods, and investigations of socio-economic factors.

The characteristics of the physical, chemical and biological transformation products of pollutants in freshwater ecosystems are studied to determine their impact and fate. Laboratory models and mathematical simulations are developed to aid in predicting pollutant stress effects on acquatic biota and ecosystems.

Some of the major areas of research include: (1) development and evaluation of test methods and protocols for aquatic toxicants and/or detection of mutagenic/carcinogenic alterations; (2) evaluation of the effects of complex effluents; (3) development of rapid screening methods to predict the bioaccumulation potential of organic chemicals and trace metals in biota; (4) field validation studies and definition of new problem areas; (5) determination of best alternative waste treatment processes; (6) characterizatior and determination of the effects of non-point source (NPS) pollutants on water quality in rural and urban areas; (7) determination of the productivity and function of freshwater wetlands and pollutant impact within these systems; (8) evaluation of the ecological effects of land application of treated municipal wastes; and (9) research on pollutant perturbations in cold climate ecosystems.

HEALTH EFFECTS

1979 Accomplishments

During 1979, obligations totaled $6,256,200 of which $954,700 is for salaries and expenses and $5,311,500 for extramural research activities. Specific accomplishments include the following:

- In a study to determine the frequency of gastrointestinal diseases, incidences were found to be marginally higher in populations exposed to aerosols from wastewater sprinkler irrigation as compared to populations exposed to aerosols from non-wastewater sprinkler irrigation systems. Adults were found to be as susceptible as children in this study. This study, and other related studies, have implications the safe siting and design of wastewater irrigation systems.

- A symposium on disease risks of exposure to wastewater and wastewater aerosols from activated sludge plants held in September 1979 reported the results of several studies of the health hazards presented by aerosols from conventional secondary wastewater treatment facilities. The material presented at the symposium will be helpful in developing policy on the siting of conventional wastewater treatment systems. While some increases in antibodies to infectious diseases were noted among those exposed to wastewater aerosols, a pattern of increased incidence of serious adverse health effects was found.

- Epidemiological studies linking infectious diseases in swimmers to water quality characteristics have been completed. Results from these studies are being used to develop recreational water quality criteria for marine waters. Pilot studies for freshwater beaches were conducted at four places across the country in support of freshwater criteria which must also be developed.

- Although the development of a simple blood test for the measurment of human exposure to individual organic chemicals is still in the early stages, initial results have documented that the metabolites of carbon tetrachloride, chloroform, and benzapyrene do bind hemoglobin. Demonstration of such binding was the first critical test for determining whether development of such a human dose monitor was feasible.

1980 Program

The Agency resources for water quality health effects research in 1980 are $7,016,400. Included in this total is $2,101,800 for Salaries and Expenses, and $4,914,600 for Research and Development. Highlights of the 1980 research program include:

- Further study of the health implications of land application for the treatment and disposal of wastewater and sludge.

- Research which supports development of criteria for the safe reuse of wastewater for potable, aquacultural, and industrial purposes.

- Completion of the marine recreational water quality criteria.

- Completion of the freshwater bathing beach studies which are critical for developing freshwater recreational water quality criteria in 1981.

- Continuation of comparative toxicology studies which compare aquatic bioassays for the detection of toxics in water with results obtained in traditional mammalian studies.

- Initiation of a program which will fill deficiencies in the health data base for the consent decree pollutants. Research on the first ten pollutants will begin in 1980. Ten more will be selected and studied each year until the total number (65) is complete.

1980 Explanation of Change from Budget Estimate

The net decrease of $56,600 results from several actions. An increase of $49,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million ADP reduction resulted in a decrease of $2,200 and $1,300, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $102,500 to this activity.

1981 Plan

The requested resources for water quality health effects research in 1981 are $7,157,300 and 32 permanent workyears, an increase of $140,900 over 1980. Of this amount $2,124,500 will be expended for salaries and expenses and $5,032,800 for extramural research

activities. The increase of $140,900 will be used to evaluate the health effects of alternate sludge disposal practices such as incineration, co-incineration, pyrolysis. This research is important because very little is known on the subject and, with the phasing out of ocean dumping of municipal sludges, more cities are turning to these technologies for sludge disposal.

The major program thrust will be to determine the health impact of land disposal of wastewater and sludge. The health impact of likely new technologies developed in the Agency control technology program will be assessed so that the Agency can make recommendations for safe and effective changes in treatment methods. Since many areas of the country have a shortage of water, and because the cost of sludge disposal is currently around one billion dollars a year, it is important to develop safe and economical technologies for the beneficial utilization of wastewater and sludge. This research program looks at the human health impact of viruses, parasites, and certain heavy metals including cadmium, which are found in wastewater and sludge and which may be passed on to humans through the food chain or through contamination of ground water resulting from land applications.

Another area requiring major effort relates to the 65 consent decree pollutants. Section 304(a) of the Clean Water Act requires that EPA publish and update water quality criteria. In a 1976 consent decree with the Natural Resources Defense Council, 65 toxic pollutants were identified for which EPA was required to produce water quality criteria. These criteria were published for public comment in 1979. In developing water quality criteria for these pollutants, scientists were hampered by the lack of data on many of the pollutants. Studies to repair data gaps for 10 of the 65 pollutants were begun in 1980. This effort will be completed in 1981 and studies will begin on another group of 10 pollutants. This research will support the revision or validation of the standards in areas where data was previously marginal.

Fresh water recreational water quality criteria will be completed in 1981. This research links epidemiology with micro-biological and chemical analyses of recreational waters. Understanding the relationship of various water quality parameters to disease in swimmers and participants in other water sports will make it possible for EPA to determine the most reasonable regulations necessary to protect the public health.

We will continue to investigate the health effects resulting from the reuse of wastes for potable, industrial, and aquacultural purposes. Data from this research will support the development of criteria or guideline documents for the safe reuse of wastewater.

The program will continue to seek improved toxicological methods for predicting the impact of water contaminants on human health. Bioassays using short-lived aquatic species will be compared to mammalian test systems which have been traditionally used as predictors of human health impact. Blood tests which relate exposure to dose are being developed as a measure of carcinogen exposure and as a means of improving extrapolation from animal to human studies. This comparative toxicology research, if successful, will decrease the cost of developing a health data base on a pollutant. The blood test which monitors dose response will reduce the uncertainties in extrapolation and help reduce the need for high safety factors sometimes used in developing criteria or standards because of uncertainties in the extrapolation from lab animal to man. Regulating pollutants at levels higher than is actually needed to protect human health is then less likely to occur.

TRANSPORT AND FATE

1979 Accomplishments

In 1979, the program obligated $1,123,600, including $335,600 for in-house expenses and $788,000 for extramural expenses. Major accomplishments are listed below.

- Completion of the Hydrologic Simulation Program - FORTRAN (HSP-F), a comprehensive simulation package for assessing the impacts of rural point and nonpoint source pollution on receiving water quality.
- Testing of the basin-scale model set in the Sandusky and Iowa-Cedar river basins, and the Chesapeake Bay.
- Completion of the ARM/EXPLORE model set. This model set provides pesticide and related sediment movement prediction capability for the assessment of point and nonpoint source impacts of pesticides and other specific toxic organic compounds.
- Completion of an initial feasibility study of a methodology for conducting environmental mass balances, i.e., a procedure for comparing quantities of a pollutant released to the environment from all sources and environmental levels to ensure that all of that released is accounted for.
- Publication of a comprehensive summary of the state-of-the-art formulations used in water quality modeling, including accepted values for associated model coefficients.

1980 Program

In 1980, the Agency has allocated a total of $1,409,400, including $572,000 for Salaries and Expenses, and $837,400 for extramural purposes under the Research and Development appropriation. Program highlights include:

- Establishment of a Water Quality Modeling Center to provide computer programs and limited technical assistance to the user community.
- Testing and evaluation of the HSP-F simulation package for assessing impacts of point and nonpoint pollution sources. Workshops in HSP-F use will be conducted and a HSP-F executive summary published.
- Development of a simplified toxics evaluation manual based on the basin-scale methodology already developed.
- Conduction of a feasibility study for the establishment of a centralized water quality modeling data base.
- Initiation of a project to estimate quantitative and qualitative performance of commonly-used water quality models.
- Implementation of in-house studies on pollutant sorption and transformation processes.

1980 Explanation of Change from Budget Estimate

The net increase of $158,400 results from several actions. An increase of $16,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $3,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $11,700 to this activity.

A reprogramming of $20,000 was made to the management and support media to ORD lab support for lab maintenance costs due in part to increasing costs of energy. Also, the number of service contracts have increased as labs undergo RIFs and the services of maintenance personnel must be replaced by contracts.

A reprogramming of $50,000 was made to water quality characterization and measurement methods development to help fund the tapes analysis work being done for the Effluent Guidelines Division.

A reprogramming of $179,000 was made from the water quality resources-renewable resources to reflect the activity in which actual work is to be performed, without any change in the program plan.

A reprogramming from the energy health effects ($33,000); and from measurement system instrumentation development for energy related pollutants ($15,000), for a contract to plan a research program to integrate the physical chemical transport models with the ecological fate models.

1981 Plan

The Agency requests a total of $1,267,600 and 9 permanent workyears for this program, of which $573,200 is for the Salaries and Expenses appropriation and $694,400 is for extramural purposes under the Research and Development appropriation. The net decrease of $141,800 comes from the Water Quality Modeling Center established in 1980 on the model testing and evaluation activity. The reduction in model testing and evaluation will extend by 1 to 2 years, the time required to validate recently completed models for translating nonpoint source loadings into receiving water quality impacts. In 1981 the water transport and fate program will:

- Continue operation of the Water Quality Modeling Technical Assistance Center at a moderately reduced level.
- Adapt existing loading and water quality models to handle consent decree toxics.
- Develop and maintain data files for use in developing model coefficient applicable to the range of environmental conditions to be encountered, as necessary, to apply the models without extensive data collection at each site of application.
- Improve capability to model conventional pollutant/sediment interactions.
- Continue evaluation of the capability of models to assist in making wasteload allocations to evaluate advanced waste treatment facilities and best management practices.
- Continue studies of pollutant sorption and transformation processes.

CHESAPEAKE BAY

1979 Accomplishments

In 1979, this program utilized $1,886,100, of which $917,900 was for in-house expenses and $968,200 for extramural purposes.

During 1979, a program plan with the states of Maryland, Virginia, and Pennsylvania for studying the Chesapeake Bay was developed. A citizens program was established which facilitated involvement of citizens in the planning and management of the programs and incorporation of their concerns into the management decision making process. Integrated studies in the highest priority areas (toxics substances, submerged aquatic vegetation, and eutrophication), were further developed. A data management effort to adequately handle the information developed by this program and an environmental management program to gain a better understanding of present Bay management agencies and mechanisms were initiated.

1980 Program

In 1980, the Agency has allocated $2,914,900, of which $904,900 is for the Salaries and Expenses appropriation and $2,010,000 is for extramural purposes under the Research and Development appropriation.

The 1980 program is continuing integrated studies initiated in 1978 to that management decisions at all the government levels can be based on a predictive capability to assess the consequences of pollutant loadings on the Chesapeake Bay. This will be done in terms of effects on the ecosystem, on organisms, on human health, and on the economic impact of the uses made of the system. The three highest priority problem area studies are being continued through ecosystem simulation, data acquisition and synthesis, and through identification and evaluation of control alternatives in conjunction with the abatement and control decision units of this program.

Toxics substances source assessment studies will be an analysis of the introduction of pollutants into the Chesapeake Bay ecosystem from point and non-point sources. This information will be used to predict current and future loadings under a series of alternative development projections and management strategies. The transport and fate models will develop bay-wide projections. These projections are to be used in exposure effect models to evaluate the management strategies proposed to achieve environmental goals, standards, and criteria.

The eutrophication and submerged aquatic vegetation management units will produce bay-wide assessments of projected ecosystem changes. The reports will be integrated into and will guide abatement and control development projects designed to mitigate specific non-acceptable trends.

A study program with other agencies to evaluate the water quality problems induced by dredging and spill disposal and various hydrological modifications is being initiated. Management strategies to mitigate these problems and supplement the Department of the Interior studies on the Potomac Estuary are being developed. These efforts are directed toward hydrologic and basic water quality models that provide information to evaluate the impact of modified waste treatment strategies on this major tributory estuary. Studies of existing management agencies and mechanisms are continuing and will provide the basis for a better understanding of the factors affecting and influencing the Bay decision process.

State participation programs, with the states of Maryland and Virginia, and citizen participation programs are continuing to provide key coordination links between the states, the public and the Chesapeake Bay program.

Development of a data management system is continuing. This system will handle the data produced by this program and provide the basis for a centralized data bank for use by all local, state and Federal groups on the Bay.

1980 Explanation of Change from the Budget Estimate

The increase of $14,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation.

1981 Plan

The Agency requests a total of $2,913,000 and 6 permanent workyears, of which $409,700 is for the Salaries and Expenses appropriation and $2,503,300 for the Research and Development appropriation.

The 1981 Chesapeake Bay program will continue its integrated approach to research in the areas of toxic pollutant effects, submerged aquatic vegetation, and eutrophication. This includes development of a predictive method to assess the effects of pollutant loadings; development of a source assessment for toxic substances and nutrients entering the estuarine system from point and non-point sources; validation of transport and fate models for toxic substances, and evaluation of hazards to the ecosystem and to human health through the use of exposure effects models; and acquisition and synthesis of data to evaluate control options to halt eutrophication and major ecosystem changes such as the disappearance of submerged aquatic vegetation. The environmental management study will continue to evaluate existing management structures that influence decision processes affecting the Bay. Reports for toxics submerged aquatic vegetation, eutrophication, and the environmental management study will be produced.

The data management system will be further developed to handle the data produced in the studies under this program and provide the basis for a centralized data bank for the Chesapeake Bay.

Long-term environmental management structures for the Chesapeake Bay will be recommended. These management structures will be based on the information gathered during this program.

GREAT LAKES

1979 Accomplishments

In 1979, the program utilized $3,576,100 of which $861,300 was for in-house expenses and $2,714,800 was for extramural expenses. In 1979 the program:

- Participated with other members of a bilateral technical work group, under the aegis of the U.S. Department of State and the Canadian Department of External Affairs, in the evaluation and use of five mathematical models to develop phosphorus loading objectives for the Great Lakes. The results will serve as the basis for revised treatment requirements to be placed on dischargers to the Great Lakes. These revised treatment techniques will be developed by the IJC (including Region V).

- Identified and tracked four major types of contaminants in Lake Superior, using remote sensing techniques.

- Completed three years of sampling of polychlorinated biphenyls (PCB's) and metabolites in fish and particle size fractions indicative of zooplankton and phytoplankton in Saginaw Bay and adjoining portions of Lake Huron. This information will be used in development of a mathematical model to assess the movement and fate of PCBs in the Great Lakes and the impacts of various proposed control schemes on human exposure levels.

- Completed a study of PCB's in the water and sediment of Lake Superior. Concentrations at various geographical locations were documented and these and similar studies results described above will be used in the development of a model for predicting the transport and fate of toxic organic contaminants in the Great Lakes.

1980 Program

In 1980, the Agency has allocated $3,588,800 to this program of which $1,018,800 is for Salaries and Expenses and $2,570,000 is for extramural purposes under the Research and Development appropriation. Major activities in 1980 include:

- Determination of the validity of earlier projections of water quality improvements resulting from nutrient reductions to the Great Lakes.

- Determination of pathways and reservoirs of PCBs and selected other persistent toxic organic chemicals in the Great Lakes.

- Determination of rates of basic lake processes influencing toxicant behavior in the Great Lakes.

- Development of a series of mathematical models for simulating the transport, bioaccumulation, and loss of toxicants in the Great Lakes. The revised treatment requirements will be developed by the International Joint Commission (including Region V), not by ORD. ORD's obligation was to assist in selecting and using the models.

1980 Explanation of Change from Budget Estimate

The net increase of $2,013,800 results from several actions. An increase of $13,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional add-on of $2,000,000 was made to the Great Lakes program.

1981 Plan

The Agency requests a total of $1,599,500 and 7 permanent workyears for this program, of which $945,000 is for the Salaries and Expenses appropriation and $654,500 for extramural purposes under the Research and Development appropriation. This is a net decrease of $1,989,300 from 1980 which results from a congressional add-on which was not carried into 1981. The program will continue with the activities underway in 1980, but with decreased emphasis on assessments of the transport and fate of persistent toxic organic chemicals present in the Great Lakes.

The research program will be directed at:

- Development of a management strategy for the control of nearshore nuisance algal growths.

- Continuation of verification of mathematical nutrient-phytoplankton models and associated projections of nutrient reduction requirements.

- Determination of pathways and reservoirs of PCBs and selected other persistent toxic organic chemicals in portions of Lakes Michigan and Huron.

- Development of framework of mathematical models for simulating the transport, bioaccumulation, and loss of persisent toxic organic chemicals in portions of Lakes Michigan and Huron.

MARINE ECOLOGICAL EFFECTS

1979 Accomplishments

In 1979, the program obligated $3,080,500. This includes $2,386,600 for in-house expenses and $693,900 for extramural purposes. Major accomplishments include:

- In support of the EPA water quality consent decree the program: developed defensible guidelines for determining quality criteria, assembled, reviewed and analyzed toxicological data bases, conducted acute, chronic toxicity and bioconcentration potential to fill data gaps in the toxicological data bases, and prepared criteria documents for about half of the pollutants in support of the EPA water quality consent decree program.

- Completed the technical support document for the regulation promulgated pursuant to Section 301(h) of the Clean Water Act of 1977. This document explains the scientific and technical requirements of the regulation. The successful implementation of this program, following the procedures outlined in this document, could result in the saving of over $2 billion in construction funds, significant savings in energy due to lower treatment requirements, and a wealth of scientific information regarding the effects of municipal waste dischargers on marine systems.

- Completed a report on a benthic bioassay, using marine macrobenthos, for sediment toxicity. This procedure may be used in the dredged meterial disposal permit program and the ocean dumping permit program.

- Completed the fourth annotated bibliography on biological effects of metals in aquatic environments and began publication. This account lists 886 titles of selected articles from the technical literature on the subject of toxicological and physiological effects.

- Reported advances in marine aquatic analytical techniques. These advances were in the area of Gas Chromatography-Mass Spectrometry analysis of organic pollutants in the marine environment, and in the area of sample preparation techniques in the determination of silver, a priority pollutant commonly associated with municipal and industrial effluents, in marine organisms.

1980 Program

In 1980, the Agency has allocated $3,646,200 to this program, of which $2,678,300 is for Salaries and Expenses and $967,900 is for extramural purposes under the Research and Development appropriation.

Research in the area of water quality criteria development is continuing to emphasize development and validation of techniques (bioassays, biomathematical indices, behavioral indices and physiological indices) to determine the effects of pollutants on both organisms and systems. This research is being coordinated with related research conducted in the areas of pesticides and toxic substances. These techniques, and the information resulting from their use, will be used in the ocean dumping and dredged material disposal permit program to update water quality criteria and effluent standards, and to make decisions concerning the registration of pesticides and toxic substances.

The development and refinement of marine analytical techniques will be continued. Emphasis will be given to those techniques which measure trace elements in sediments and organisms. The aquatic organism culture research program will, in addition to providing experimental stock for other areas of research, conduct research on the nutritional requirements of marine organisms and develop culture methodology for rearing and holding experimental organisms.

Continuing efforts in the area of ocean outfalls will emphasize the municipal discharge research, although some research will be conducted on industrial discharges. This research will determine the response of marine organisms and ecosystem to physical factors influencing pollutant transport and retention: the dispersal and accumulation of wastes discharged from ocean outfalls; the size and configuration of mixing zones; the effects of ocean discharges; the responses of an estuary to the relaxation of sewage stress; and the optimum type of treatment for ocean outfalls for municipal wastes, based on the impact of various levels of sewage treatment.

Ocean disposal research will continue to focus on problems relating to the disposal of dredged materials. This research is being coordinated with the U.S. Army Corps of Engineers through a joint technical committee on criteria for dredged and fill material. Emphasis will be given to the validation of benthic bioassay procedures, studies of pollutant availability from dump sites, and development of biological indices for use in impact assessments. It should be noted that this bioassay research will be used in both the ocean dumping permit program and the dredged material disposal program.

Wetlands research is being shifted away from boundary definition work and more emphasis will be given to studies which will address questions of productivity and function. Information useful in determining which wetlands are the most productive or functionally important will be used in the dredged material disposal permit program and for areawide planning. This research is being closely coordinated with the freshwater wetlands research described in the freshwater ecological effects section.

1980 Explanation of Change from Budget Estimate

The net increase of $283,200 results from several actions. An increase of $101,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $6,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $61,700 to this activity.

A reprogramming of $54,000 was made to the management and support media to ORD lab support for lab maintenance costs due in part to increasing costs of energy. Also, the number of service contracts have increased as labs undergo RIFs and the services of maintenance personnel must be replaced by contracts.

A reprogramming of $62,600 was made from the water quality media from water quality freshwater ecological effects as a result of the Corvallis and Las Vegas labs after a 1979 RIF.

A reprogramming of $40,000 was made within the same media to water quality characterization and measurement methods development to help fund the tapes analysis work being done for the Effluent Guidelines Division.

A reprogramming was made from water quality characterization and measurement methods development ($4,000); from water quality freshwater ecological effects ($11,000); from water quality renewable resources ($6,000); and from effects related pollutants ($20,000), for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models.

A reprogramming of $210,000 was made from water quality freshwater ecological effects within ORD to provide for the personnel reassigned from freshwater ecological effects to marine ecological effects.

1981 Plan

The Agency requests a total of $3,305,800 and 54 permanent workyears of which $2,860,700 is for the Salaries and Expenses appropriation and $445,100 is for the Research and Development appropriation. The decrease of $340,400 and 4 permanent workyears will result in the elimination of research on the effects of complex industrial effluents and a reduction of the aquatic toxicology effort concerned with sublethal responses of marine organisms upon exposure to pollutants. The reduction was effected in order to shift resources to other priority areas, particularly the toxics and hazardous waste areas.

In 1981, the program will again emphasize aquatic toxicology, ocean disposal, the effect of dredged material, analytical techniques and wetlands.

The aquatic toxicology research will develop, revise, and validate procedures (bioassays, biomathematical indices, behavioral indices and physiological indices) to be used to determine the effects of pollutants on both organisms and ecosystems. These techniques, and the information derived from them, will be used not only in the development of water quality criteria but also in the registration/reregistration of pesticides, in evaluating materials to be disposed in the ocean, in premarked testing of toxic substances and in the development of ocean discharge criteria. This research will be coordinated with similar research in toxic substances and pesticides.

Closely related to this research is the research to develop methodologies for culturing selected marine organisms to assure the availability of a variety of appropriate organisms of a known quality for use in bioassay procedures. Marine analytical techniques research will continue to develop or revise sampling, extracting, and analytical techniques, as well as quality control procedures, for the priority pollutants in water, sediments and tissues of marine origin. This work will result in a methods manual and will strongly support other research relating to these pollutants. Research to determine the kinetics of pollutants bioaccumulation and loss in shell fish exposed to low levels of selected pollutants will be conducted. This research will provide information to be used in the development of water quality criteria and in evaluating biological monitoring data.

Work on ocean outfalls will focus on municipal discharges. This research will determine the response of marine organisms and ecosystems to physical factors influencing pollutant transport and retention; the dispersal and accumulation of wastes discharged from ocean outfalls; the size and configuration of mixing zones; the effects of ocean discharges; and the optimum type of treatment for ocean outfalls for municipal wastes, based on the impact of various levels of sewage treatment. This research will provide information which will assist in evaluating 301(h) permit modifications and monitoring programs, be valuable in developing/revising ocean discharge criteria, and in the formulation of NPDES permits for publicly owned treatment works (POTWs).

Research on dredged material will focus on the development and validation of benthic bioassay procedures for use in the Section 404 and ocean dumping dredged material disposal permit programs. These procedures will be used to evaluate the quality of dredged material to be discharged.

Studies to determine the relationship between sediment contamination and toxicity, pollutant bioaccumulation, pollutant availability and effects of marine organisms will be conducted. This information will be used in making permit decisions relating to dredged materials, assessing in-place toxic problems such as those associated with harbors, and evaluating sediment problems associated with ocean outfall discharges. This research will be coordinated with the U.S. Army Corps of Engineers through a joint technical committee on criteria for dredged and fill material.

Wetlands research on boundary definition will be reduced in 1981. The information from this research will be used to determine which areas are wetlands, and therefore fall under the jurisdiction of Section 404. Emphasis will be given to wetland productivity and function. Information useful in determining which wetlands are the most productive or functionally important will be used in the dredged material permit program and for areawide planning. The effects of stress (pollutant and dredged material) and the role of catastrophic events (such as storms) will be studied to evaluate their importance to wetland productivity and function. This wetlands research will be closely coordinated with the freshwater wetlands research.

FRESHWATER ECOLOGICAL EFFECTS

1979 Accomplishments

In 1979 the program obligated $7,229,800. This includes $2,518,400 for extramural activities and $4,711,400 for inhouse expenses. In 1979 the program:

- In work jointly funded with the drinking water health program, the presence of chrysotile asbestos fibers in human urine samples collected from individuals using drinking water free of chrysotile fibers was demonstrated. These results are important in that food chain sources are now suspected of being the vectors for carrying this material to man. The drinking water health program is now determining the significance of these findings through follow-up studies.

- Described the geographical pattern of mining dust and flyash particle deposition in Northeastern Minnesota by x-ray diffraction and electron microscope analysis of particles in snow samples. This information will be used by EPA to determine the land and lake water surface areas impacted by large coal-fired power plants and by asbestos mining in Minnesota and southern Canada.

- Produced chronic toxicity data with fathead minnows and Daphnia magna on 10 consent decree chemicals for use in water quality criteria development.

- Determined the major metabolites produced by fish and invertebrates exposed to representatives of four important chemical classes; halomethanes, chlorinated etnanes, chlorinated ethylenes, and chlorinated benzenes.

- Determined through studies at a number of pesticide manufacturing plants that secondary waste treatment decreases the acute toxicity of liquid wastes by approximately 96 percent. These results enable the Agency to specify water quality criteria and make management decisions about the level of treatment to effect ambient water quality.

- Found evidence that the lethal effect of two or more heavy metals common in electroplating wastes is usually additive. As a result, water quality criteria for various trace metal mixtures can be established by the Agency.

- Determined the tolerance of species of warmwater fish during reproductive periods to turbidity and sediment; information was based on a review and statistical analysis of existing literature.

- Completed a study using artificial stream channels relating the degree of stream bed sedimentation to fish growth in cold water streams.

- Determined baseline biological conditions in three agricultural watersheds which are included in the joint EPA-USDA Model Implementation Program.

- Developed a procedure for use in monitoring salmon and trout spawning grounds and assessing the impact of sedimentation.

- Evaluated lake restoration methods, including economic impacts in conjunction with the Clean Lakes Program.

- Evaluated the effects of pollutant stress on freshwater wetlands and their relation to wetland role and function, especially productivity and foodweb complexes.

- Developed methods and conducted tests to determine effects of metals and 13 pesticides on ocean survival of salmon smolts, determined the effects of intermittent exposure of salmonids to pollutants, and developed and initiated testing in 10 laboratory stream microcosms.

- Determined effects of water hazardous on acute and chronic toxicity of six metals to Daphnia for consent decree chemical criteria.

1980 Program

In 1980, the Agency has allocated a total of $5,027,300 to this program, of which $4,112,300 is for Salaries and Expenses and $915,000 is for extramural purposes under the Research and Development appropriation.

In 1980 the program will concentrate upon environmental exposure work, which includes effects and human food chain analyses, methods development in environmental toxicology (including bioassays and chemical structure analyses), and characterization of pollutants. The research program also plans to identify and fill in research gaps in the analyses of the 129 Consent Decree chemicals to support preparation of water quality criteria documents.

The following activities will be pursued in 1980:

- Development of methods for predicting effects of reduced nutrient loading to lakes with emphasis on the verification of methods developed and identification of costs associated with various restoration techniques.

- Development of methods to assess impact of nonpoint source pollutants, such as suspended sediments, on stream systems.

- Assessing the effectiveness of best management practices for nonpoint sources in protecting and/or enhancing stream quality.

- Initiation of methods development to evaluate ecological impact of dredging, particularly relating to Section 404 program, on freshwater ecosystems.

- Development and refinement of methods for directly measuring or integrating the combined toxicity to aquatic organisms of complex effluents which vary both in composition and concentration over time.

- Determination of the usefulness of aquatic organisms as biological models for predicting human effects.

The characterization effort focuses upon the identification of hazardous fine particles in organisms of ecological importance. In particular, we are developing procedures for identifying the properties which govern the biological activity of small particles (such as asbestos fibers) frequently found in biological materials, with emphasis on fate of ingested mineral fibers in drinking water and in finfish consumed by man. All research will use naturally exposed populations such as those using Lake Superior water and consuming regular diet amounts of Lake Superior finfish. Major ongoing activities are:

- Development of scientific data, rationale, and better methods for supporting and establishing water quality criteria and regulations, development of screening tests, rapid chronic tests and test protocol for aquatic biological effects as estimates of effects on humans; tests and methods work on about 15 consent decree chemicals for water quality criteria; reports on shorter, cost effective screening tests and test protocols for consent decree list chemicals, report on effects of consent decree chemicals on salmonid species of Pacific NW; water quality criteria documents for consent decree chemicals.

- Determination of effects of sediments, pesticides and nutrients, singly and in combination, for stream ecosystems and freshwater biota; development of assessment methods and criteria for physical aquatic habitat; determination of rural and urban NPS effects and evaluation of BMP effectiveness, and development of the concept of "wet weather" criteria for NPS pollutants.

- Development of definition for boundaries to freshwater wetlands (compatible with previously developed definition for marine wetlands) and development of a bioassay to determine low level stress on wetland plant carbohydrate reserves.

- Evaluation of environmental effects and impact on the ecosystem and water quality of various state of the art methods of restoring lakes and completion of additional chapters of lake restoration manual.

- Determination of the stress and recovery of outdoor man-made open channel aquatic ecosystems receiving upper Mississippi River water at Monticello, Minnesota, from toxic substances and relative changes in pH.

- Performance of structure-activity correlation studies at the molecular level to evaluate the primary effects of water pollutants upon aquatic life and to understand the initial biochemical and physiological effects.

- Development of a valid certain multiple toxicity approach and models to predict the effects of certain chemical combinations based on the knowledge of the behavior of the individual toxic constitutents.

1980 Explanation of Changes from Budget Estimate

The net decrease of $1,004,700 results from several actions. An increase of $135,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $1 million to ADP resulted in a decrease of $4,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $95,700 to this activity.

A reprogramming of $96,000 was made to management and support for lab maintenance costs due in part to increasing costs of energy. Also, the number of service contracts have increased as labs undergo RIFs and the services of maintenance personnel must be replaced by contracts.

A reprogramming was made to air ecological processes and effects ($187,700), to water quality marine ecological effects ($62,600); to pesticides ecological effects ($93,800); and to toxic substances ecological effects ($281,500), as a result of the reorganization of the programmatic functions of the Corvallis and Las Vegas labs after a 1979 RIF.

A reprogramming of $210,000 was made to water quality marine ecological effects within ORD to provide for the personnel reassigned from freshwater ecological effects to marine ecological effects.

A reprogramming of $38,000 was made to pesticides ecological effects to reflect the reassignment of one employee as a result of the overall cut in positions at the Duluth lab.

A reprogramming of $60,000 was made to water quality characterization and measurement methods development to help fund the tapes analysis work being done for the Effluent Guidelines Division.

A reprogramming of $11,000 was made to water quality marine ecological effects within ORD for a contract to plan a research program to integrate the physical, chemical tranport models with ecological fate models.

60-531 O - 80 - 33

1981 Plan

The Agency requests a total of $5,540,800 and 38 permanent workyears for this program, of which $3,916,700 is for the Salaries and Expenses appropriation and $1,724,100 for the Research and Development appropriation. The increase of $613,500 will be used to fund the development of fresh water quality criteria data for consent decree chemicals where knowledge gaps exist, to increase the research effort in support of the lake restoration program, and to determine recovery rates in polluted ecosystems. The 10-position decrease will result in shifting more of the program's activities to extramural execution. In 1981 the program will:

- Develop scientific data, rationale, and better methods for supporting and establishing water quality criteria and regulations; develop screening tests and test protocols for aquatic biological effects as estimates of effects on humans; test effects of pollution on Pacific Northwest species in stream microcosm and intermittent exposure system.

- Determine additional effects of sediments, pesticides and nutrients, singly and in combination as a contiuation of the 1980 efforts, for stream ecosystems; develop and refine assessment methods and criteria for physical aquatic habitat initiated in 1980; continue to determine rural and urban NPS effects and evaluate effectiveness of BMP's; conduct and refine applied economic evaluations of costs and benefits of NPS control practices initiated in 1980; develop and refine the concept of "wet weather" criteria for NPS pollutants.

- Develop and refine definitions for boundaries of wetlands that began in 1980 and complete a bioassay to determine low level stress on wetland plant carbohydrate reserves.

- Evaluate environmental effects and impact on the ecosystem and water quality of various state-of-the-art methods of restoring lakes, including potential for liberation of toxic substances to the water column, and multiple societal benefits of lake restoration projects; finalize all chapters of lake restoration guidance manual and provide the material to the Office of Water Planning and Standards (OWPS) by August 1981.

- Develop methods to measure aquatic biological effects of complex mixtures and multiple stresses of pollutants to evaluate best practicable technology (BPT) and best available technology (BAT), refine the microcosm method for measuring pollutant effects in multiple species.

- Develop methodology for classifying watershed/stream systems into common categories based on geological, climatic, and morphological factors; initiate study of effects of specific chemical nonpoint source pollutants on aquatic ecosystems.

- Determine the utilization of overflow wetlands in bottomland hardwood systems by aquatic species and determine the importances of these areas to aquatic food webs; determine the role and function of arctic moist tundra systems.

WATER QUALITY

Industrial Processes

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	1981 vs. 1980 Increase + Decrease -
		(dollars in thousands)			
Industrial Processes					
Salaries and Expenses..	$ 1,380	$ 2,485	$ 1,749	$ 1,755	+6
Research and Development.....	5,934	9,215	9,756	9,163	-593
Renewable Resources					
Salaries and Expenses..	1,108	1,291	1,074	319	-755
Research and Development.....	1,962	1,836	1,798	...	-1,798
Total					
Salaries and Expenses..	2,488	3,776	2,823	2,074	-749
Research and Development.....	7,896	11,051	11,554	9,163	-2,391
Grand Total.....	10,384	14,827	14,377	11,237	-3,140
Permanent Positions					
Industrial Processes.....	25	29	33	33	...
Renewable Resources.....	18	28	24	10	-14
Total.....	43	57	57	43	-14
Full-Time Equivalency					
Industrial Processes.....	36	48	43	42	-1
Renewable Resources.....	33	38	32	10	-22
Total.....	69	86	75	52	-23

Budget Request

The Agency requests a total of $11,237,000 and 43 permanent workyears for 1981. This represents a net decrease of $3,139,500 and 14 permanent workyears.

A total of $2,074,200 is for the Salaries and Expenses appropriation, and $9,162,800 for Research and Development appropriation, a decrease of $748,400 and a decrease of $2,391,200 respectively. The decrease of $587,800 in the industrial processes program wil decrease innovative technology development and further development of treatability data fc toxic pollutants. The 14 permanent workyears and $2,551,800 decrease in renewable resourc will result in the termination of the extramural work. The reduction reflects the intent EPA to work with other agencies to utilize other existing funds to undertake any necessary future BMP development. This change reflects the fact that there are already a large numb of BMPs available for implementation.

Program Description

The industrial processes water quality research program deals with point and non-point sources of pollution resulting from the industrial, agricultural, and forestry

sectors of the economy. This program develops and demonstrates new or improved cost effective technology.

The industrial processes portion of the research program concentrates on point sources of water pollution resulting from those mining, manufacturing, service, and trade industries which must meet best available technology (BAT) standards of the Federal Water Pollution Control Act (FWPCA). This program is the realization of a national policy established in the 1972 Amendments which called for a major research and demonstration effort to develop the technology necessary to help eliminate the discharge of pollutants into the Nation's waters.

The program thus develops new or improved technology having industry-wide application short term achievability, and long term viability. Research results also provide a significant data base for the establishment of economically and technically feasible effluent guidelines and treatment parameters for industrial liquid waste discharge permits. As a result of the Natural Resources Defense Council Consent Decree in June 1976, program emphasis has been shifted toward the development of the data required to regulate the discharge of toxic pollutants. The program direction focuses on developing complete waste stream assessments, including chemical and bioassay data, and on developing and demonstrating treatment technology and alternatives for toxic and non-toxic pollutant-materials in industrial waste effluents. High priority is also put on the development and demonstration of reuse and recycle options for industrial wastewater discharges. In addition, this program addresses technology for the prevention and control of spills of hazardous materials, in support of Section 311 of the FWPCA.

The renewable resources research program conducts research related to the control of environmental pollution associated with agricultural and forestry activities, including crop production on both irrigated and nonirrigated lands, forest management practices, and animal production. This research program is integrated with those of the Departments of Agriculture and Interior, and with state universities and land grant colleges. The program encompasses the evaluation and development of total management systems including best management practices (BMPs) and pollution control predictive methodologies to control water, land, and air pollution from the production and harvesting of food and fiber and from their related residual wastes; and, to a lesser extent, the assessment of probable trends in the production of renewable resources and their resulting environmental and socioeconomic impacts.

The renewable resources research effort also supports the development of guidelines to identify and evaluate the nature and extent of agricultural and forestry nonpoint sources of pollution, along with the necessary processes, procedures, and methods to control pollution from these sources as required in Section 304 (f) of the FWPCA. It also responds to the requirement of Section 208 of the FWPCA to support assessment and management of pollutants emanating from nonpoint sources, as required of State and local agencies in the execution of their areawide waste management responsibilities. In addition, Section 208 (j) provides for the Rural Clean Water Program, and makes available cost-sharing grants to agricultural producers for the installation of BMPs to improve water quality. This section places an added urgency on the need for development of methods to select and evaluate cost-effective management systems in order to ensure the effective expenditure of limited Federal resources. As a result of pressure for increased production of renewable resources, efforts will be continued to transfer information concerning the potential environmental impacts of alternative approaches to increased production in order to maintain desirable levels of environmental quality.

In order to develop a basis for selecting and justifying local management techniques for controlling nonpoint source pollutants related to agricultural and forestry production, it has been necessary to: (1) develop methodologies to estimate or determine

background levels of pollution in agricultural and forestry production regions; (2) provide tools for the planner/decision maker to determine the probable environmental consequences of the major agricultural and forestry pollutants, including appropriate predictive methods; (3) provide tools to select and evaluate both the pollution reduct and cost effectiveness of individual and combined management systems; (4) develop cost effective methods that minimize agricultural and forestry pollution by evaluating and demonstrating different systems at different locations; and (5) develop, evaluate, and demonstrate implementation strategies, including socioeconomic and institutional aspec for candidate BMPs.

INDUSTRIAL PROCESSES

1979 Accomplishments

In 1979, the obligations for this program was a total of $7,314,400, of which $1,379,700 was for salaries and expenses and $5,934,700 was for extramural activities. In 1979 the industrial processess program accomplished the following:

- Demonstrated at full-scale the use of activated carbon for control of hydrocarbon emissions from petroleum solvent industrial drycleaning operations.
- Demonstrated treatment of refinery wastewater by means of filtration and activated carbon.
- Demonstrated biological treatment of high strength petrochemical wastewaters.
- Developed a data base for the preparation of effluent guidelines for the machinery, electrical, and electronic product point sources category.
- Demonstrated organic waste recovery for the paper and pulp industry by means of activated carbon and steam stripping.
- Conducted a laboratory study and evaluation of the control of discharges of toxic chlorinated phenolic compounds from bleach plants, and from wood preserving and pulp mills.
- Demonstrated feasibility of achieving best available technology for blast furnaces by use of a mobile wastewater treatment pilot plant.
- Evaluated the technical feasibility of achieving total recycle in integrated steel plants.
- Demonstrated use of a mobile hydraulic system for the diversion of small strea following a hazardous chemical spill episode.
- Developed a mobile system for regenerating activated carbon used to treat hazardous material spills.
- Determined removability of toxic pollutants from textile mill effluents by means of powdered activated carbon.

1980 Program

In 1980, the Agency has allocated a total of $11,505,500 to this program, of whic 1,749,300 is for the Salaries and Expenses appropriation and $9,756,200 is for extramu purposes under the Research and Development appropriation.

In 1980, activities will be focused on research, development and demonstration of control and treatment technologies. Currently available treatment methods will be optimized and innovative technologies will be developed to reduce the level of, destroy or beneficially reuse pollutants. Outputs will be used to further validate the revised effluent guidelines promulgated during 1979 and 1980.

A major program will be initiated for the demonstration of reuse and recycle options for industrial wastewater discharges. This effort will incorporate existing treatment methods and new technology in demonstrations of reuse and recycle systems for selected industrial segments, and will result in widely applicable benefits such as: (1) reduction of wastewater volume, (2) reduction of intake water, (3) cost and energy savings, (4) conservation of water and other natural resources, (5) containment of conventional and toxic pollutants, and (6) progress towards the national goal of "Zero discharge of pollutants."

The hazardous incident program will continue the development of technology for the prevention, identification, and control of hazardous and toxic material spills. Criteria will be developed for use by spill response personnel in determining priorities for chemical spill cleanup and the extent to which cleanup must be conducted. Techniques will be assessed for mitigation of biological damage to and the accelerated restoration of spill impacted water and land areas.

Major research results to be achieved in 1980 include:

- Environmental assessment of industrial waste water and residuals from the petroleum refining industry.

- Determination of the interference by, and removabilty of, heavy metals and refractory organics in municipal waste water treatment systems and elucidation of the processes involved.

- Demonstration of best available technology for coke plants by using the mobile wastewater treatment system developed by EPA.

- Evaluation of air affects of biological aeration basins used by the textile industry for water pollution control.

- Preparation of a guidance manual to be used by those emergency response team personnel who are the first to arrive at the site of a hazardous material spill.

- Development of criteria for determing priorities for cleanup following a hazardous material spill.

- Completion of the feasibility and design studies for a computerized data base for characterization and control of wastewaters from non-fuel extraction industry.

- Establishment of a quick response, inhouse testing and evaluation facility for performing industrial wastewater treatability studies.

- Assessment of the effectiveness of powdered activated carbon for treating leather tanning wastes.

- Initiation of development and demonstration reuse/recycle projects for the iron and steel, textile, organic chemicals, and petrochemicals industries.

1980 Explanation of Changes from Budget Estimate

The net decrease of $194,500 results from several actions. An increase of $49,200 results from the cost of the October 1979 pay raise and is included in a proposal supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and resulted in a decrease of $5,500. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover, authorized workyears resulted in an increase of $238,200 to this activity.

1981 Plan

The Agency requests a total of 33 permanent workyears and $10,917,700 for this program, of which $1,754,900 is for the Salaries and Expenses appropriation and $9,162,800 is for the Research and Development appropriation. This represents a decrease of $587,800. This will decrease innovative technology development in areas such as food and wood production industries and the extension of treatability data for toxic pollutant

In 1981, activities will continue to support the development of timely, technically sound regulations by concentrating on the research, development, and demonstration of control and treatment technologies. Areas to be covered include support of effluent guidelines regulation development, advancement of water pollution control technologies and technology transfer activities.

Special emphasis will be placed on developing a treatability research program that defines the extent to which existing and new technology can be applied to treating toxic pollutants. This data is used to assist the Effluent Guidelines Division in the preparation of regulation and to provide a basis for the writing of permits in situations not covered by existing regulations.

The new program, initiated in 1980, for the demonstration of reuse and recycle options for industrial wastewater discharges will be continued at a high level. Background studies in specific industrial areas will be completed and will be followed, where indicated, by pilot plant or demonstration scale projects. Development efforts underway will yield the necessary data for the implementation of full scale industrial wastewater reuse/recycle systems. Reuse/recycle studies will be initiated in industrial areas other that those currently under study.

The hazardous incident program will continue the development of control technology in support of regulatory needs for control, cleanup and removal of toxic and hazardous spills and for restoration of impacted lands and waters.

Major research results to be achieved in 1981 include:

- Demonstration of a process water recycle system at a petrochemical plant.
- Demonstration of reuse/recycle technology for textile mills which currently discharge to municipal treatment systems.
- Preparation of a guidance manual to achieve maximum recycle/reuse for individual steel plants.
- Demonstration of ion exchange technology for reuse/recycle in the organics chemical industry.
- Demonstration of total reuse/recycle at a specialty organics chemical manufacturing plant.

- Development and evaluation of new technologies specifically designed for application to reuse/recycle systems.

- Development of criteria to predict removals of selected priority pollutants in combined treatment systems.

- Development of a data base for previously unidentified toxic pollutants from iron and steel plants.

- Development of a data base to support effluent guidelines for pesticide intermediates manufacturing.

- Report on best management practices, equipment and techniques to prevent, control, cleanup and remove spilled hazardous and toxic substances.

- Development of bench scale innovative technology for the treatment of broad classes of toxic chemicals to expand the existing treatability data base.

RENEWABLE RESOURCES

1979 Accomplishments

In 1979, this program utilized $3,069,600. This includes $1,107,800 for Salaries and Expenses and $1,961,800 for extramural expenses which were allocated among three subprograms: (1) nonirrigated crop production; (2) irrigated crop production; and (3) animal production. Accomplishments for 1979 include the following:

Nonirrigated Crop Production

- Completion of a study examining the social and economic implications of various policies for controlling water pollution from nonpoint agricultural sources. Such policies could be drafted so as to be consistent with existing legislation and would not have severe adverse effects on the agricultural sector in total.

- Development and initial testing of the Watershed Erosion and Sediment Transport (WEST) Model which links hydrologic and erosion processes occurring on land surfaces with water and sediment movement through stream channels.

- Identification and assessment, on a regional basis, of the current and emerging trends in the U.S. crop production subsector that will have the most significant environmental implications.

- Determination of the feasibility of developing an analytical method that can be applied to determining the costs and water quality impacts of reducing agricultural nonpoint source pollution.

Irrigated Crop Production

- Preparation of an environmental planning manual for salinity management in irrigated agriculture, focusing on combinations of technological and institutional solutions, data requirements, methods of analysis, and formulation of an action program.

- Evaluation of a mathematical model for predicting subsurface irrigation return flow salinity.

- Determination of the impact of various irrigation practices on crop yields, with particular emphasis on corn and wheat.

- Application of a mathematical model for irrigation-related water quality was found to adequately simulate observed salinity variation patterns in the Rio Grande Basin.

Animal Production

- Development of a computer model which simulates feedlot runoff generation and disposal. The model helps establish guidelines and design parameters for feedlot runoff control facilities which will meet FWPCA requirements.

- Completion of a study which developed management practices for feedlot runoff retention ponds and determined the cost of open feedlot runoff control systems.

- Identification of biological and thermochemical processes for recovery of byproducts from animal wastes.

- Evaluation of vegetated field areas as control mechanisms for contaminated runoff from small livestock feedlots.

1980 Program

In 1980, the Agency has allocated a total of $2,871,100 to this program, of which $1,073,300 is for Salaries and Expenses and $1,797,800 is for extramural purposes under the Research and Development appropriation. Research will continue in the same three areas as outlined above. Program activities include the following:

Nonirrigated Crop Production

- Continuation of a full-scale field evaluation program to evaluate the cost-effectiveness of agricultural BMPs to improve water quality; various aspects of this study include evaluating the effects of agricultural land use practices on stream water quality, determining the sociological factors involved in the adoption of BMPs, and analyzing the economics of land use practice effects on water quality.

- Completion of calibration and testing of the Agricultural Runoff Management and Nonpoint Source Models.

- Development of protocols for selection of BMPs to meet water quality standards in watersheds.

Irrigated Crop Production

- Development of manuals detailing total system management for control of pollutant (i.e., salinity, sediments, nutrients, and biocides) in irrigation return flow.

- Continuation of evaluation of soil sampling intensity and siting in characterizat of field soil properties.

- Continuation of assessment of organics and toxic chemicals in surface and groundwater from irrigated agriculture.

Animal Production

- Continuation of field evaluation of practices used for dairy manure management, storage, and field application as these practices influence stream and lake water quality.

1980 Explanation of Change from Budget Estimate

The net decrease of $255,900 results from several actions. An increase of $34,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million for ADP reduction resulted in a decrease of $3,000 and $19,800, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $33,000 to this activity. A reprogramming in order to support costs projected on the basis of 1979 actual expenditures resulted in a transfer to water quality transport and fate ($179,000). A reprogramming of $50,000 was made to management and support, ORD lab support, for lab maintenance costs due in part to increasing costs of energy. Also, the number of service contracts have increased as labs undergo RIFs and the services of maintenance personnel must be replaced by contracts. A reprogramming of $6,000 to water quality marine ecological effects within ORD for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models.

1981 Plan

The Agency requests a total of $319,300 and 10 permanent workyears for this program, all of which is for the Salaries and Expenses appropriation. The decrease of $2,551,800 and 14 permanent workyears will result in the discontinuation of extramural work directed at: (1) quantifying the effectiveness of existing agricultural BMPs in reducing nutrient, pesticide, and other pollutant contributions to receiving waters and (2) evaluating the techniques for selecting agricultural BMPs to improve receiving water quality. The policy decision to eliminate research on the evaluation of Best Management Practices was based on several factors including (a) the current availability of BMPs in 208 plans and the phase-out of that program at the end of 1983; (b) problems with implementing the already existing BMPs; and (c) the considerable level of resources at USDA directed at BMP evaluation. EPA will make every effort to carefully phase out the extramural studies so as to achieve maximum research benefit. In addition, EPA will undertake discussions with other groups that might be interested in assuming responsibility for our reduced activities, particularly the Department of Agriculture which has existing funding in these areas.

Under an interagency agreement with the USDA/Extension Service, technical information will be provided to the Federal and State Extension Services for educational programs relating to implementation of BMPs for abating pollution from agricultural nonpoint sources. Efforts will be focused on EPA Program and Regional Offices, and on State Pollution Control Agencies for providing technical assistance with agriculturally-related pollution problems. Activities will also continue to transfer research-generated data and methodologies to the agricultural user community.

WATER QUALITY

Public Sector Activities

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Wastewater Control Technology:					
Salaries and Expenses..	$2,402	$2,174	$2,727	$2,523	-204
Research and Development.....	12,126	4,257	4,672	4,275	-397
Urban Toxics and Residuals Management:					
Salaries and Expenses..	2,212	2,568	2,605	2,315	-290
Research and Development.....	4,638	5,359	4,924	5,687	+763
Total:					
Salaries and Expenses	4,614	4,742	5,332	4,838	-494
Research and Development.....	16,764	9,616	9,596	9,962	+366
Grand Total.....	21,378	14,358	14,928	14,800	-128
Permanent Positions					
Wastewater Control Technology.....	51	61	63	57	-6
Urban Toxics and Residuals Management...	48	56	58	55	-3
Total.....	99	117	121	112	-9
Full-time Equivalency					
Wastewater Control Technology.....	77	82	79	72	-7
Urban Toxics and Residuals Management...	61	75	75	58	-17
Total.....	138	157	154	130	-24

Budget Request

The Agency requests a total of $14,799,600 for 1981, a decrease of $128,700 from 1980. Included in this total is $4,837,900 for Salaries and Expenses and $9,961,700 for extramural purposes under the Research and Development appropriation, with a decrease of $494,800 and an increase of $366,100 respectively. The net decrease of $128,700 is the result of: a decrease of $601,500 in the waste water systems area eliminating work in aquaculture and disease producing microorganism research, and an increase of $472,800 in the urban systems toxics program will affect to support the innovative and alternative construction grant program.

Program Description

The public sector subactivity develops cost effective technology in support of the EPA's strategies for achieving the water quality goals of the Clean Water Act Amendments of 1972 (PL 92-500). The program addresses the research needs of the construction grants, Section 208 areawide planning, toxic pollutants control, permits and enforcement, the Great Lakes and Clean Lakes programs and nonpoint source programs. These needs generally require that the Office of Research and Development develop new technologies to meet effluent and receiving water quality requirements, generate a data base to guide Agency regulations, develop guidelines for policy, and provide technical support.

The public sector activities program is divided into two program areas: waste water systems control technology and urban systems, toxics and residuals management. Waste water systems control technology involves: (a) development of new or improved treatment processes, (b) cost reduction methods and practices in treatment, (c) land application processes, (d) small waste water flows, (e) urban wet weather technology, (f) water conservation and reuse, and (g) the test and evaluation facility. The urban systems toxic and residuals management program is responsible for: (a) control of toxic compounds in municipal waste water, (b) sludge processing utilization and disposal technology, (c) improved operations and maintenance methods and (d) technical assistance for the implementation of innovative and alternative technologies.

The objective of the wastewater systems program is to develop, demonstrate, and evaluate the cost, reliability and efficiency of improved treatment systems. A new test and evaluation facility completed in 1979 will be operating, primarily using contractors, to conduct the technical research projects. ORD will use the facility to evaluate performance, operating cost, and other scientific factors associated with newly developed technologies for wastewater treatment processes. Design data will be examined in both the experimental and actual use modes for possible revisions.

Other significant efforts in the waste water systems control technology program are cost and energy consumption reduction and improved efficiency of publicly owned treatment plants (POTWs). Construction and operation practices and POTW design will be studied to determine which factors have potential for the greatest cost reduction and improved performance. Modification to upgrade the plant capability will be emphasized. From the overall management view, the thrust is to develop methodology and guidelines for systems analysis which will allow the user to improve operation efficiency. Modifications to processes which can reduce both capital and operating costs will be investigated. Special efforts will be directed to development of less energy intensive processes.

Soil treatment systems research activities are coordinated with related research activities undertaken by other agencies such as the Corps of Engineers and the Department of Agriculture. The research is oriented toward field evaluation and development of design manuals for land application methods or processes which can be utilized to achieve "best practicable treatment" or "nonpolluting discharge" for municipal sewage treatment systems. Recent activity has been devoted to research necessary for filling design gaps. This is necessary to update and improve the land treatment design manual. Studies are also being conducted to better understand the important mechanisms involved in successful operation of land treatment systems.

Treatment of small wastewater flows has been given high priority by the Clean Water Act Amendments of 1977. The objective of this activity is to develop practical handbooks or manuals with specific details on the design, operation, applicability,

capital and operating costs, and environmental implications of alternatives available for the treatment and disposal of wastewater generated from individual homes, rural communities, and recreational sites. These handbooks will be used by regulatory agencies, planning agencies, consulting engineers, and the general public. In addition, the R&D program has begun to investigate and develop improved community-wide institutional arrangements for on-site disposal systems to maximize the utility and reliability of such systems. Work has also continued on collection systems.

Urban runoff research includes problem definition and development of technology and evaluation manuals and aids for planners and engineers; preventive land development management techniques; collection system flow control; storage, treatment, disposal of wet weather flows and sludges; and best management practices and integrated systems. Emphasis is also placed on urban stormwater pollution controls utilizing low or nonstructural methods to discover lower cost control or abatement methods. The products of this research (guidelines, manuals, methods, management tools, and supportive data) will be used by planners, designers, and policy makers in carrying out assessments and formulating solutions to urban sewered and unsewered wet weather pollution. In combined sewer overflow abatement, the emphasis is on the development and testing of dual use concepts, including modification of existing waste treatment processes and systems at existing POTW for wet weather surge flows. In urban waste water, the emphasis is on preventive management of drainage systems with development of the attendant technology.

A major objective of the water conservation and reuse effort is the development and evaluation of the treatment technology to produce potable water from municipal effluents. These field investigations of technology development (performance, cost, reliability and feasibility) for the preparation of safe and acceptable drinking water from renovated municipal waste water are long term project, (5-7 years) and will be the major effort of this program. Limited work will also be done in evaluating the impact of water conservation techniques.

The second major program area addresses urban systems, toxics and residuals management. It is designed to provide the research support required by EPA's regulatory program for the control of toxics in municipal waste water, management of wastewater residuals in urban environments, and to optimize urban treatment system operations.

The sludge management program is designed to broaden the technological base for sludge utilization/disposal so as to protect the public health and the environment. This can be accomplished through an improved understanding of the fate and impacts of toxicants and nutrients on sludge processing and disposal. Sludge management research will continue to focus on techniques which reduce energy consumption.

The control of toxic pollutants in municipal wastewater effluents is a high priority program. Little definitive information is available concerning the extent of toxic organics and heavy metals in effluents. This program will attempt to characterize various municipal effluents and develop control options.

The innovative and alternative (I/A) provisions of the CWA for the construction of improved wastewater treatment facilities will require strong R&D support in implementation of the I/A Construction Grant program. Technical assistance will be directed toward identifying, reviewing and evaluating innovative and alternative technologies. The products will be assessment manuals and participation in instructional seminars for regional and state personnel.

The urban systems programs also has a high priority area improved performance, reliability and efficiency of publicly owned treatment plants through the application of better operation and maintenance (O&M) practices, instrumentation, and control systems.

Emphasis in this area will be on development of improved design guidelines to correct operational deficiencies and on small plants where O&M costs are high per unit production. The instrumentation and process control work will develop and evaluate strategies for process control of conventional plants.

WASTEWATER SYSTEMS CONTROL TECHNOLOGY

1978 Accomplishments

In 1978, obligations totaled $14,528,000 of which $2,402,100 was for salaries and expenses and $12,125,900 was for extramural activities. In 1978, the program:

Bioengineering Technology - Treatment Process Development

- Publishes technical reports and papers in the specific pollutant control program, two of which are of special significance: the design manuals on "Nitrogen Control and Phosphorus Removal in Sewage Treatment" and the study in "Trends in Phosphorus Removal Technology".

- Conducted and published proceedings of the National Symposium "Performance and Upgrading of Wastewater Stabilization Ponds".

- Successfully demonstrated a prototype ultraviolet disinfection unit process. This is an important alternative to the use of chlorine in disinfecting treated wastewater. The early indications are that the process did well and had low energy usage.

- Published the proceedings of the National Symposium on Wastewater Disinfection Technology. The Symposium was held late in fiscal year 1978 and attracted the Nation's consulting engineers, scientists and municipal design engineers concerned with disinfection.

- Completed the development, installation and evaluation of a full scale ozone disinfection process. This was the first implementation of ozone at an advanced waste treatment plant. After on-site modifications and debugging, the unit design has been made available to the user community through an evaluation report and local/national seminars.

Small Wastewater Flows - Small Community Wastewater Management

- Completed the "Facility Planning Guide for Small Communities". This document was urgently needed by both local authorities and the Federal construction grant program and it has received wide distribution. It contains design and planning guidance on waste water collection/treatment/disposal systems for small or rural communities and incorporate the best of recent relevant research findings.

- Provided considereble technology transfer, technical assistance and training in the areas of small waste water flows i.e., individual and small community systems. This support was to State and local agencies. This assistance promoted the installation of better technology.

Urban Wet Weather Pollution (Storm and Combined Sewer Pollution Control)

- Conducted a user's group meeting for the stormwater management model (SWMM) and published proceedings. At the time of the meeting there were over 100 agencies or authorities applying the SWMM mathematical model as a tool in planning of remedial abatement for wet weather flows.

- Completed and reported on two urban sediment/erosion control demonstrations; the results of which have been incorporated into the User's Manuals on urban sediment/erosion control. The manuals are also supported by a previously developed audio-visual training program available through the Agency training facilities.

- Published, in cooperation with the technical information program, the methodology for "Benefit Analysis for Combined Sewer Overflow Control". This work was done to assist the applicants to the construction grants program and the construction grant program itself in making decisions on funding wet weather remedial programs. Also published in the storm and combined sewer pollution control program were a total of 20 technical reports ranging from laboratory findings to large scale (60 mgd) projects.

Water Reuse and Conservation

- Initiated a program to investigate and evaluate technology for potable reuse of wastewater utilizing state of the art advanced wastewater treatment technology. This first year project was with Orange County, CA.

- Initiated a potable reuse health effects and treatment system performance analysis with the Denver Water Department. This is the most comprehensive health effects study of potable wastewater use ever undertaken.

- Conducted a National Water Reuse Symposium in cooperation with the Departments of Interior, and Defense, the National Science Foundation, the National Academy of Science, the Water Resources Council and the American Water Works Associations. The Symposium attracted 500 participants and was the first week-long meeting devoted entirely to the renovation and reuse of wastewater from municipal, industrial and agriculture sources.

Land (Soil) Treatment Systems

- Initiated the development of a two dimensional model to predict water and phosphate transport through soils under transient non-isotrophic conditions. Hydraulics of the model have been verified with laboratory data.

- Completed final reports on studies of ten existing systems for determining long-term effects of wastewater application to the land. These studies included four rapid infiltration systems and six slow rate systems.

- Initiated a five year cooperative agreement with Lubbock Christian College Institute of Water Research for a large land treatment demonstration project. This project will demonstrate slow rate land treatment in the southwestern United States and will provide the opportunity for significant studies of ground water effects, health effects, agriculture response to wastewater application and cost and economics.

1980 Program

In 1980, the Agency has allocated a total of $7,399,400 to this program, of which $2,727,500 is for Salaries and Expenses and $4,671,900 is for extramural purposes under the Research and Development appropriation. Highlights of the 1980 program are as follows:

Bioengineering Technology - Treatment Process Development

The thrust of the program remains bioengineering technology development, i.e., natural wastewater treatment systems such as a "Reed trench". The subdivisions are pathogenic microorganism control, specific pollutant control and innovative treatment technology development.

The pathogenic microorganism control subprogram will mainly summerize and evaluate several years effort in hardware development which are reaching their conclusion. The results to-date indicate good progress has been made in all aspects of the program, especially in cost reduction for disinfection. Each alternative will be evaluated and quantitative estimates will be made for specified categories to aid design engineers and municipal planners in deciding how best to approach pathogenic organic control in a specific situation.

With respect to the specific pollutants subprogram, the state-of-the-art is now well ahead of application. No new projects are planned for 1980, although the program will not be stopped completely. In hazardous organic control, efforts emphasize the evaluation of various biological processes for removal of specific priority compounds.

In innovative technology development, the aim is to develop and/or evaluate a new generation of biological treatment processes. Areas of concentration are reduced sludge production and improved efficiency and conservation of energy. The efforts in 1980 will be directed to developing vertically aligned biological reactors, hybrid biological systems, control of organism infestations which adversely effect activated sludge operation, and a field evaluation of rotating biological contactors in order to advance design criteria.

Test and Evaluation Facility

Operations at the new test and evaluation (T&E) facility were initiated in December 1979. The purpose of the T&E facility is to provide a flexible facility at which pilot and bench scale research on or evaluation of pollution control technology can be expeditiously conducted. The facility is shared by four ORD Cincinnati laboratories and is ideal for integrated research on both control technology and related health and ecological effects. Initial studies will address sludge dewatering optimization studies; behavior of priority pollutants in conventional wastewater treatment plants; and optimization of ozone contactor design.

Small Wastewater Flows - Small Community Wastewater Management

The small flows program will concentrate on: activities in septage (water from a septic tank) handling at community facilities; analysis of rural community wastewater alternatives; identification, evaluation and comparision of on-site wastewater alternatives; and some continuing efforts on advanced collection systems. Development of design criteria for the most promising alternative on-site systems, as well as investigation of individual home units will continue.

Urban Wet Weather Pollution (Storm and Combined Sewer Pollution Control)

This program addresses the urban wet weather pollution problem in a total system context. The program has five major subdivisions: (a) problem assessment (urban runoff), (b) technology development/cost effectiveness, (c) management and user assistance tools, (d) remedial considerations, and (e) best management practices.

In 1980, urban wet weather pollution assessment activities will continue to be maintained for specific cases only. At selected sites where remedial action is to be taken, baseline receiving water conditions and the after-correction conditions will be established. This program will be conducted in conjunction with best management practice projects. Development of methodologies and guidance on how to conduct impact assessments will be accelerated in 1980.

In technology development/cost effectiveness, both flow control and liquid/solid separation treatment will be investigated. The efforts to produce a manual for selecting urban runoff control techniques will continue along with a statistical data handbook for selecting design criteria and storage design considerations. Remedial considerations will concentrate on: (1) sludge disposal methods since the characteristics of urban runoff sludge and problems associated with it differ from normal wastewaters; and (2) infiltration/inflow control technology to support construction grants needs.

Development and evaluation of best management practices will continue to consume a major portion of the program effort. Several projects such as urban lake recovery, and marsh or wet land utilization will be continued. New projects will be initiated in the area of improved porous pavement, sewer flushing and urban vegetative practices for rate and volume attenuation. Additionally, cooperative efforts with the Office of Water and Waste Management on the national urban runoff program will be expanded.

Water Reuse and Conservation

The emphasis of this program will shift from a small maintenance type of research program to a major effort in examining the feasiblity of potable reuse of municipal wastewaters. The two major field projects initiated in 1979--a seven million dollar five-year project with the Denver Water Board to demonstrate the potential for producing potable water from domestic wastewater and a one million dollar effort which will be selected from competitive applications to demonstrate potable reuse technology--will consume much of the program's resources.

The reuse activity will continue to develop feasible strategies to extend valuable water supplies by source substitution. Guidelines will be developed for municipalities to implement source substitution projects and characterize the biological, organic, and inorganic residues in wastewater effluents. This program will be coordinated with the Department of Interior's Office of Water Research and Technology and EPA's Office of Drinking Water.

The conservation portion will receive less emphasis, primarily because of the work completed to date and the entry of other programs and agencies into R&D for water conservation.

Land (Soil) Treatment Systems

A major effort in 1980 will be devoted to providing additional design and operational data on rapid-infiltration and overland flow systems for updating the land treatment process design manual. This is a priority need for the construction grants program. Overland flow activities include: completion of work to determine treatment efficiency as a function of slope length and pretreatment; initiation of studies to evaluate the overland flow process in northern climates; and the sponsoring of an overland flow seminar to present the state-of-the-art of design and operation. Rapid-infiltration efforts will include the publishing of a summary report of the results of studies of four rapid-infiltration systems to determine long-term effects and continuation of lysimeter studies to define operations, management and treatment characteristics. Baseline studies (land composition) at the Lubbock Demonstration project will be

60-531 O - 80 - 34

conducted as construction and site preparation begins; initiation of studies to evaluate various field crops to determine nutrient uptake and evaluation of treatment effectiveness based on level of pretreatment; and continued expansion of work to determine transport and transformation of selected priority pollutants in soil systems.

In the area of municipal waste water treatment by aquaculture, several projects will be initiated to provide design and operational data for the construction grants program. These projects include: a screening program to evaluate various aquatic species and systems as potential candidates for use in treatment systems; a study to compare the treatment efficiency of a controlled environment aquatic macrophyte system with other wastewater treatment alternatives; evaluation of nutrient removal from secondarily treated municipal waste water introduced into a natural freshwater marsh; a project to evaluate benefits of utilizing artificial marshes for treatment of municipal wastewater, and a study to determine the potential for conversion of water hyacinth to useful products with a concurrent evaluation of the economies of the process. Although each of these projects is rather modest in scope, each should provide timely information of great value to the construction grants program.

The Land Treatment Task Force will continue to provide technical assistance to Regions VI and VII and the nine state governments in those regions with the objective of obtaining more and better land treatment systems under funding by the construction grant program. Specific activities in 1980 will include: six or more separate brochures on case studies and health effects subjects of interest to farmers and municipal citizens; design workshops in each state in conjunction with the state regulatory agencies to enable the architect/engineer (A/E) community to develop acceptable facility plans; technical assistance on the production of a nationwide education program on land treatment which will include a movie film, slide tape presentation and brochure, and technical assistance and educational material to A/E firms, municipal officials, service-type agencies, and to environmental, business, and consumer organizations.

1980 Explanations of Change from Budget Estimate

The net increase of $968,400 results from several actions. An increase of $87,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $297,500 to this activity.

A reprogramming of $190,000 was made within the water quality media, for urban systems, toxics and residual management within ORD to fund a new aquaculture research program; an initiative in the use of wetlands for municipal wastewater treatment in order to fully assess its potential for application as an innovative and construction grants program.

A reprogramming of $991,600 was made within the water quality media from drinking water treatment and groundwater protections to reflect the transfer of the 1979 congressional add on for demonstrating technology for potable reuse of wastewater; the research is being conducted in the water quality program.

1981 Plan

The Agency requests a total of 57 permanent workyears and $6,797,900 for this program, of which $2,522,700 is for the Salaries and Expenses appropriation and $4,275,200 is for extramural purposes under the Research and Development appropriation. This represents a decrease of six permanent workyears and $601,500. This decrease in

resources will reduce our research efforts on the treatment of non-volatile organics by ultra-violet rays and studies on virus inactivation. Highlights of the 1981 plan are the following:

Bioengineering Technology - Treatment Process Development

This program will continue to concentrate on technology development for lower cost, more efficient, energy conserving, more reliable and lower maintenance wastewater treatment methods. The work on developing bio-degradation data for specific hazardous pollutants will continue. Research in virus inactivation and non-volatile organics will be reduced.

New research efforts to be initiated are: development of an anerobic screening test geared to fate and effect of priority pollutants; update of the design manuals for phosphorus and nitrogen removal; scale-up the bubble diffuser to establish optimum geometric configuration for full scale application in chlorine disinfection; and continuion of field investigations on rotating biological contactors to develop design data.

Test and Evaluation Facility

This facility is designed to give quick response to high priority problems that have been requested by regional and operating program offices. We are in the process of identifying new projects that are short-term, however, the facility can also be used for the longer term research projects that are directly related to the ORD program. Some longer term projects will include: evaluation of the sequence of unit processes for removing priority pollutants planned for the Denver Reuse Demonstration Project; analyzing the setting characteristics of sediment in storm and combined sewer system discharges; and the effect of sanitary landfill leachate on the activated sludge process.

Small Wastewater Flows - Small Community Wastewater Management

In 1981 the effort to develop seasonal and community sized subsurface disposal systems will continue. Work will be initiated on the advanced collection systems handbook which will complement the Septage Handbook begun last year. The basic investigations of waste-water handling systems tailored to enticipated future construction practices will continue.

Urban Wet Weather Pollution (Storm and Combined Sewer Pollution Control)

During 1981, the program will emphasize three areas of technology development. These efforts are principally continuations of the furtherance of research in: (a) dual wet-dry weather flow treatment technology for publicly owned treatment works, (b) best management practices of urban runoff pollution control and (c) wet weather flow management in combined sewer systems.

Research and development of flexible treatment methods which can be designed into new facilities or retrofitted to existing facilities will be investigated, such as, ultra high rate filtration and expanded bed biological techniques.

In the development of best management practices technology for urban runoff pollution control, close cooperation will continue with the planning responsibilities of the national urban runoff program. Section 208, areawide waste treatment management provisions of the Clean Water Act, provided a 30 million dollar effort over a five year period to implement best management practices. Research in low and non-structural controls such as porous paving, flow attenuation methods, source control and others will be developed and evaluated along with methods of implementation for inclusion in the urban runoff control program.

Wet weather flow management in combined sewers includes development of flow routing and regulator techniques, advance the reliability of instrumentation; improve sewer repair practices and materials; (such as the development of improved grouting materials and injection hardware) develop maintenance and operation practices such as sewer flushing. These activities are intended to complement treatment plant technology development efforts in the "total system concept" of collection, transport and treatment of polluted urban wet weather flows.

Water Reuse and Conservation

This program will concentrate on the major projects initiated in 1979 in compliance with the specifically appropriated funds for research in the potable reuse of wastewaters. The work in conservation will be phased down to publishing completed projects findings, monitoring work by others for data gathering, and evaluation of conservation practices.

Land (Soil) Treatment

The soil treatment program for 1981 will continue to emphasize design and operation data for overland flow systems and the efficient hydraulic loading for rapid-infiltration systems. Efforts will be continued to develop the soil treatment design model to include phosphorus, nitrogen, metals, organics and water flow. Emphasis will be placed on the practical application of the system to "real world" operational management to increase plant efficiency and reliability. The Lubbock demonstration project should be completed and full-scale operation should be underway. The Land Treatment Task Force under the present agreement will terminate in 1981. This task force encourages and promotes the application of land treatment using municipal wastewater through the review of grant packages.

Urban Systems, Toxics, and Residuals Management

1979 Accomplishments

In 1979, obligations totaled $5,849,600 of which $2,211,800 was for salaries and expenses and $4,637,800 was for extramural activities.

In 1979 the program:

Sludge Management

- Updated the technology transfer manuel on "Sludge Treatment and Disposal" and distributed some 5000 copies. This manual is being used by consulting engineers, regional construction grant staff and the Office of Water Programs.

- Published a report concerning our comprehensive evaluation of high efficiency sludge dewatering equipment.

- Completed an evaluation of European within vessel (containerized) composting processes. Future sludge composting, using this method is dependent on market economics and on continued public acceptance.

- Evaluated emissions from sludge incinerators and determined that the low levels of heavy metals observed in emissions should not be cause for concern.

- Demonstrated the usefulness of sludge by revegetating barren land in Pennsylvania.

Toxic Pollutants Control

- Completed development and verification of analytical procedures for 113 organic priority pollutants in difficult samples such as raw wastewater and sludges.

- Completed a major study to determine the sources of heavy metals that flow into municipal treatment plants.

Innovative and Alternative Technology

- Completed revisions on the comprehensive Innovative and Alternative Technology Assessment Manual. This manual is being used as the principal informational and procedural tool in the evaluation of innovative and alternative projects.

- Completed about 12 regional innovative and alternative technology assessment seminars for consulting engineers, and federal/state personnel.

- Completed an innovative/alternative technology public information brochure.

- Completed 23 reviews of innovative/alternative facility plans submitted by EPA regional office staffs.

Urban Systems

- Completed a 3-1/2 year nationwide study on O&M factors causing poor plant performance. These items are identified and a new approach called, "Composite Correction Program (CCP)" was developed to improve plant performance. The CCP was found to be cost effective approach to improving plant performance and increasing levels of POTW compliance. The CCP was successfully implemented on a limited scale. The result of the nationwide study were presented at national meetings and published in trade journals.

- Compiled a comprehensive treatment plant deficiency design matrix and a corresponding correction matrix for improving treatment plant designs. These design matrixes can be used as an aid in determining corrective actions needed for upgrading existing facilities or in the design phases for new treatment plants.

- Developed a computer-aided design procedure for wastewater treatment and sludge disposal systems. This procedure enables a design engineer to synthesize and analyze large numbers of alternative treatment schemes and rank them with respect to cost, energy and environmental criteria.

- Reviewed a draft report on the reliability and stability of various biological processes. This report presents procedures for determining plant designs in order to obtain reliable effluent quality levels.

- Prepared a design handbook that discusses various activated sludge process modifications, aeration methods, equipment and application techniques and presents an economic analysis of manual versus automatic dissolved oxygen control.

- Prepared a model protocol for conducting comprehensive plant evaluations in the form of a user oriented field manual to meet the requirements of the Office of Enforcement and Regional Offices of EPA.

1980 Program

In 1980, the Agency has allocated a total of $7,526,900 to this program, of which $2,606,200 is for the Salaries and Expenses appropriation and $4,922,700 is for extramural purposes under the Research and Development appropriation. Highlights of the 1980 program are as follows:

Sludge Management - This program will continue to hold a high priority due to the Agency's new regulations and policies resulting from implementation of RCRA and the 1977 CWA amendments. The program will concentrate on: development of cost, performance and design data on new thickening and dewatering process; costs and benefits of sludge disinfection; improved design and operation of anerobic digesters and energy production; development and assessment of processes that will remove toxicants or make them unavailable for plant uptake and/or make them more suitable as fertilizer; the evaluation of starved-air combustion systems as a method for reducing fuel requirements and pollutant emissions; addition of solid waste to sludge combustion/pyrolysis process (coincineration) to upgrade heat value of sludge and recover energy; characterization of emissions from conventional sludge incineration; demonstration of a leading within-vessel composting process, and evaluation of innovative and alternative sludge management technology projects built by the construction grants program.

Land application of sludge is increasing despite some uncertainties concerning the health and ecological effects of some sludge components. The current program is aimed at mitigating these uncertainties. Emphasis in 1980 includes: development of management practices for controlling toxic organic chemicals, heavy metals and pathogens in sludge applied to land; development of a technique which will allow designers to predict the response of plants or crops to a broad range of sludge application rates and practices; identification of design principles of sludge disposal in landfills with or without municipal refuse; and evaluation of alternate nonfood chain uses of sludge. Develop a document on sludge management planning that will aid designers and local officials.

Toxic Pollutant Control - This program produces information on the sources of toxic pollutants, on the treatability by conventional and/or innovative technology and cost analyses to enable selection of the most cost effective solution. In 1980 the program will emphasize: data collection to quantify the soure and magnitude of toxic problems in municipal wastewaters; develop new treatment processes which enhance removal of priority pollutants from wastewater; assess treatability and removability of priority pollutants obtainable by biological and physical chemical treatment processes; develop improved analytical procedures for organic priority pollutants suitable for analysis of raw wastewaters and sludges; and produce a systems engineering methodology that assess the different control strategies and tradeoffs of an urabn-wide toxics control program between source control by pretreatment and treatment and/or detoxification at the POTW's.

Innovative and Alternative Technology - This program will continue to provide support for the use of innovative and alternative wastewater treatment technology in the construction grants program. The program will emphasize: overall evaluation of the innovative and alternative technology assessment program in meeting legislative goals; development and presentation of regional innovative and alternative technology assessment seminars for consulting engineers, and Federal/state personnel separately; and review of innovative and alternative facility plans submitted by the EPA regional office staffs.

Urban Systems - In 1980, this program will focus on the development of methods and practices that complement or supplement technological solutions aimed at the achievement of NPDES requirements. The program will tie together operation and maintenance procedures with new or corrective design guidelines, and develop instrumentation and control strategies to achieve improvements in reliability, energy conservation, capital and operating cost and efficiency of POTW's; continue the composite correction program (CCP) approach on State, county or regional basis using enhanced operation and maintenance techniques or design changes to improve treatment plant performance.

1980 Explanation of Change from Budget Estimate

The net decrease of $396,100 results from several actions. An increase of $80,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,200. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $284,200 to this activity.

A reprogramming of $190,000 was made within water quality media, to waterwaste systems control technology point source technology development to fund a new aquaculture research program, an initiative in the use of wetlands for municipal wastewater treatment in order to fully assess its potential for application as an innovative and alternative technology for the construction grants program.

1981 Plan

The Agency requests a total of 55 permanent workyears and $8,001,700 for this program, of which $2,315,200 is for the Salaries and Expenses appropriation and $5,686,500 is for extramural purposes under the Research and Development appropriation. This represents a decrease of 3 permanent workyears and an increase of $472,800. In-house work will be reduced on the development of analytical protocols for priority pollutants, and extramural efforts supporting the innovative and alternative construction grant program will be increased.

Sludge Management - In 1981 the program will: Assess cost/benefits of disinfective capability of various processes; demonstrate ways to upgrade digestors and gas utilization (i.e. methane gas can be captured on site and converted for use on site or purified and sold); develop heavy metal removal processes; evaluate starved-air combustion and conincineration; characterize exhaust streams from incineration related to process condition and ash disposal problems; prepare planning assistance and technology transfer documents; develop improved techniques to predict useful lifetime of disposal sites and better correlation of annual sludge loading rate (tons per acre); and define the impact of long-term sludge applications on groundwater and land management practices.

Toxic Pollutant Control - In 1981 this program will continue with the emphasis and direction of that in 1980. The program will include: characterization of sources and magnitude; determination and improvement of predictive methods for treatability; evaluation of toxic control and pretreatment strategies from toxics in POTW's and evaluation of promising control strategies.

Innovative and Alternative Technology - The program will provide implementation, review and advisory guidance to the Office of Water Program Operation (OWPO), regions and states in encouraging the use of cost-effective innovative and alternative technology. The 1981 program includes: the continuation of providing I/A guidance manuals and information; establishment and maintenance of a specific technical advisory group to review I/A applications; development and presentation of a series of I/A training activities, including training seminars. In addition, evaluation efforts on sludge projects that conserve or recover energy, reduce costs, beneficially use sludge and improve efficiency/reliability will be initiated with $222,800 of the increase.

Urban Systems - The emphasis of this program in 1981 will be to reduce the construction and operational costs, improve performance and reliability, and reduce energy use of POTWs. This program will provide technical input on plant design, influent characteristics, O&M practices and plant performance to the operating programs to impact their program guidance documents. This activity will also include: improved design information in the form of specific design deficiency guidelines; design guidelines and guidance information in high-priority areas; specific condensed guidance and checklists to improve the state and federal review process; specific studies will be undertaken to identify and document process improvements, as well as existing process system designs which incorporate cost effective, reliable technology; and a specific initiative to develop improved operation and design practices for land application systems and other alternative treatment technologies. The operation and maintenance costs for Ely, Minnesota, will be funded with $250,000 of the increase.

WATER QUALITY

Monitoring and Technical Support

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
APPROPRIATION					
Characterization and Measurement Methods Development:					
Salaries and Expenses.	$882	$1,853	$1,261	$1,302	+$41
Research and Development.....	160	93	272	203	-69
Monitoring Methods and Systems:					
Salaries and Expenses.	2,685	2,297	3,022	3,010	-12
Research and Development.....	1,040	610	1,458	1,135	-323
Quality Assurance:					
Salaries and Expenses.	1,279	1,664	1,431	1,234	-197
Research and Development.....	3,599	4,488	3,665	4,055	+390
Technical Support:					
Salaries and Expenses.	1,032	785	759	773	+14
Research and Development.....	122	460	380	389	+9
Total:					
Salaries and Expenses.	5,878	6,599	6,473	6,319	-154
Research and Development.....	4,921	5,651	5,775	5,782	+7
Grand Total.....	10,799	12,250	12,248	12,101	-147
Permanent Positions					
Characterization and Measurement Methods Development.....	27	28	28	28	...
Monitoring Methods and Systems.....	64	56	67	60	-7
Quality Assurance.....	24	31	23	23	...
Technical Support.....	20	10	9	9	...
Total.....	135	125	127	120	-7
Full-time Equivalency					
Characterization and Measurement Methods Development.....	28	40	33	32	-1
Monitoring Methods and Systems.....	81	67	87	79	-8
Quality Assurance.....	28	41	29	29	...
Technical Support.....	37	30	20	19	-1
Total.....	174	178	169	159	-10

Budget Request

The Agency requests a total of $12,101,300 and 120 permanent workyears for 1981, of which $6,318,700 is for Salaries and Expenses appropriation and $5,782,600 is for extramural purposes under the Research and Development appropriation, with a decrease of $155,000 in Salaries and Expenses and an increase of $8,400 for extramural research activities. The net decrease of $146,600 has the following components: a decrease of $28,300 cuts efforts to identify recurring chemicals in industrial wastewaters that cannot be identified through matching of spectra in the computerized file; a decrease of $334,900 and 7 permanent workyears reduces work on radionuclides, and microbiology, an increase of $193,500 will expand quality assurance support for toxic pollutant measurements; and an increase of $23,100 for overhead monitoring data acquisition and analysis for the Enviro-pod program.

Program Description

The monitoring and technical support program has four components. They are: (1) characterization and measurement methods development, (2) monitoring methods and systems (3) quality assurance, and (4) technical support.

The objective of the characterization and measurement methods development component of the program is to provide techniques for measuring substances in water, wastewater, sediment, sludge, soil, and leachate and to provide assistance in their use of these techniques.

The monitoring methods and systems component involves the adaptation of currently available or proposed analytical methods and measurement systems to operations application for monitoring of water quality. Analytical methods and measurement systems often are ill-suited to field application for environmental monitoring as they are developed by manufacturers or research institutions. Considerable work is needed to evaluate, modify, and adapt instruments or methods for reliable operations application in the field. The evaluation and modification work under this program provides assurance that monitoring methods will perform reliability. Another major objective is the design of monitoring networks to include guidelines for deployment of sampling stations and improving sampling technology procedures for obtaining, preserving, storing, transporting, and analyzing biological microbiological analysis.

The quality assurance program includes validation and standardization of monitoring measurement systems, development and provision of quality control materials and procedures for operational use, the conduct of methods and individual performance evaluation studies, development of data handling systems, and participation in regional quality control workshops in support of the National Pollutant Discharge Elimination System (NPDES) and ambient water quality monitoring.

The objective of the technical support program is to provide overhead monitoring, specialized analytical, chemical and biological laboratory field support to the Office of Water and Waste Management, Office of Environmental Review, Office of Enforcement and the Regions in implementing the mandates of the Clean Water Act. Services are personnel dependent activities that focus on specific problems and utilize expertise and equipment that are unique to the Office of Research and Development. The program utilizes a limited number of in-house experts supported by basic service contracts and interagency agreements which offer unique capabilities to the Regions and Program Offices so that they may answer operational problems. The program also include quick response to unforeseeable, but urgent requests for services.

CHARACTERIZATION AND MEASUREMENT SYSTEMS DEVELOPMENT

1979 Accomplishments

During 1979, obligations totaled $1,041,900. Included in this total was $882,300 for salaries and expenses and $159,600 for extramural purposes. These resources were used to identify toxic chemicals in industrial wastewaters and develop analytical measurement methods for the measurement of organic chemicals, toxic elements (e.g., heavy metals), different ionic species of elements, and asbestos fibers applicable to water and wastewater. In 1979, the program:

- Developed computer software required for computerized spectral matching and identification of frequently recurring toxic organic chemicals in wastewaters of 21 industrial categories.

- Developed a catalog of instrument responses to specific toxic elements that can be used to compare with instrument responses to unknown samples to facilitate identification to toxic elements in water, wastewater, and sediments.

- Completed an evaluation of an automatic sampler developed for collecting organic chemicals in water. The sampler effectively accumulates a range of organic chemicals of interest.

- Completed a study of the utility of spark source mass spectrometry as a reference technique (i.e., for use as the basis in evaluating all other techniques) for multi-element analysis. The technique was found to have several limitations that prevent it use for this purpose at this time.

- Conducted the 9th Annual Symposium on the Analytical Chemistry of Pollutants (jointly with the University of Georgia and American Chemical Society).

1980 Program

In 1980, the Agency has allocated a total of $1,533,200 to this program, of which $1,261,700 is for the Salaries and Expenses appropriation and $271,500 is for extramural purposes under the Research and Development appropriation. In 1980, the program will:

- Assist the Effluent Guidelines Division in the identification of potentially toxic organic chemicals common to wastewaters from each of 21 categories of industry, as required by the Natural Resource Defense Council consent decree.

- Complete the first generation master analytical scheme for volatile organic chemicals in water and wastewater.

- Increase emphasis on the development of methods for confirming tentative identifications of volatile organic chemicals.

- Expand analytical methods for volatile organic chemicals to address sediments, which constitute a reservoir for toxic chemicals and a secondary source of toxic chemicals to the aquatic environment.

- Continue to develop methods applicable to water and wastewater for non-volatile organic chemicals. The methods will employ high pressure liquid chromatography interfaced with mass, Raman, and infrared spectrometry.

- Continue work on methods for the simultaneous measurement of chemical elements, with emphasis on expansion and adaptation of the multielement techniques developed for water and wastewater to make them applicable to sediment and soil.

- Continue research on methods to identify and quantify inorganic chemical species in water, needed for accurate toxicology assessment. Emphasis this year will be on evaluation of ion exchange chromatographic methods for the separation, concentration, and determination of ionic species in water.

1980 Explanation of Change from Budget Estimate

The net decrease of $412,800 results from several actions. An increase of $41,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $69,500 to this activity.

A reprogramming of $500,000 was made within the water quality media to monitoring methods and systems in order to comply with OMB directive of placing all funds for the National Bureau of Standards in one activity in each applicable media for ease of program review.

A reprogramming of $31,000 was made to management and support lab support for lab maintenance costs due in part to increasing costs of energy. Also, the number of service contracts have increased as labs undergo RIFs and the services of maintenance personnel must be replaced by contracts.

A reprogramming of $4,000 was made to water quality marine ecological effects for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models.

A reprogramming of $150,000 was made from water quality transport and fate ($50,000), from water quality freshwater ecological effects ($60,000), and from water quality marine ecological effects ($40,000) to help fund the tapes analysis.

1981 Plan

The Agency request a total of $1,504,900 and 28 permanent workyears for this program, of which $1,302,100 is for the Salaries and Expenses appropriation and $202,800 is for extramural purposes under the Research and Development appropriation. The decrease of $28,300 will reduce efforts to identify recurring chemicals in industrial wastewaters that cannot be tentatively identified through matching of spectra in the computerized file. In 1981, the program will:

- Continue assistance to the Effluent Guidelines Division in identification of toxic organic chemicals common to wastewaters from each of 21 industrial categories.

- Continue work on development of more cost-effective methods for confirming tentative toxic organic chemical identifications as necessary to substantially increase the amount of toxic chemical identifications that can be made with a fixed amount of resources.

- Continue work on development of methods for nonvolatile organic chemicals in water, which constitute about 80 percent (by weight) of the organic chemicals present in surface waters, some of which (e.g., nitrosamines) are carcinogenic and are not detected by techniques now in routine use.

- Continue work initiated in 1980 on volatile organic chemical and multi-element methods applicable to sediments and soils, which constitute a temporary reservoir for toxic chemicals and a potentially significant secondary source of these pollutants.

- Develop chemical speciation methods for identification and quantitation of toxic metals in surface waters and wastewaters. Since the toxicity of any given metal varies widely, depending on its chemical state (species), these methods are critical to assessing the hazards posed by the presence of metals in aquatic systems.

- Test a proposed referee method (i.e., a basic method by which all other methods are evaluated) for asbestos in water (using electron microscopy).

MONITORING METHODS AND SYSTEMS

1979 Accomplishments

During 1979, obligations totaled $3,724,900. Included in this total was $2,684,600 for salaries and expenses and $1,040,300 for extramural purposes. In 1979, the program:

- Corrected deficiencies in existing reference methods for enforcement of national primary drinking water standards.

- Improved biomonitoring methods for long-term water quality monitoring and for determining the effects of non-point sources on aquatic organisms in receiving waters (biological integrity).

- Reported on water quality requirements and pollution tolerance of mayflies, stoneflies, and caddisflies (common aquatic insects that are sensitive pollution indicator organisms) for use in biomonitoring data evaluation.

- Revised coded master species list for data management system (BIOSTORET) for biological field and laboratory data.

- Developed, modified, and evaluated new or recently prepared methods for monitoring surface water and wastewater quality for National Pollution Discharge Elimination System, including bacterial pollution indicators and pathogens.

- Developed and evaluated deployable, compact, waterborne monitoring packages for monitoring coastal zone, wetlands, lakes, bayous, and estuaries for oil spills, industrial, nonpoint source and water pollutants.

- Evaluated laser fluorosensor to monitor the concentration of certain surface water parameters, e.g., chlorophyll in algae and dissolved organics.

1980 Program

In 1980, the Agency has allocated a total of $4,480,000 of which $3,022,000 is for the Salaries and Expenses appropriation and $1,458,000 is for extramural purposes under the Research and Development appropriation. Major activities and outputs include:

- Correction of reference methods required for monitoring municipal and industrial wastewaters in the National Pollution Discharge Elimination System program and other methods as needed.

- Development of specifications for EPA-approved automatic sampling and monitoring instrumentation to enforce existing and planned standards and regulations for effluents and fresh water, for example, Consent Decree pollutants.

- Development, modification, and evaluation of new or recently proposed methods or systems for monitoring wastewater quality for NPDES including methods for bacterial pollution indicators and pathogens, and to meet the Office of Water Planning and Standards requirements for NPDES for pesticides.

- Development of proposed reference methods for toxic and hazardous substances, and Consent Decree pollutants in wastewater, ambient waters, sludges, dredges, and ocean disposed water.

- Development of procedures for concentrating pathogens for high-rate processing of wastewater. Undertake a comparative study on cell lines for detection of waterborne pathogenic material recovered from dredges, sludges, and wastewater.

- Evaluation of methods or systems for monitoring surface water quality and development of guidelines for monitoring network design.

- Development of improved bioassay methods for evaluation of municipal and industrial effluents and marine water disposal sites to determine the effects of pollutants on acquatic organisms.

- Update and republish chemical, biological, and microbiological methods manuals.

- Development of sample preservation and transportation techniques for conventional and toxic pollutants which comply with Department of Transportation regulations, to assure integrity of sample is maintained from source to laboratory.

1980 Explanation of Change from Budget Estimate

The net increase of $1,573,000 results from several actions. An increase of $99,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $5,500. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $62,100 to this activity.

A reprogramming of $500,000 was made within the water quality media from characterization and measurement methods development water quality, to comply with OMB directive of placing all funds for the National Bureau of Standards in one activity in each applicable media for each of program review.

A reprogramming of $1,041,000 was made from air quality assurance ($90,000); from water quality technical support ($61,500); and from water quality ($889,500) to reflect a shift of emphasis from quality assurance to monitoring methods and systems. The two programs are closely aligned; the monitoring methods program corrects deficiencies in candidate operational monitoring methods and systems programs, then the QA programs take these corrected methods and validate their utility for operational monitoring of pollutants. This reprogramming represents a change in priority to emphasis correction of technical deficiencies in additional methods to respond to NPDES monitoring requirements.

1981 Plan

The Agency requests a total of $4,145,100 and 60 permanent workyears for this program, of which $3,009,900 is for the Salaries and Expenses appropriation and $1,135,200 is for extramural purposes under the Research and Development appropriation. The decrease of $334,900 and 7 permanent workyears reflects a decrease in emphasis on radionuclides and microbiology. Major activities and outputs will include:

- Development of reference methods for priority pollutants, toxic and hazardous substances, and chlorinated aromatics.
- Development of techniques for sampling, preserving, storing and transporting water samples for analysis.
- Evaluations of continuous monitoring systems for toxic metals, total phenols, oil, and total organic carbon.
- Development of bioassay techniques for monitoring industrial effluents and marine disposal sites.
- Development of methods for rapid identification of viruses in sewage and sludges.
- Preparation of methods manuals for analysis of chemical and organic pollutants.
- Correction of deficiencies in existing reference methods for measuring municipal and industrial wastewaters.

- Evaluations of applications for equivalent test procedures for monitoring municipal anc industrial wastewaters.

- Development of guidelines for site selection of sampling stations for monitoring surface waters.

- Development of methods and procedures for monitoring microorganisms and other pathogens in surface water.

- Evaluation of specified monitoring networks for applicability to monitoring trends and episodic events.

- Correction of deficiencies in existing reference methods for enforcement of the Consent Decree.

QUALITY ASSURANCE

1979 Accomplishments

During 1979 obligations totaled $4,878,300. Included in this total was $1,279,500 for salaries and expenses and $3,598,800 for extramural purposes. In 1979, the program:

- Delivered 13 analytical methods systems based upon gas chromatography, high pressure liquid chromatography and gas chromatography coupled to mass-spectrometry for use within the NPDES to measure 114 organic consent decree priority pollutants.

- Evaluated and designated five equivalent methods for nationwide use and 15 methods for case-by-case use in the NPDES.

- Published quality assurance manual for wastewater laboratories.

- Conducted performance evaluations of the NPDES major discharger laboratories to determine analytical proficiency in six analytical series.

- Maintained quality control sample repository and distributed NPDES enforcement and compliance check samples in 12 analytical series.

- Operated computerized interlaboratory testing system for performance evaluationfor EPA, State, and major NPDES water pollution and discharger laboratories.

1980 Program

In 1980, the Agency has allocated a total of $5,095,700 to this program, of which $1,431,100 is for the Salaries and Expenses appropriation, and $3,664,600 is for extramural purposes under the Research and Development appropriation. Specific outputs will include:

- Validation and standardization of methodology for analysis of toxic pollutants in the NPDES for seven categories of pollutants.

- Standardization of a surrogate biological screening method for toxics to be used as a more efficient test for a selected broad class of toxic chemicals in lieu of chemical testing.

- Maintenance of the present quality control reference material repository and development of new reference materials as required.

- Evaluation and approval of 13 equivalent methods for use nationwide and approximately 30 case-by-case procedures for use in the NPDES.

- Evaluation studies of the NPDES laboratories for eight performance series including EPA, State, and Regional laboratories.

- Validation of methods to meet Agency requirments for monitoring trace metals and polychloronated biphenyls (PCB's) in marine environments and for the NPDES monitoring requirement for pesticides as well as for all priority pollutants.

- Maintenance of the quality control reference material repository and distribution of quality control samples to Regional, State, local and private laboratories including: quality control samples for the measurement of water quality effluents to support effluent limitations regulations, quality control samples for measuring pollutants regulated under Sections 104, 106, 208, 304(h) and 307(a) of P.L. 95-218; quality control samples for measuring pollutants in marine samples in support of the NPDES; and quality control samples for measurement of hazardous wastes from active and/or abandoned sites.

- Publication of quality assurance manuals for industrial and municipal wastewater laboratories.

- Publication of updates on the sampling and sample preservation and microbiological methods manuals for wastewater and water quality.

- Assistance to Regions and States in the evaluation of regulated water/wastewater monitoring activities.

- Development of national guidance to assure uniformity in laboratory evaluation of the NPDES compliance monitoring laboratories.

- Operation of a working computerized interlaboratory test system for performance evaluation for the EPA, State, and other NPDES laboratories.

- Expansion and improvement of mass spectral search program for toxic pollutants by the addition of 10,000 spectra.

1980 Explanation of Change from Budget Estimate

The net decrease of $1,056,300 results from several actions. An increase of $33,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million ADP reduction resulted in a decrease of $1,600 and $4,800, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyear resulted in a decrease of $104,000 to this activity.

60-531 O - 80 - 35

A reprogramming of $90,000 was made to radiation quality assurance to reflect the support of a new program dealing with ionizing radiation quality assurance.

A reprogramming of $889,500 was made to water quality monitoring methods and systems within ORD reflecting a shift of emphasis from quality assurance to monitoring methods and systems. The two programs are closely aligned; the monitoring methods program corrects deficiencies in candidate operational monitoring methods and systems programs then the quality assurance program takes these corrected methods and validates their utility for operational monitoring of pollutants. This reprogramming represents a change in priority to emphasize correction of technical deficiencies in additional methods to respond to NPDES monitoring requirements.

1981 Plan

The Agency requests a total of $5,289,200 and 22 permanent workyears for this program, of which $1,233,700 is for the Salaries and Expenses appropriation, and $4,055,500 is for extramural purposes under the Research and Development appropriation. This is an increase of $193,500 to expand quality assurance support for toxic pollutant measurments. In 1981, the program will:

- Provide analytical methods for analysis of 14 classes of toxic chemicals in industrial waste water, municipal waste water, and ambient fresh and marine waters.
- Provide validated analytical methods for 20 trace organic compounds including a gas chromatographic/mass spectrometric method.
- Maintain a repository of standard reference materials and distribution of samples for 10 water pollutant test series and expand repository to include the consent decree pollutants.
- Continue the alternate methods equivalency program for analytical methods as required by 40 CFR 136, Guidelines for Test Procedures for the Analysis of Pollutants.
- Revise the quality assurance manual for wastewater laboratories.
- Evaluate the performance of major discharger laboratories within the NPDES in 11 analytical series.
- Maintain and expand the computerized laboratory performance evaluation system.

TECHNICAL SUPPORT

1979 Accomplishments

During 1979, obligations totaled $1,154,200. Included in this total was $1,031,900 for salaries and expenses and $122,300 for extramural purposes. In 1979, the program:

- Completed 10 spill prevention control and countermeasure reports and responded to 12 emergency spills for the Office of Water and Waste Management. Provided aerial photography and detailed analyses to regions for oil and petrochemical facilities inspections and for analysis of the extent and effects of oil and hazardous material spills.

- Provided overhead surveillance and Enviro-pod support for all regions, the program offices and the Chesapeake Bay Program. Provided data acquisition and analysis of photographic and multi-spectral scanner imagery.

- Conducted 50 field studies for the regions and program offices. Provided detailed analysis of point and non-point source problems, leachate and thermal plant discharge problems.

- Reviewed 15 environmental impact statements for the Office of Water and Waste Management and the Office of Environmental Review and the Regions. Provided detailed analyses of archival and new photography to determine land use, soil, drainage, geologic and vegetative conditions.

- Provided overhead monitoring data and methods documentation for the Office of Enforcement initiatives in pulp and paper, iron and steel and power generation industries.

1980 Program

In 1980, the Agency has allocated a total of $1,139,000 for this program, of which $758,900 is for the Salaries and Expenses appropriation and $380,100 is for extramural purposes under the Research and Development appropriation. Specific outputs will include:

- Ten spill prevention control and countermeasure studies and 10 to 15 oil and hazardous spill emergency responses.

- Overhead monitoring and data analysis support for all regions and program offices.

- Overhead monitoring and data analysis support for special programs such as the Chesapeake Bay, Beaumont/Lake Charles, Poplar River and Atchafalya River.

- Fifty (50) field studies for the regions and program offices to produce: thermal pollutant discharge surveys, wetland and land use surveys, point and non-point surveys and leachate and septic tank problem surveys.

- Expert witness and overhead monitoring data acqusition for enforcement case preparation for the Office of Enforcement and regions.

- Overhead monitoring acquisition and analysis support for the 301(h) Ocean Discharge Program.

1980 Explanation of Change from Budget Estimate

The net decrease of $106,000 results from several actions. An increase of $25,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $18,400 to this activity.

A reprogramming of $61,500 was made to water quality monitoring methods and systems within ORD reflecting a shift of emphasis from quality assurance. The two programs are closely aligned; the monitoring methods program corrects deficiencies in candidate operational monitoring methods and systems programs, then the Quality Assurance program takes these corrected methods and validates their utility for operational monitoring of pollutants. This reprogramming represents a change in priority to emphasize correction of technical deficiencies in additional methods to respond to NPDES monitoring requirements.

A reprogramming of $50,000 was made to toxic substances technical support within ORD to provide additional support to the technical support program under the toxic substances activity.

1981 Plan

The Agency requests a total of $1,162,100 and 9 permanent workyears for this program, of which $773,000 is for the Salaries and Expenses appropriation and $389,100 is for extramural purposes under the Research and Development appropriation. The increase of $23,100 will be for overhead monitoring data acquisition and analysis for the Enviro-pod program. In 1981, the program will:

- Produce ten spill prevention control and countermeasure reports for the Office of Water and Waste Management and the regions.
- Respond to 10-15 to emergency oil and hazardous spill responses for the regions.
- Complete 15 field studies initiated in 1980 and undertake 15-20 new requests for field studies in leachate migration, septic tank leak and thermal infrared analysis.
- Provide overhead monitoring data acquisition and analysis and photo laboratory reproduction and analysis for the Enviro-pod program.
- Provide expert witness and case preparation support for the regions and Office of Enforcement.
- Complete 30 priority reports for the 301(h) Ocean Outfall Program.

WATER QUALITY

Water Quality Planning and Standards

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
State Programs Regulations and Guidelines:					
Salaries and Expenses	$9,821	$11,113	$10,662	$11,099	+$437
Abatement, Control and Compliance	3,564	4,400	4,368	3,957	-411
Great Lakes Program:					
Salaries and Expenses	1,023	600	730	664	-66
Abatement, Control and Compliance	4,992	5,900	5,770	5,865	+95
Clean Lakes Program:					
Abatement, Control and Compliance	9,204	15,000	15,000	13,500	-1,500
Chesapeake Bay Program:					
Salaries and Expenses	426	200	133	196	+63
Abatement, Control and Compliance	2,148	1,800	1,840	1,814	-26
NEPA Compliance/EIS Preparation:					
Salaries and Expenses	222	176	206	192	-14
Total:					
Salaries and Expenses	11,492	12,089	11,731	12,151	+420
Abatement, Control and Compliance	19,908	27,100	26,978	25,136	-1,842
Grand Total	31,400	39,189	38,709	37,287	-1,422
Permanent Positions					
State Programs Regulations and Guidelines	267	331	308	300	-8
Great Lakes Program	22	15	15	15	...
Clean Lakes Program	2	...	...	...	...
Chesapeake Bay Program	7	5	5	5	...
NEPA Compliance/EIS Preparation	5	8	5	7	+2
Total	303	359	333	327	-6

* Clean Lakes positions are included in State Program Regulations and Guidelines category.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Full-time Equivalency					
State Programs Regulations and Guidelines	343	412	365	360	-5
Great Lakes Program	26	21	20	20	...
Clean Lakes Program	1	...	...	...	...
Chesapeake Bay Program	10	6	6	6	...
NEPA Compliance/EIS Preparation	7	8	7	7	...
Total	387	447	398	393	-5

Budget Request

The Agency requests a total of $37,286,900 and 327 permanent workyears for 1981, a decrease of $1,422,100 and six permanent workyears from 1980. Included in this total is $12,150,700 for Salaries and Expenses and $25,136,200 for Abatement, Control and Compliance, with an increase of $420,400 and a decrease of $1,842,500, respectively.

Program Description

The water quality planning and standards subactivity includes five program elements:

State Program Regulations and Guidelines - This element covers a broad range of activities, including provision of technical and information transfer assistance to State and local areawide and other Federal (e.g., USDA) agencies to assist in the planning and operation of cost-effective control programs. The water quality management element under this program instituted a major reorientation in the operation of grant programs under Sections 208, 106, and 314 of the Clean Water Act (CWA). Section 208 grant assistance is scheduled for completion in 1983. From 1979 through 1983, Section 208 management will emphasize funding of problem-specific nonpoint source (NPS) control projects that will provide transferable technical information to States and localities on NPS pollution controls. Specific program outputs include:

- Development of major National Urban Runoff Project (NURP) transferable prototype control programs for this major nonpoint source of pollution.

- EPA/USDA development and implementation of selected agricultural best management practices (BMPs) through Model Implementation Projects (MIP); special Agricultural Conservation Program (ACP) water quality projects; and (beginning in 1980) a major USDA-funded Rural Clean Water Program (RCWP) which provides incentive grants to encourage farmers and ranchers to adopt proven water quality protection methods.

- Development and implementation of nonpoint source ground water protection projects.

- Development of State-based control programs for mining, on-lot disposal, and construction-related pollution.

Section 106 State water pollution control agency grants are now being managed to a large extent through the State/EPA Agreement (SEA) process, along with other EPA pollution control grant programs (including drinking water, solid waste, air, noise, radiation and toxic pollution problems). Finally, the management of the Clean Lakes Grant Program under Section 314 of the CWA addresses the assessment and implementation of watershed and in-lake restorative procedures to insure that Federal grant dollars are used in a manner that will provide cost-effective methods for the improvement or maintenance of the quality of publicly owned fresh water lakes. In 1980, management of the Clean Lakes program will be fully incorporated into the State/EPA agreement process.

Great Lakes Program - The second element covered by this subactivity is the Great Lakes program, which includes funding for the Great Lakes initiative program and demonstration grants authorized by Section 108(a) of the Clean Water Act of 1977. The Great Lakes National Program Office was established in 1978 to integrate and consolidate EPA Great Lakes activities and to provide coordinated support to the International Joint Commission's (IJC) Great Lakes Water Quality Board.

Clean Lakes Program - The third element covered by this subactivity is the Clean Lakes grant program. Under this grant mechanism financial assistance is provided to States to classify their publicly owned fresh water lakes according to trophic conditions and to carry out methods and precedures to restore and protect the quality of those lakes. To date the Agency has received 175 applications for lake restoration and has funded 115 projects.

Chesapeake Bay Program - The fourth element covered by this subactivity is the Chesapeake Bay program, which was developed in response to a congressional directive which required EPA to conduct an in-depth study of the Bay, define the factors adversely impacting the environment, develop research to address adverse factors, and define management strategies to ameliorate degradation in the Bay due to pollution. The program has been developed as a cooperative effort between citizen groups, State environmental agencies (Virginia and Maryland), and EPA. A program of integrated scientific and management studies initiated to assess the consequences of pollutant loadings on the Chesapeake Bay in terms of effects on the ecosystem, the products of the Chesapeake Bay program will aid managers in making decisions at all government levels.

The three highest priority problem areas are considered to be toxic substances, nutrient enrichment (eutrophication), and the disappearance of submerged aquatic vegetation. Additionally, management structures relative to these three areas are being reviewed in the context of both exisiting regulatory mechanisms and available alternative control options.

NEPA Compliance/EIS Preparation - The fifth element covered by this subactivity involves environmenal impact statement (EIS) preparation in voluntary compliance with the National Environmental Policy Act (NEPA). These EISs are prepared at the discretion of the Regional Administrators.

STATE PROGRAM REGULATIONS AND GUIDELINES

1979 Accomplishments

In 1979, the Agency obligated $13,384,600 for this program activity of which $9,820,700 was for intramural purposes and $3,563,900 was for extramural purposes. A major function of this activity was the awarding of $94.5 million in Section 208 planning grants to State and local areawide agencies emphasizing nonpoint source pollution control projects. Grants totalling $54.1 million under Section 106 were awarded to support State water pollution control programs and $9.2 million was awarded for Section 134 Clean Lakes projects. In addition, a total of $3,563,900 was obligated for contracts in 1979, including $880,000 for management of best management practice (BMPs) projects; $690,000 for Financial Management Assistance Projects (FMAPs); $543,300 for public involvement and technology transfer, and $1,450,600 for statistical support of regualtions development and for development of a water strategy. Major program accomplishments were achieved in several areas including:

Regulatory Requirements

- Water quality management (WQM) regulations covering programs under Sections 208/106/303(e) of the Clean Water Act were promulgated. The revised regulations: set forth necessary requirements for the continuing planning and implementation phase of the WQM program, which follow the initial 3-year planning period for grantees, corrected certain technical problems encountered with parts of the previous regulations; implemented new provisions of the 1977 Clean Water Act; and implemented Presidential initiatives for reducing the burden of Federal planning requirements on State and substate agencies. The regulations also place major emphasis on the coordination of environmental management programs through the State/EPA Agreement (SEA) process.

State/EPA Agreements(SEAs)

- Signed 32 1979 SEAs with States, 15 of which covered programs under the Resource Conservation and Recovery Act (RCRA), Safe Drinking Water Act (SDWA) and Clean Air Act programs as well as the Clean Water Act.

- Guidance for 1980 SEAs was completed, and the development of 1980 SEAs was initiated with 57 States and territories.

Nonpoint Source Control

- More than 200 grant awards to Section 208 agencies were made in 1979 for nonpoint source (NPS) priority projects. Most agencies have been funded to work on one or more of the national NPS problems including urban runoff, agriculture, and construction.

  - National prototype projects were funded including 15 urban runoff (NURP), 29 agriculture runoff projects (ACP/MIP), and six ground water protection projects. Ten Financial Management Assistance Projects (FMAPs) were funded, providing assistance and training to overcome financial barriers to plan implementation and to develop self-sustaining State and local continuing planning.

  - Half the agencies were funded to work on ground water problems and a quarter for silviculture and mining problem solutions.

- Nearly half the grantees were funded to assist in advanced waste treatment (AWT) planning. (In 1980, new AWT planning projects will be supported through Section 201 facilities planning grants.)

- Followed-up approvals to ensure implementation of Section 208 plans including approval of management agency designations.

- National economic and policy studies on urban storm water and watershed BMP's were initiated in 1979.

- Participated in State Rural Clean Water Coordinating Committees to assure activity and focus on WQM implementation in priority areas; evaluated Rural Clean Water Program (RCWP) applications and reviewed BMPs proposed for cost share assistance under this USDA funded program. Control of pesticides and other hazardous substances on toxic materials in rural runoff was emphasized.

Sections 208/106 Grants Management

- Nearly $150 million awarded through more than 200 Section 208 grant awards to State and areawide agencies and 67 Section 106 grants to States.

- A 5-year assessment of State program needs for Section 106, 208 and 314 programs was initiated.

Public Information and Technology Transfer

- A national NPS technical information transfer system was developed for use by Section 208 field staff, grantees and public interest groups.

- Provided funding support for public involvement at the State and local level in priority NPS projects.

- Training sources on public participation/management were provided for EPA field staff and State WQM officials.

Clean Lakes Management

- A proposed regulation for administering the Clean Lakes program was published; proceedings from the national lake restoration conference were published.

- Forty-five (45) Clean Lake grant applications were evaluated. In total, 41 grant awards were made.

- A Clean Lakes urban initiative was started, which resulted in the funding of 10 urban lake projects in the beginning of 1980.

1980 Program

In 1980, the Agency has allocated a total of $15,029,700 to this program, of which $10,661,500 is for the Salaries and Expenses appropriation and $4,368,200 for extramural purposes under the Abatement, Control and Compliance appropriation.

In 1980, a total of $101.2 million in grants will be awarded, including $37.5 million in Section 208 grants, $48.7 million in Section 106 grants, and $15 million in Section 314 grants. The total of $ 4,368,200 for Abatement, Control and Compliance will include $1,220,800 for development of nonpoint source best management practices (BMPs), $300,000 for Financial Management Assistance Projects, $499,000 for technology transfer and public involvement, approximately $555,000 for WQM support contracts, $701,000 for an assessment of industrial energy development impacts on critical western river basins, and $1,092,400 for statistical support of regulations development and for evaluation and integration of the water strategy.

In 1980, all States will be required to have signed SEAs to receive 1980 WQM funding. Together with coordination of Section 106 grant program development, staff under this program will be placing increased priority on funding Section 208 plan implementation from Section 106 funds. The Sections 208/106/314 needs assessment, initiated in 1979, will be completed to assist in setting national, State and local priorities for 1981 funding.

In 1980 Section 208 emphasis is on prototype NPS projects to assure that limited funds are used for highest priority problem solutions and that necessary intensive technical assistance and focused management are provided for all funded projects. Transfer of workable solutions to other States and localities is being emphasized. Water quality management (WQM) field staff are overseeing, coordinating and assisting more than 200 Section 208 agency projects that were initiated in 1978 and 1979. National expert assistance is provided as required. Assuring implementation of approved plans and following up on completion of initial plans will result in an increased workload.

State/EPA Agreements (SEAs)

- Responsible for Agency coordination of 1981 SEA guidance and final SEA regulations.

- Develop requirements for integrating all WQM programs in in 1981 SEAs.

- Assess the adequacy of all 57 1980 SEAs.

Nonpoint Source Controls

- Manage 30 national urban runoff projects (NURPs). These projects were selected to develop a variety of prototype control programs that can be transferred to other communities. Hazardous materials scans will be conducted in the development of these projects.

- Fund, manage and provide expert technical assistance to States and areawide agencies on over 300 other urban runoff, agriculture, silviculture, ground water protection, construction runoff, and other problem specific projects.

- Select 20-25 first round Rural Clean Water Program (RCWP) implementation cost sharing projects. Participate in national, State, and local RCWP coordinating committees with USDA to select these 20-25 candidate projects. Continue 23 joint EPA/USDA Model Implementation Program (MIP) and Agricultural Conservation Program (ACP) prototype projects.

- Provide assistance to other EPA and Federal programs to implement educational programs for State foresters and landowners, and implement non-coal mining regulations.

Sections 208/106 Grants Management

- Complete the 5-year Sections 106/208/314 State needs assessment initiated in 1979.

- Allocate grant funds to the extent feasible, on the basis of program needs and national priorities. In addition to past Sections 106/208/314 needs, new program activities include: hazardous and toxic waste monitoring, spill response and prevention and State pretreatment program management.

Public Information and Technology Transfer

- Operate the technology transfer system initiated in 1979, including information on completed plans and new projects funded in 1980.

- Provide $200,000 to support regional public involvement projects in WQM priority areas.

Clean Lakes Management

- Review 70 Clean Lakes grant applications and recommend appropriate award actions for up to 45 projects. Provide adminsitrative attention to approximately 115 operating Clean Lakes grants.

- Publish final regulation and program guidance to administer Clean Lakes program under Section 314.

- Assist nearly all States with the implementation of State/EPA agreements on Clean Lakes program requirements.

- Initiate an evaluation of lake restoration techniques and develop technical/economic criteria for evaluating and funding Clean Lakes projects.

- Assist efforts in 15 States to classify publicly owned fresh water lakes according to trophic condition.

- Initiate effort to input and review the quality of Clean Lakes grant water quality data into STORET, and the Grant Information Control System (GICS).

- Conduct four EPA regiona/State workshops to explain operational procedures of the Clean Lakes program, complete and distribute public awareness information about lake restoration methods and benefits, and publish a users' manual on grant assistance offered under the Clean Lakes program.

- Sponsor an international (North American/European) symposium, on Clean Lakes restoration. The objective of the symposium is to obtain information available on methods and procedures for lake restoration for inclusion in the Administrator's Section 304(j) report to Congress in 1981.

1980 Explanation of Change from Budget Estimate

The net decrease of $482,900 results from several actions. An increase of $402,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $69,000 and $17,400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $164,500 to this activity.

A reprogramming of $1,454,800 was made to water quality standards to consolidate standards, criteria, and regulations functions. A reprogramming to the solid waste media, management program implementation ($22,000), and uncontrolled hazardous waste ($26,200) was made for improved direction and guidance to the agencies implementing Section 208 plans.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers from water quality NEPA compliance municipal waste facility construction ($118,600); from air quality management implementation ($80,100); to water quality municipal waste treatment facilities ($12,600); from drinking water public systems supervision program assistance ($8,700); to air stationary source enforcement ($51,100); from water quality ambient water quality monitoring ($38,100), and water municipal waste treatment facility construction ($4,000).

A congressional add-on of $354,000 was made for the Poplar River Study.

1981 Plan

In 1981, the Agency requests a total of $15,056,000 and 300 permanent workyears for this program, of which $11,098,500 is for the Salaries and Expenses appropriation and $3,957,500 is for the Abatement, Control and Compliance appropriation. This is an increase of $26,300 and a decrease of five permanent workyears.

In 1981, the water quality management (WQM) program will be emphasizing improved program management, completion of the Section 208 grants program by 1984, and building a technological basis for the transfer of effective problem solutions. In awarding grants under Sections208, 106, and 314 of the Clean Water Act (CWA), WQM staff will concentrate on high priority program areas and problem sites, on program integration and coordination, and implementation of supportive funding policies.

In 1981, the WQM program will be emphasizing broader involvement of related programs in EPA and other Federal agencies, to support both continuing Section 208 planning and the implementation of completed plans, particularly those dealing with advanced waste treatment (AWT) needs decisions, urban runoff control, agricultural nonpoint source control, and ground water protection. Implementation of approved plans will continue to be stressed. Successful plan implementation and approved SEAs will become criteria for future Section 208/106/314 funding eligibility. Improvement of State and local capabilities to obtain and manage implementation resources will continue as a high priority. In 1981, the financial management assistance program will disseminate the tools and techniques to help fund, plan, and implement projects that were developed during 1979 and 1980.

Grant awards for State Section 106 programs, continuing Section 208 planning and Section 314 Clean Lakes Programs will be committed and awarded according to priorities and phasing established in work plans and State/EPA agreements. 1981 awards will reflect both national priorities and major localized problems identified in the 5-year State needs assessment. Funding support of public involvement by concerned groups will be continued with emphasis on groups with significant interests in national WQM priorities.

Clean Water Act (CWA) Sections 208 and 106 grant programs managed under this element will provide approximately $83 million through negotiated work plans and State/EPA Agreements (SEAs) to State, interstate, areawide, and local agencies. Resources under this element will also be required to develop, negotiate and implement integrated SEAs which include the Resource Conservation and Recovery Act (RCRA) and the Safe Drinking Water Act (SDWA) grant programs, and other EPA programs. 1981 new obligational authority requested is $34 million under Section 208 and $46.7 million under Section 106. These funds will be available on a 2-year grant basis. (See grants assistance program for further description.)

In 1981, $3,957,500 is requested for extramural purposes under the Abatement, Control and Compliance appropriation, including $500,000 for nonpoint source control development, management, and implementation; $500,000 for Financial Management Assistance Projects (FMAPs); $1,000,600 for technology transfer and education; approximately $447,900 for WQM support contracts, $354,600 for continuing assessment of industrial energy development impacts on critical western river basins, and $1,154,500 for statistical support of regulations development and for revision of the water quality strategy.

Specific outputs in 1981 will include:

State/EPA Agreements (SEAs)

- Work with other EPA programs to promulgate final SEA regulations.
- Assess the adequacy of WQM coverage in 1981 SEAs in all States.
- Complete development of WQM sections in 1981 integrated SEAs for all 57 States/Territories and begin development of SEAs for 1982.

Nonpoint Source Controls

- Provide expert technical assistance to State and areawide agencies on nonpoint source projects including urban runoff, agriculture, silviculture, and ground water, with emphasis on national prototype projects.
- Analyze and document cause and effect runoff/water qualtiy relationships identified in 41 agriculture, silviculture, and urban runoff prototype projects. Prepare preliminary NURP report to Congress on causes, effects and controls, final report to be completed in 1982.
- Conduct program assessment and evaluation of agricultural NPS strategy, and update strategy as required.
- Provide assistance to other EPA and Federal programs to implement educational programs for State foresters and landowners; and implement non-coal mining regulations.

- Select six additional ground water protection prototype projects with emphasis on hazardous dump sites.

- Fund and manage State and local high priority agriculture, urban, silvicultural, and ground water protection projects.

Sections 208/106 Grants Management

- Develop prioritized work programs on negotiations of Section 106 grant awards, using the needs assessment to help set priorities.

- Allocate Section 208 grant funds to regions on basis of funding plans results of the State needs assessment. (Needs-based procedures for allocating 1981 funds will be issued in 1980.)

Public Information and Technology Transfer

- Operate the technology transfer system including information on 41 completed prototype projects plus new projects funded in 1981.

- Implement technology transfer effort to disseminate results of completed national prototype projects, particularly from NURPs, EPA/USDA MIPs and ACP projects.

Clean Lakes Management

- Provide technical review for over 150 clean lake grant applications and recommend appropriate award acitons for up to 75 projects. Provide administrative and project officer attention to approximately 120 operating Clean Lakes projects.

- Assist all 57 States and Territories in developing comprehensive State administrative plans that address lake watershed pollution controls and multiyear priority lists for over 150 Clean Lakes applications.

- Provide four policy and technical assistance workshops/meetings with regional and State officials.

- Continue technical evaluation of lake restoration techniques, as well as the economic evaluation of completed Clean Lakes projects.

- Publish proceedings from the international symposium on lakes restoration, publish the Administrator's Section 304(j) report, and publish public awareness information on the Clean Lakes program.

GREAT LAKES PROGRAM

1979 Accomplishments

In 1979, the Great Lakes National Program underwent an intensive Agency review and analysis which resulted in new initiatives to more substantively involve the Agency's operating divisions and the States in an accelerated Great Lakes clean-up effort. Some program accomplishments include:

- Completion of the second year of the Lake Erie intensive surveillance survey with special emphasis on toxic pollutants. Preliminary results indicate that the lake is no longer rapidly deteriorating, and there is some evidence of improvement.

- A radioactivity surveillance plan was implemented on Lakes Huron, Michigan, and Superior by the United States. The Canadians conducted the same program on Lakes Erie and Ontario.

- Specialized technical expertise was provided for several major Great Lakes enforcement cases, including Waukegan Harbor and Detroit.

- Two Section 108(a) grants totalling $1.2 million were awarded to Saginaw, Michigan, and Cleveland, Ohio, to demonstrate innovative technology to control storm and combined sewer overflows.

- Regulatory assessments of areas adversely impacted by high levels of toxic pollutants were initiated at Wyandotte, Michigan and Ashtabula, Ohio.

1980 Program

The 1980 allocation for the Great Lakes abatement and control effort is $6,500,700 of which $730,300 is for Salaries and Expenses and $5,770,400 is for the Abatement, Control and Compliance appropriation. 1980 marks the beginning of a redirected Great Lakes surveillance program including:

- $400,000 for instituting with the States, the U.S. Fish and Wildlife Service and U.S. Food and Drug Administration a coordinated fish tissue analysis program to detect toxic pollutants which threaten public health.

- Establishment of technical assistance teams for Lakes Erie and Huron to accelerate data analysis capability ($190,000).

- Initiation (in cooperation with the Canadians) of intensive water quality surveillance surveys on Lake Huron as well as special water intake and tributary monitoring programs.

- Implementation of an atmospheric loading network to estimate the amount of pollutants being transferred from the air to the water (including acid rain) ($200,000).

- In 1980, resources for regulatory problem area assessments will also be increased. Studies will continue at Wyandotte and Ashtabula, and new efforts will begin on the Buffalo River in New York.

- The Section 108(a) grant program will allocate $1.4 million for approximately five new demonstration projects to control rural nonpoint source and toxic pollutants within the Great Lakes basin.

- Major efforts will be undertaken by the Program to coordinate the numerous hazard assessment programs of the States and the International Joint Commission (IJC) and ORD to ensure that health and environmental contaminant inventories are directed toward the detection and control of known and suspected toxic pollutants.

- The report of the International Phosphorus Management Strategies Task Force will undergo intense review, and policy recommendations on the need for further phosphorus reductions will be formulated.

Finally, the program will take the lead "catalyst" role within the Agency to implement the approved Great Lakes strategy with particular emphasis on increasing State involvement in Great Lakes pollution control efforts through the 1981 State/EPA Agreements.

1980 Explanation of Changes from Budget Estimate

The net decrease of $700 results from several actions. An increase of $20,400 results from the cost of the October pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $6,400 and $13,300, respectively.

1981 Plan

In 1981, $6,529,300 and 15 permanent workyears are requested for this program of which $664,300 is for the Salaries and Expenses appropriation and $5,865,000 is for the Abatement, Control and Compliance appropriation. The majority of the Great Lakes program staff will continue to be engaged in contract and grant management and in providing technical assistance and support to the States and operating divisions.

State water quality standards and management plans will receive special attention to insure that both are supportive of the objectives contained in the international Great Lakes Water Quality Agreement of 1979. Efforts to evaluate and coordinate Great Lakes and toxic and hazardous material control programs as well as airborne pollutants programs will also continue. Increased emphasis will be placed on translating pollutant source data into implementable regualtory programs.

Regulatory assessments and Section 108(a) grants will continue to be initiated and directed toward the control of toxic pollutants in key Great Lakes areas. The surveillance programs will concentrate on Lake Ontario and on increasing quality control and data interpretation for the fish and sediment analyses programs.

CLEAN LAKES PROGRAM

1979 Accomplishments

In 1979, $9,203,600 was obligated for clean lakes grants. EPA continued to provide assistance for both lake restoration projects and for State classification of their lakes by trophic condition. Fifty-one (51) proposals were received with the following results:

- EPA funded 20 State grants for lake classifications;
- EPA funded nine new lake restoration projects;
- EPA funded 16 amendments for existing lake projects; and
- EPA rejected or had withdrawn six proposals.

Additionally, 10 projects from previous years were completed.

1980 Program

In 1980, the Agency has allocated a total of $15,000,000 for this program under the Abatement, Control and Compliance appropriation. Under the new program regulations, EPA will continue to provide technical and financial assistance for Phase I (planning and feasibility studies), Phase II (implementation awards), and State classification projects. Following the publication of the regulation, Regions will assume all grants administration and project officer responsibilities for approximately 100 grants/ cooperative agreements.

In 1980, EPA anticipates funding:

- approximately 20 State grants for lake classification;
- approximately 20 new lake restoration projects; and
- 10 Phase I grants, as a part of the Urban Initiative.

In addition, 20 projects will be completed during the fiscal year.

1980 Explanation of Changes from Budget Estimate

There is no change in this program activity.

1981 Plan

In 1981, the Agency requests a total of $13,500,000 under the Abatement, Control and Compliance appropriation with which EPA will attempt to meet the increasing funding demands for projects from States.

In 1981, EPA will:

- Receive approximately 150 clean lakes proposals.
- Fund approximately 30 Phase I (planning and feasibility) projects.
- Fund approximately 20 Phase II (implementation) projects and amendments.
- Complete approximately 20 projects.

60-531 O - 80 - 36

CHESAPEAKE BAY PROGRAM

1979 Accomplishments

In 1979, the Agency obligated $2,573,800, including $2,148,200 for extramural purposes for the Abatement and Control Chesapeake Bay Program.

During 1979, the program plan developed by EPA with the States of Maryland and Virginia and Bay area citizens, and implemented in 1978, was reviewed and expanded or modified to incorporate relevent concerns into the management decision making process. Major emphasis in 1979 was on the development of a toxic point source assessment program and a data management effort to handle the information developed by the Chesapeake Bay Program. Also during 1979, an environmental management study was initiated to assist in better understanding present Bay management and review major water resource management mechanisms.

1980 Program

In 1980, the Agency has allocated a total of $1,972,700 to this program, of which $132,600 is for Salaries and Expenses and $1,840,100 is for extramural purposes under the Abatement, Control and Compliance appropriation.

In 1980, the Chesapeake Bay Program under both the research and the abatement and control activities will continue the efforts initiated in 1978 and 1979. New projects will be initiated to provide information necessary to make informed management decisions. This will include a major baywide survey to develop the most complete set of data ever collected addressing water quality conditions of the Bay. The 1980 program will be geared toward integrating the vast amounts of research and management data being collected. Efforts will include mathematical modeling and simulation, data synthesis, and the identificaiton of control alternatives to abate pollution problems threatening the environmental health of the Bay.

Toxics substance source assessment studies will analyze the introduction of pollutants into the Chesapeake Bay ecosystem from point and nonpoint sources. This information will be used to predict current and future loadings under a series of alternative development projections and management strategies. Transport and fate studies will develop baywide projections which will be used to evaluate the management strategies proposed to achieve environmental goals, standards, and criteria.

The eutrophication and submerged aquatic vegetation projects will produce baywide assessments of projected ecosystem changes. The reports will be integrated into and will guide abatement and control development projects designed to mitigate specific non-acceptable trends.

Studies of existing management agencies and mechanisms will continue and will provide the basis for a better understanding of the factors affecting and influencing the Bay decision process.

State participation programs, with the States of Maryland and Virginia and citizen participation programs, will continue to provide key coordination links between the States, the public, and the Chesapeake Bay Program.

1980 Explanation of Changes from Budget Estimate

The net decrease of $27,300 results from several actions. An increase of $4,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to supplies and expenses resulted in a decrease of $31,600.

1981 Plan

The Agency requests a total of $2,009,200 and five permanent workyears for this program in 1981, of which $195,500 is for the Salaries and Expenses appropriation, and $1,813,700 is for the Abatement, Control and Compliance appropriation.

The 1981 Chesapeake Bay Program, under both research and development and abatement and control, will continue to conduct the final integration of the research in the areas of toxics, submerged aquatic vegetation and eutrophication. This will include development of a predictive capacity to assess the effects of pollutant loadings to the system, development of a source assessment protocol for toxic substances and nutrients entering the estuarine system from point and nonpoint sources, definition of the transport and fate of toxic substances in the system, and synthesis of data to evaluate control options to ameliorate eutrophication and major ecosystem changes such as the disappearance of submerged aquatic vegetation. The environment management study will assess the existing management structure and propose viable control alternatives to achieve effective management of the Bay, its uses and resources. Synthesized reports for toxics, submerged aquatic vegetation, eutrophication, and environmental management will be produced and integrated into information useful to Bay region decision makers.

In 1981, the data management system will be fully operational and will handle the data produced in the studies under this program and provide the basis for a centralized data bank for the Chesapeake Bay.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE/ENVIRONMENTAL IMPACT STATEMENT PREPARATION - WATER QUALITY

1979 Accomplishments

In 1979, the Agency obligated $222,700 for this activity. In August 1978, EPA revised its policy and no longer requires the regions to prepare EISs for Section 208 WQM plans. However, as part of this policy, 18 detailed EISs being developed on specific WQM plans were completed in 1979. In addition, the regions assured that the environmental assessments required in the WQM planning process were conducted in a manner consistent with the spirit and intent of NEPA, including appropriate citizen and public agency participation.

1980 Program

In 1980, the Agency has allocated $205,900 under the Salaries and Expenses appropriation for this activity. Under the new EPA policy on NEPA compliance, the regions are responsible for assuring that environmental assessments required in the WQM planning process are conducted in a manner consistent with the spirit and intent of the NEPA. Appropriate citizen and public agency participation will also be assured. More than 200 State and areawide agencies will be conducting continuation planning projects funded under Section 208. In addition, the last 13 final EISs will be completed on initial Section 208 WQM plans.

1980 Explanation of Changes from Budget Estimate

The net increase of $29,900 results from several actions. An increase of $8,300 results from the cost of the October pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $500. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $17,400 to this activity.

A reprogramming of $5,300 to water quality standards and regulations; and $19,000 to solid waste uncontrolled hazardous waste sites was made to prepare EISs needed for the construction grant program. A reprogramming of $9,700 to water quality environmental emergency response and prevention, and $9,400 to water quality NEPA compliance municipal waste facility construction was made to streamline the accounting process.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers from drinking water public systems supervision program assistance ($7,200); from water quality NEPA compliance municipal waste facility construction ($7,000); from solid waste hazardous waste enforcement ($1,500); from air stationary source enforcement ($29,600); and from water quality manpower planning and training ($2,800).

1981 Plan

In 1981, the Agency requests $192,400 and seven permanent workyears under the Salaries and Expenses appropriation for this activity. The regions will be responsible for assuring that environmental assessments required in the WQM planning process are conducted in a manner consistent with the spirit and interest of the NEPA, including appropriate citizen and public agency participation. Approximately 200 State and areawide agencies will be conducting continuation planning projects under Section 208.

WATER QUALITY

Effluent Standards and Guidelines

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Salaries and Expenses	$ 5,585	$ 4,178	$ 5,821	$ 6,367	+$ 546
Abatement, Control and Compliance	20,345	24,933	22,662	23,678	1,016
Grand Total	25,930	29,111	28,483	30,045	+ 1,562
Permanent Positions	114	113	116	112	-4
Full-time Equivalency	135	152	151	147	-4

Budget Request

An appropriation of $30,045,500 and 112 permanent workyears is requested for 1981. This is an increase of $1,562,100 and a decrease of 4 permanent workyears over the 1980 level of $28,483,400 and 116 permanent workyears. The additional funding will be used to increase work in industrial hazardous waste controls (e.g. management practices for sludges, energy saving technologies in water pollution and developing regulations for major segments of the "synfuel" industry (gasohol), and coal gasification).

Program Description

The program was mandated in 1972 to develop uniform, national effluent limitations and standards for 34 major industrial categories that discharge waste into the Nation's waters. The regulations implementing these effluent limitations guidelines were promulgated under the combined authorities of Sections 301, 304, and 307 of the Clean Water Act. These authorities provided for different levels of treatment technologies for the industrial categories identified by the Agency as substantial contributors to water pollution. The regulations developed were based on the demonstrated use of the best practicable control technology (BPT) then available. Designated industrial categories were to be in compliance by 1977. Limitations based on the best available technology economically achievable (BATEA) were to be promulgated, with industrial compliance required by 1984. Section 306 of the 1972 Act required institution of standards for new industrial sources of waste water. Section 307 mandated development of pretreatment standards for those industries that discharge waste water into municipal wastewater treatment works.

Beginning with the 1976 Settlement Agreement between EPA and Natural Resources Defense Council (NRDC) et al, the Agency has continued to shift its program emphasis toward the control of toxic water pollutant discharges. In 1977 this shift was reemphasized by the Clean Water Act of 1977 which essentially incorporated the requirements of the Settlement Agreement on toxic pollutants. The required redirection of program activities and a reallocation of available resources has been accomplished. In particular, the emphasis on toxic pollutants has required the concurrent development and use of new sampling and analytical methods, substantial increases in resources devoted to analytical sampling and analysis activities, development of new and cost-effective analytical methods of routine monitoring of individual toxic pollutants, examination of wastewater treatment technologies for effective removal of toxic pollutants, and more intensive and thorough engineering investigations of specific industrial categories.

Toxic pollutants now are being addressed by the Agency in effluent guidelines program efforts including development of regulations for BATEA, new source performance standards (NSPS) and pretreatment standards as required by the Settlement Agreement and the Clean Water Act of 1977. These regulations will be aimed at controlling the water discharge of 65 compounds and classes of compounds for 34 primary industrial categories. Every one of these 34 industry categories is under investigation, some of the studies are nearly completed and proposed regulations have been issued in five industrial categories. Each category requires examination of processes in the industry, water usage, waste water characteristics, and treatment technologies either in use or potentially applicable. In addition, the requirement of economic achievability has led the Agency to conduct exhaustive studies of the financial and economic structure of each industry and each subcategory of these industries to assess the economic achievability of various regulatory options.

In activities which have a direct bearing on efforts in hazardous waste controls under the Resource Conservation and Recovery Act (RCRA), the Agency is formulating best management practices (BMP) under section 304(e) for controlling toxic pollutants originating from plant site runoff, spillage or leaks, sludge or other waste disposal, and drainage from raw material storage facilities which are associated with or ancillary to the industrial manufacturing or treatment process.

Section 304 also requires EPA to develop technology-based effluent limitations for so-called "conventional" pollutants. Presently, conventional pollutants include biochemical oxygen demand (BOD), total suspended solids (TSS), pH, oil, grease and fecal coliform. The 1977 Act removes best available technology economically achievable (BATEA) as the appropriate control level for conventional pollutants but adds a new level of technology for establishing such limitations, termed best conventional pollutant control technology (BCT).

The new technology-based limitations for conventional pollutants cannot be less stringent than BPT or more stringent than BATEA standards. On August 29, 1979, the Agency promulgated its review of existing BAT limitations for conventional pollutants for those industries not included in the group of 34 industries covered by the consent agreement. This regulation also detailed the methodology which will be used to evaluate BCT when it is established in the future. The BCT regulations will save the settlement agreement (i.e., "secondary") industries up to $200 million in water pollution control costs, which represents about 50 percent of previously estimated future clean-up expenditures for these industries. By eliminating some future clean-up requirements, the BCT regulations will help to ensure that industrial water pollution control expenditures are cost-effective in improving the Nation's water quality.

Consistent with Section 307 (b) and (c), pretreatment standards for both existing and new industrial sources are forthcoming, with 5 categories now proposed. These standards will include pretreatment limitations on the discharge of toxic pollutants to publicly owned treatment works (POTW), consistent with the demonstrated operating performance of POTW's in effective treatment of toxics.

In developing new regulations and in reviewing existing ones, there is a major effort to incorporate legislative requirements of the Clean Water Act with those of other statutes. For example, in the development and review of BATEA regulations, new technology for recycle and reuse of industrial wastewater will be developed and incorporated with the related RCRA requirements for the disposal of hazardous wastes. Studies of how best to integrate the regulatory requirements of the BATEA toxics control effort with RCRA are on-going. RCRA hazardous waste management regulations that are scheduled for promulgation. To meet the Clean Water Act and RCRA statutory requirements for the disposal of residues, a joint effort by several EPA programs is underway. The Office of Water Enforcement is developing guidance on BMPs for control of toxic discharges from sludge and waste water disposal for the National Pollutant Discharge Elimination System (NPDES) permit authorities. The Office of Solid Waste is developing, under RCRA authority, specific regulations dealing with any sludges that are hazardous. The Office of Water Planning and Standards will continue to provide data support and formulate specific best management practice regulations for the control of residues in coordination with both the Office of Water Enforcement and the Office of Solid Waste.

In 1981, the Agency will continue its efforts to collect and analyze the technological, economic, health, and general environmental factors as fundamental inputs to the development of specific regulations. To complete the revision of the existing BATEA limitation guidelines for the industries identified in the Clean Water Act, EPA will continue to characterize effluents with respect to the 65 classes of priority pollutants and to evaluate the effectiveness of appropriate treatment technology in removing or reducing toxic pollutant concentrations. Technical, statistical, and economic support will be provided to respond to litigation against promulgated BATEA regulations. In cases of litigation the agency reviews its data base, technical and economic analyses and prepares resource intensive support documentation.

To complete the best conventional pollutant control technology (BCT) regulations, new technical, economic, and statistical data bases will be compiled to allow determination of the necessity of revising existing BATEA regulations to meet the added test of economic reasonableness imposed by the Act for conventional pollutants. This effort will ensure that the most appropriate control mechanism for conventional pollutants has been established, that required level of technology has been defined, and that applicable regulatory approaches will be selected from technically viable alternatives. Thorough economic impact analyses of effected industries will be conducted to assess the economic ramifications of alternative limitations, and, in particular, to assure that the ultimate regulation is economically achievable, and equitable.

1979 Accomplishments

In 1979, the Agency obligated $25,930,800 for this activity, including $20,345,500 for extramural purposes. This includes $20,054,900 for contracts; $282,000 for automated data processing (ADP) costs; and $8,600 for an interagency agreement. The contract obligations include $12,629,400 for technical analytical studies; $3,656,500 for economic and statistical analysis; $267,000 for determination of health effects; and $3,502,000 for analysis of environmental distributions of pollutants and exposure/risk. During 1979 program accomplishments include:

- Technical studies that identified nearly 100 subcategories within 17 industrial categories, for final determinations (pursuant to Paragraph 8, NRDC Settlement Agreement) that national BATEA (Toxics) or pretreatment standards were not appropriate. The principal rationale was that (1) existing standards controlled toxics adequately, (2) only one plant was identified in a subcategory, or (3) plants (processes) already achieved zero-discharge because of dry processes.

- Field work and draft reports for a nationwide study of water quality impacts due to seafood processing (pursuant to Section 74, Clean Water Act) were completed. Technical work on the BCT review of 33 subcategories in Seafood processing and economic studies in 5 subcategories also were completed. Additional economic studies for the remaining 28 subcategories are currently underway.

- Efforts to collect and analyze for toxic pollutants influent and effluent samples of domestic wastewaters in publicly-owned treatment works (POTWs) were initiated as part of the Agency's multimedia POTW toxics control strategy; the toxic removal capability of POTW characterization study was completed, including an evaluation of sludge contamination; an analysis of the content of combined sewer influents to POTW was completed using a projection of the industrial effluent burden upon POTW.

- The basic development and validation of improved analytical methods for detection of toxic pollutants in most complex industrial waste water discharges was completed.

- Technical studies for proposed regulations were completed for eight of the 34 primary industries. Work continued on 26 others.

- Environmental studies were completed which included geographical and quantitative industrial profiles for an environmental risk assessment of 11 additional BATEA industries. This study involved extensive data gathering in each region of the Nation to determine the concentration of pollutants in the environment in those regions. This information identified the regions and industries that required special attention because of the severity of their point source pollution problems.

- Economic analyses for proposed regulations covering the potential impacts of each treatment alternative for one (leather tanning and finishing) of 34 primary industries were performed. An economic analysis for the final electroplating pretreatment regulation was also performed.

- Measures were initiated to add substances to the Administrator's list of toxic pollutants, as required in Section 307 (a) of the Clean Water Act, by developing a selection rationale for choosing pollutants and by documentation of the human health and environmental effects of those pollutants.

- Technical information studies for best conventional pollution control technology (BCT) for eight of 34 primary industries were completed. This required examination of data on incremental cost of conventional pollutant removal by appropriately sized plants in each subcategory of each industry and POTW. The cost data were systematically compared and analyzed for each alternative level of conventional pollutant treatment to conventional pollutants in each subcategory.

- Secondary Industry Review was completed which resulted in promulgated BCT guidelines for 53 subcategories. Also, a methodology was developed which will be applied to other BCT limitation development.

- Effluent and sludge from 15 POTWs were sampled and analyzed for the "priority pollutants."

1980 Program

In 1980, the Agency has allocated $28,483,400 for this activity including $5,821,400 for Salaries and Expenses and $22,662,000 for extramural purposes under Abatement, Control and Compliance. This subactivity includes $300,000 for ADP costs and $22,362,000 for technical, economic and environmental studies for the proposal and promulgation of best available technology economically achievable (BATEA) effluent guidelines; new source performance standards (NSPS); and pretreatment standards for new sources (PSNS) for the remaining primary industries. These studies will also provide for the continuation of the development of regulations for best management practices (BMP), for Resource Conservation and Recovery Act (RCRA) related hazardous sludges, best conventional pollutant control technology (BCT) regulations for the remaining secondary and primary industries, development of a preliminary Publicly Owned Treatment Work (POTW) toxic pollutant regulatory strategy, and conducting the first phase of the synfuel investigations with priority on gasohol manufacture. In 1980, the program will:

- Complete technical studies for development of proposed regulations in 26 of the 34 primary industries. This work includes detailed laboratory analysis of effluent samples collected from plants in each subcategory of each industry, evaluation of the treatment performance of pollution abatement equipment currently used in each industry, accounting for variations in plant size, expansion space availability, location, age, and production process. The technical studies will also explore the feasibility of process changes to recycle or reuse water and the range of treatment technologies used in other industries that might apply to the industry under study. For each treatment option, process change, and alternative technology, the costs incurred by plants in the industry must be determined.

- Publish final regulations establishing national effluent limitations and standards for 9 primary industries.

- Complete economic studies for development of proposed regulations in 26 of the 34 industries. Because full economic impact information is required before a preferred treatment option is selected, each treatment alternative must be subjected to an economic analysis. These analyses become successively more detailed as the range of option narrows; the final small group of options considered are examined separately for impacts on prices, production, employment, industry size and concentration, foreign trade, regional economics, the economics of related industries and capacity. A precursor to this step is the analysis of economic data on the industry to determine the economic and financial structure of model plants most appropriate for regulatory economic assessment of the industry. When necessary, economic impacts are determined according to several alternative economic organizational assumptions.

- Continue to incorporate needs of other statutes, in particular RCRA, into technical and economic studies to develop industrial effluent guidelines. Information on sludge generation, storage, and disposal and associated costs, and the handling of hazardous materials and other solid wastes will play a major role in the development and proposal of effluent guidelines regulations. Support for this work will include collection of initial data on sludge generated by 30 industrial point source categories and by POTW. These data will provide a major technical input to the Office of Solid Waste on sludges generated by industrial BATEA requirements as well as POTW sludges controlled under Section 405(d) guidelines as part of an expanded complementary activity for RCRA. This effort will reduce corporate and governmental administrative burdens in data collection, permit issuance and compliance.

- Propose and promulgate Agency analytical methods of analyses of toxics in industrial waste water and continue investigations of methods applicable to toxic analysis of sludges and other complex industrial waste streams.

- The Agency expects to propose regulations for best available technology economically achievable (BATEA) effluent guidelines, new source performance standards (NSPS), pretreatment standards for existing sources (PSES), and pretreatment standards for new sources (PSNS) for up to 25 primary industries in 1980.

- Incorporate into new regulations consideration of innovation and alternative treatment technologies (including cost and energy), and enhance recycling and reuse of water waste to reduce industrial costs and enhance environmental benefits.

- Begin development of data to define model plants for synfuels in gasohol, high BTU coal gasification, low BTU gasification, direct coal liquefaction, indirect coal liquefaction and oil shale synfuel technologies. The model plants will be used to establish baseline discharges, baseline capital cost of the facility and baseline O&M costs of synfuel facilities using best available data from existing pilot scale facilities.

- Continue to investigate levels of toxic pollutants discharged to and by POTW through wastewater and sludge. The results will guide the Agency's approaches to implementation of pretreatment programs, to sludge disposal or beneficial use, and to reexamination of standards for wastewater discharges from POTW.

- Conduct environmental studies, including geographical and quantitative industrial profiles for an overall environmental risk assessment of 11 additional BAT industries. This study involves extensive data gathering in each region of the Nation to determine the concentration of pollutants in the environment in those regions. This information will identify the regions and industries that require special attention because of the severity of their point source pollution problems.

- Best conventional pollutant control technology (BCT) studies will be performed for 25 of the 34 primary industries. This requires examination of data on incremental cost of conventional pollutant removal to determine a reasonable level for treatment of conventional pollutants in each subcategory.

- Initiate technical support for implementation of the standards in National Pollution Discharge Elimination System (NPDES) integrated permits. The individual plants in each industry will face different limitations, depending on their own process mixes and water use. For NPDES permit writing, methods will be developed to interpret each regulation or set of regulations applicable to each plant in the light of process wastewater and sludge generation, waste treatment and waste stream combination within the plant. Recycle and reuse of wastewaters as well as other innovative technologies will be major factors incorporated into permit writing procedures. Because of this and because of the many possibilities for chemical reaction and waste dilution within the plant, these methods will be based on a process and chemical engineering knowledge of the plant's production and discharge practices, and their relationship to the standards.

- Initiate further measures to add substances to the Administrator's list of toxic pollutants, as required in Section 307(a) of the Clean Water Act, by developing a selection rationale for choosing pollutants; and by documenting the human health and environmental effects of those pollutants.

- Continue ongoing studies of industry best management practices (BMP) for raw material storage and handling, and control of in-plant spills. Incorporate BMP study results into industrial effluent guidelines regulations where appropriate.

- Effluent and sludge from an additional 25 POTWs will be sampled for the "priority pollutants." In addition, two special surveys will be conducted to assess the impact of industrial pretreatment standards on POTW influents.

1980 Explanation of Change from Budget Estimate

The net decrease of $627,600 results from several actions. An increase of $162,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and an ADP reduction of $1 million resulted in a decrease of $4,,700 and $9,600, respectively. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in decrease of $482,700 to this activity.

A reprogramming of $48,800 was made to the management and support media for the 1979 transfer of an employee. A reprogramming of $200,000 was made to the management and support media, Office of Water and Waste Management to cover a shortfall in salary funds.

1981 Program

For 1981, the Agency requests $30,045,500 and 112 permanent workyears for this activity, including $6,367,300 for the Salaries and Expenses appropriation and $23,678,200 for the Abatement, Control and Compliance appropriation. Extramural funds are requested for technical investigations, economic and statistical support, exposure and risk assessments, analytical and sampling support, and support for court litigation and remands. In 1981, the program will:

- Propose regulations for best available technology economically achievable (BATEA) effluent guidelines, new source performance standards (NSPS), pretreatment standards for existing sources (PSES), pretreatment standards for new sources (PSNS) for the remaining 5 or 6 of the 34 primary industries, and promulgate regulations for 21 to 25 industry categories.

- Complete economic analyses for eight remaining industries. Because full economic impact information is required before a preferred treatment option is selected, each treatment alternative must be subjected to an economic analysis. These analyses become successively more detailed as the range of options narrows; the final small group of options considered are examined separately for impacts on prices, production, employment, industry size and concentration, foreign trade, regional economics, the economics of related industries and capacity. A precursor to this step is the analysis of economic data on the industry to determine the economic and financial structure of model plants most appropriate for regulatory economic assessment of the industry. When necessary, economic impacts are determined according to several alternative economic organizational assumptions.

- Promulgate BCT regulations for 21 to 25 primary industries which will serve as back-up to BATEA (toxics) regulations. Supporting industry development documents will be prepared and will include discussions of relevant alternatives and decision criteria as assistance to the National Pollutant Discharge Elimination System (NPDES) permit authorities. Efforts will include final promulgation of amendments or issuance of guidance, for BCT limitations for several food commodity industries (seafoods, meats, fruits, and vegetables) in compliance with the review requirements of Section 301 and 306 of the Clean Water Act.

- Conduct detailed analyses and sampling for expedited regulatory schemes for synfuels including coal gasification, direct and indirect coal liquefaction and oil shale industries. Included will be a technical effort encompassing an investigation of several major aspects of each of the synfuel technologies, an an economic analysis which includes a review of all existing information on the potential financial and economic structure of the industry and the development of appropriate economic models.

- Develop and prescribe best management practices (BMP) in support of RCRA controls of hazardous wastes (e.g. treatment sludges) for several major primary industries. The data from the sampling and analysis of "spills" and sludge waste streams will be incorporated into this effort to help define the potential for toxic discharges into surface waters as well as potential mechanisms for treatment or control by traditional or innovative management schemes.

- If possible, documentation of "innovative" technologies to minimize the overall discharge of all toxics will be completed for 10 industry categories, representing over 300 subcategories. Concepts which reduce costs of pollution control or result in improved production system efficiency by recycle and reuse of by-products and wastes will be emphasized in "innovative" technology review.

- Develop statistical and technical data to define quantitative "surrogate" relationships for those pollutant parameters which are common to several industrial categories. These surrogates will represent specific levels of one or more toxic pollutants. These surrogates will serve as a means for substantial reductions in costs and complexity in permit procedures and monitoring by individual point sources.

- Provide technical support to regions and State permit authorities for non-conventional waivers and how best to interpret and apply regulations in situations where pollutants have been excluded from the regulations. This technical assistance will also involve application of the "indicator" concept (i.e. non-quantitative relation in lieu of "surrogate" described above) as well as advice on subcategories or facilities excluded from national standards or problems involving BAT regulation of non-conventional pollutants.

- Continue treatability studies focusing on larger pilot studies, for actual industrial waste streams. Specific emphasis will be placed on those pollutants that cannot be readily removed or treated by traditional methods.

- Provide contract management support to the Office of Solid Waste in managing industrial waste evaluation programs (see the detailed program description for solid waste, waste management strategies, regulations, guidelines).

- Formulation of recommendations and publication of report for specific POTW regulatory strategy including support for mechanisms for pretreatment credits at the local level, inputs to Office of Water Program Operations and Office of Water Enforcement Program efforts; and for possible guidance to regions and States to POTW toxics problems. The recommendation will incorporate needs regarding definition of best practicable waste treatment technology for POTW, and implications for sludge disposal and associated program aspects for municipal grants.

- Provide for additional analysis to respond to anticipated litigation and remands covering 26 primary industrial categories. Assistance in the preparation of court records for five promulgated BAT (toxics) regulations will also be required.

WATER QUALITY

Grants Assistance Program

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Control Agency Resource Supplementation (Section 106): Abatement, Control and Compliance	$54,121	$48,730	$48,730	$48,730	--
Areawide Waste Treatment Management Resources (Section 208): Abatement, Control and Compliance	94,509	40,000	37,500	34,000	-$3,500
Training Grants (Section 104): Abatement, Control and Compliance	2,602	...	580	...	580
Total	151,232	88,730	86,810	82,730	- 4,080
Permanent Positions	...	...	...	...	...
Full-Time Equivalency	7	7	7	7	...

Budget Request

The Agency requests a total of $82,730,000 for 1981 under the Abatement, Control and Compliance appropriation. This represents a decrease of $304,700 from the 1980 level in Section 208 areawide waste treatment management resources and will result in a decreased number of Section 208 grant awards, including elimination of all construction-runoff project funding. The decrease of $580,000 in Section 104 Training Grants is due to a nonrecurring 1980 congressional add-on for academic training.

Program Description

The water quality grants assistance program includes three grants assistance activities: water pollution control State program grants under Section 106, Section 208 planning grants, and Section 104 training grants.

In 1979, EPA introduced a major reform in the management of programs under Sections 208 and 106 of the Clean Water Act through the State/EPA Agreement process. The reform is aimed at integrating water quality and related grant assisted planning, implementation, and management of environmental programs. State/EPA Agreements are negotiated annually by individual States and EPA regions (with the participation of affected local agencies and the public) and will cover all strategies and work programs that are intended to integrate water quality and other directly-related programs that are funded by EPA grants.

The Section 106 program provides Federal support to 53 State and interstate water pollution control agencies. In every major Section 106-funded State program, EPA and the States jointly perform activities that require extensive coordination. In 1981, EPA regions will award Section 106 grants according to identified annual priorities for water pollution control activities and conduct periodic reviews of State accomplishments.

The Clean Water Act provides for financial support of State and designated areawide water quality planning agencies under Section 208. This authority, combined with Sections 106 and 303 of the Act, provides the basis for control of nonpoint and point sources under the Act.

Section 208 grants are awarded to State and designated areawide planning agencies for continuing planning programs which address National, State, and local nonpoint source pollution priorities. The Section 208 grants afford State and areawide agencies the unique opportunity to plan and manage water quality programs dealing with urban runoff, agricultural runoff, construction runoff, and other nonpoint sources. Although Section 208 authorizes State and areawide agencies to evaluate both point and nonpoint sources of pollution, Section 208 grants will fund only well-defined nonpoint source (NPS) problem-solving projects. Increased emphasis will be focused on improved grant management in terms of integration, accountability, and attention to priorities when awarding Section 106 grants.

Academic training grants are awarded to institutions of higher education to meet professional manpower needs. Efforts in this area are divided into three primary categories: the professional graduate training program, the State agency fellowship program, and undergraduate training grants.

CONTROL AGENCY RESOURCE SUPPLEMENTATION (Section 106)

1979 Accomplishments

In 1979, $54,120,800 was obligated for Section 106 grants. In addition to the traditional activities that have been funded under Section 106 (including ambient and effluent water quality monitoring, NPDES program management and enforcement, and treatment plant operation and maintenance training) several emerging activities have been identified as priorities for Section 106 funding. These include: emergency response programs; toxics related activities; nonpoint source regulatory activities ; upgrading laboratory equipment; intensive surveys; pretreatment management; and program development. State program activities and outputs for 1979 included:

- Issuance, reissuance or modification of 1,100 major permits for priority municipal and industrial facilities.
- Implemented 140 publicly owned treatment works (POTW) pretreatment programs.
- Assured 3,700 State responses to emergency situations.
- Initiated 736 enforcement actions against pollution sources.
- Conducted 400 intensive water quality surveys.
- Conducted 2,005 NPDES compliance inspections.

1980 Program

In 1980, the Agency has allocated $48,730,000 for Section 106 grants under the Abatement, Control and Compliance appropriation.

Additional State delegations and funding of municipal construction management responsibilities under Section 205(g) are expected to allow limited Section 106 and State funding to support emerging priority programs, such as emergency response, dredge and fill, and pretreatment activities. Traditional State activities, including monitoring, NPDES permits issuance and compliance assurance, and municipal operation and maintenance training will continue to be funded by Section 106 grants. Construction grant program management for delegated States is now funded entirely under Section 205(g) assistance. Where delegations have not been made, States will continue to receive available Section 106 support as determined by the State/EPA Agreements. A comprehensive Five-Year Needs Assessment is being prepared by the Agency which identifies funding and staff support needs in each major program area. Planned State program activities and accomplishments in 1980 include:

- Issue, reissue or modify 1,455 major permits for priority municipal and industrial facilities.
- Implement 100 publicly owned treatment works (POTW) pretreatment programs.
- Assure 2,150 State responses to emergency situations.
- Initiate 736 enforcement activities against major pollution sources, including final effluent violations.
- Conduct 450 intensive water quality surveys.
- Conduct 2,121 NPDES compliance inspections.
- Implement NPS control programs in 44 States.

1980 Explanation of Change from Budget Estimate

There is no change from the budget estimate.

1981 Plan

In 1981, the Agency requests $48,730,000 for Section 106 grants under the Abatement, Control and Compliance appropriation. Beginning in 1981, a revised Section 106 funding allocation will be implemented, based on priority State and national needs and State/EPA Agreements. The regions will work with each State to identify its priorities for the use of Section 106 funds and the steps the State will take in 1981 to improve management of their Section 106 funds. Planned State program activities and accomplishments in 1981 include:

- Issue, reissue or modify nearly 1,755 major permits for priority municipal and industrial facilities.
- Implement 90 municipal publicly owned treatment works (POTW) pretreatment programs.
- Assure 2,000 State responses to emergency situations.
- Initiate over 271 enforcement activities against major pollution sources.
- Conduct 2,771 NPDES compliance inspections
- Implement NPS control programs in 38 States
- Operate 1,000 Basic Water Monitoring Program (BWMP) fixed stations at which samples are collected and analyzed for the priority pollutants.

AREAWIDE WASTE TREATMENT MANAGEMENT (Section 208)

1979 Accomplishments

In 1979, the Agency obligated $94,508,800 for Section 208 grants. States and EPA completed review and approval of most of the 225 initial plans during 1979. Approximately 200 continuing planning awards were made emphasizing urban runoff, agriculture, nonpoint source, Advanced Waste Treatment evaluations, and other problem-specific nonpoint source planning projects with high priorities established by national policy and 1979 State/EPA Agreements. Improved integration of planning and management requirements under Sections 208, 201, 106, and 303 was strongly emphasized. The 1979 water quality management program outputs are described in detail under the State program regulations and guidelines section.

1980 Program

In 1980, the Agency has allocated $37,500,000 for Section 208 grants under the Abatement, Control and Compliance appropriation. Beginning in 1980, unless a significant portion of completed planning is being implemented, continuing funding will not be provided. Therefore, it is expected that a limited number of State and areawide agencies will be funded during 1980. Successful agencies will be funded to perform continued planning only in nonpoint source priority areas, including urban runoff, agriculture runoff, groundwater protection, construction runoff, silviculture, and noncoal mining. Selection of the projects that will be funded is governed by selection criteria developed in 1979. Other activities, including Advance Waste Treatment (AWT) planning and pretreatment program management, that were previously funded under Section 208 will be funded under other authorities (i.e., Sections 106, 201, and 205(g)).

Additional 1980 water quality management activities and outputs are described under the State program regulations and guidelines section. Highlights of these outputs include:

- Selection, funding, and management of 30 prototype urban runoff control projects.
- Continuation of 23 Model Implementation Programs (MIP) and Agricultural Conservation Programs (ACP), which are special water quality projects developed and funded in coordination with USDA.
- Assistance to 10 additional prototype agencies in developing self-funding mechanisms for implementation of cost-effective nonpoint source control programs and for maintenance of continuing planning programs.
- Funding of: 63 agriculture NPS projects; 126 urban runoff projects; 99 groundwater protection projects; 107 construction NPS projects; 43 silviculture projects; and 46 non-coal mining projects. Some of these projects will be identified as national prototypes.

1980 Explanation of Change from Budget Estimate

The net decrease of $2,500,000 results from a congressional reduction to this activity.

1981 Plan

In 1981, $34,000,000 is requested for Section 208 grants. No Section 208 funds will be used for point source planning activities or for planning not associated with the solution of specific nonpoint source water quality problems. Related 1981 water quality management activities and outputs are described under the State Program Regulations and Guidelines section. Highlights of planned outputs include:

- Continued or completed funding for 30 prototype national urban runoff control projects (NURPs).

- Continued funding of six prototype ground water protection projects.

- Seven Model Implementation Program (MIP) and 16 Agricultural Conservation Program (ACP) projects will be funded in coordination with USDA.

- Completion of 5 prototype financial management assistance projects funded in 1980 to develop self-funding mechanisms for implementation of cost-effective nonpoint source control programs.

- Funding for other projects including: 125 agricultural NPS projects (75 for development of USDA Rural Clean Water Program (RCWP) cost sharing projects, and approximately 50 other area-specific applications of prototype technologies); 80 urban runoff projects to apply technical and financial solutions from NURP planning in other localities; 80 State and local priority groundwater projects.

TRAINING GRANTS

1979 Accomplishments

In 1979, the Agency obligated $2,602,000 for these activities, including a congressional add-on to the professional training grant program of $415,000. This included $175,000 for training graduate level students in water-related engineering and environmental sciences. In 1979, 43 graduate trainees were supported at 28 institutions. The State agency fellowship program provided $175,000 for 68 State employees from 32 State and territorial water pollution control agencies. Upon completion of this training, the employees returned to their respective agencies to work at least 2 years for each full year of financial support. The remaining $65,000 was provided for the undergraduate training program.

Professional training activities for 1979 did not include the continuation of curriculum development. The Bachelor of Engineering Technology programs are being developed at Pennsylvania State University and Rochester Institute of Technology. Undergraduate training grants were provided to four institutions in water-related engineering and environmental disciplines to support approximately 50 students at a cost of $100,000.

1980 Program

In 1980, the Agency has allocated $580,000 under the Abatement, Control and Compliance appropriation to support trainees, including graduate training programs at $105,000, undergraduate training programs at $55,000, State Agency Fellowships at $125,000, Curriculum Development at $100,000, Minority Colleges at $20,000 and $175,000 to study the feasibility of establishing interdisciplinary training centers.

The training grants provide funding support primarily for tuition, fees, and stipends for students enrolled in water quality control technology curricula.

1980 Explanation of Change from Budget Estimate

The net increase of $580,000 results from a congressional increase of $1.5 million agencywide for the academic training program.

1981 Plan

There will be no program in 1981.

60-531 O - 80 - 37

WATER QUALITY

Water Quality Strategies Implementation

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Environmental Emergency Response and Prevention:					
Salaries and Expenses....	$4,112	$8,118	$4,229	$4,970	+741
Abatement, Control and Compliance.....	3,694	...	5,536	4,295	-1,241
Standards and Regulations:					
Salaries and Expenses....	2,819	1,723	3,008	3,573	+565
Abatement, Control and Compliance.....	1,671	...	381	1,433	+1,052
Regulatory EIS Prep-Water Quality:					
Salaries and Expenses....	...	...	...	...	...
Abatement, Control and Compliance.....	500	500	500	500	...
Ocean Disposal Permits:					
Salaries and Expenses....	995	1,231	1,113	879	-234
Abatement, Control and Compliance.....	482	...	230	159	-71
Total:					
Salaries and Expenses....	7,926	11,072	8,350	9,422	+1,072
Abatement, Control and Compliance.....	6,347	500	6,647	6,387	-20
Grand Total.....	14,273	11,572	14,997	15,809	+812
Permanent Positions					
Environmental Emergency Response.....	113	122	125	129	+4
Standards and Regulations..	84	49	95	110	+15
Regulatory EIS Prep-WQ.....	...	...	...	...	...
Ocean Disposal Permits.....	27	25	28	24	-4
Total.....	224	196	248	263	+15
Full-time Equivalency					
Environmental Emergency Response.....	120	136	137	138	+1
Standards and Regulations..	94	61	108	121	+13
Regulatory EIS Prep-WQ.....	...	...	...	...	...
Ocean Disposal Permits.....	32	35	35	29	-6
Total.....	246	232	280	288	+8

Budget Request

The Agency requests a total of $15,809,000 and 263 permanent workyears for 1981, an increase of $811,700 from 1980. Included in this total is $9,422,100 for the Salaries and Expenses appropriation and $6,386,900 for the Abatement, Control and Compliance appropriation, with an increase of $1,071,900 and a decrease of $260,200, respectively. The increases in the standards and regulations program element will allow almost a full review of major/controversial dredge and fill permits.

Program Description

The water quality strategies implementation subactivity covers the Environmental Emergency Response and Prevention Program, the Ocean Disposal Permits Program, and the Standards and Regulation Program.

Environmental Emergency Response and Prevention - The primary objectives of EPA's Environmental Emergency Response and Prevention Program are to protect water quality by preventing and responding to oil and hazardous substances spills, and providing emergency assistance to hazardous waste site incidents. Section 311 of the Clean Water Act of 1977 contains the congressional mandate to provide a nationwide capability to prevent spills of oil and designated hazardous substances into the navigable waters of the United States, to respond to spills with necessary cleanup and removal actions, and to respond to other serious environmental emergencies which cause or threaten danger to public health and welfare or sensitive ecological systems, when not precluded under Section 311. Successful implementation and operation of Section 311 depends on the promulgation of key regulations (including the continuing designation of hazardous materials), revisions to the National Contingency Plan, development of national program guidance, interagency coordination, development of spill training programs, and an aggressive spill prevention program (including development of a hazardous substances prevention program).

EPA shares responsibility for the Environmental Emergency Response and Prevention Program with the U.S. Coast Guard (USCG). Jurisdictional lines between the agencies for spill response actions in navigable waters are drawn geographically with EPA having responsibility for inland water excluding the Great Lakes. The National Oil and Hazardous Substances Contingency Plan (40 CFR Part 1510) specifically charges EPA with assuming On-Scene Coordination (OSC) responsibilities for spills of oil and designated hazardous substances into or upon inland waters, and providing coordination and technical support on both the national and regional level. EPA's OSC and/or their designated representative will assume a monitoirng role or a Federal removal role, as dictated by the situation. To assure that responses are efficient and coordinated, national and regional contingency plans are required which delineate procedures, techniques, and responsibilities of the various Federal, State and local authorities.

The major new emphasis will be on the implementation of the hazardous substances spill response program. The key regulation required for implementation of the program, the Reportable Quantities Regulation, went into effect on September 28, 1979. It will be EPA's responsibility to respond on-scene to the severest environmental incidents involving the discharge or spill of designated hazardous substances. As the public becomes aware of the notification requirement in the new regulations, the number of reported hazardous substance spills to which the EPA will need to respond will increase. It will require EPA expertise and resources to address the complex technical and potentially dangerous emergencies expected to be reported under the new regulations. The increasing number of hazardous substance spills on land, as a result of truck and rail accidents, and the introduction of more chemicals into commercial use will also impact the demands on the program.

In order to augment the resources of the program, the Environmental Response Team (ERT) was established early in 1979. It is a team of experienced personnel which provides on-site consultation services to the OSC including spill response and mitigation alternatives, ecological damage assessment during an incident, determination of information needs, as well as on-site deployment of prototype spill control devices. In addition to the ERT providing immediate field assistance, the Regions also receive technical support from the Technical Assistance Team (TAT) contract. The contract was awarded in 1979 and will remain in effect through 1981 to assist the Regions and the ERT in responding to Section 311 spills and environmental emergencies.

Standards and Regulations - The standards and regulations program includes several discrete functions. National management, coordination and program development regulating the discharge of dredged or fill material (Section 404) are carried out under this program, including the review and approval of requests from States for Section 404 permit authority for specific waterways. Under Sections 304(a) and 307(a), water quality criteria are developed and published to reflect the latest scientific knowledge on the kind and extent of all identifiable effects on human health and welfare. Assistance in the development and review of State water quality standards is provided to ensure that acceptable standards are established in each State. Basic hazardous substances regulations are developed based on aquatic organisms, and designations are being expanded under Section 311 to include protection of human health. Guidelines, standards and regulations are developed to correct water pollution problems resulting from such sources as in-place toxicants and discharges from vessels and aquaculture projects.

Ocean Disposal - For budgetary purposes, the ocean disposal program is divided into two program elements: (1) ocean disposal permits program, and (2) regulatory EIS preparation. The ocean disposal program (authorized by the Marine Protection, Research and Sanctuaries Act of 1972 and operational since 1973) provides EPA with a capability to regulate ocean dumping, designate disposal sites, develop ocean related policies, and participate in interagency programs that deal with development of ocean resources.

To carry out the ocean disposal permitting functions under Title I of the Marine Protection, Research, and Sanctuaries Act of 1972, the Administrator of EPA is authorized to regulate the disposition of all materials except dredged material (which is regulated by the Corps of Engineers). The Act further prohibits the transportation and dumping in ocean water of chemical, biological, and radiological warfare agents and high level radioactive materials.

The ocean program activities are designed to insure that EPA authorities will be applied to the significant new and changing activities in the exploration and development of multiple uses of open ocean resources. The program utilizes water quality criteria, effluent guidelines, and the new ocean discharge criteria to establish the framework for EPA assistance and influence over uses of the ocean resources. Major coordination with the ocean related programs of other agencies is necessary.

ENVIRONMENTAL EMERGENCY RESPONSE AND PREVENTION

1979 Accomplishments

In 1979, the Agency obligated a total of $7,806,400 for the Environmental Emergency Response and Prevention program, of which $4,111,900 is for salaries and expenses and $3,694,500 is for extramural purposes.

Over 7,500 notifications of environmental emergencies were received by the regional offices during 1979. The program responded to 224 spills which required a Federal On-scene Coordinator to direct Federal removal actions and monitored 5,300 cleanup actions by the spiller. The spill prevention program was continued by the regions during 1979, with a combined regional effort totalling over 550 spill prevention inspections of facilities and follow-up on oil spills from non-transportation related facilities.

The promulgation of the hazardous substances regulations on reportable quantities was accomplished on August 29, 1979. This accelerated the implementation of the Hazardous Substances Spill Response Program begun with passage of the 1977 Amendments to

Section 311 of the Clean Water Act. During 1979, guidelines were drafted which define implementation procedures and EPA's responsibility when responding on-scene to discharges or spills of designated hazardous substances.

The 6-person Environmental Response Team (ERT), as defined in the Program Description was established in October-November, 1978. Through August 1979, the team responded to 38 incidents. It provided assistance during the fiscal year at the request of the regional on scene coordinators both within EPA and outside the Agency.

Contract funding of approximately $3 million was used for additional technical field support for emergency spills. The Technical Assistance Team (TAT) contract provided 32 contractor personnel to help the regions and the ERT respond to oil and hazardous materials spills and environmental emergencies, perform inspections for compliance with oil prevention regulations, prepare enforcement cases and assess spill damages. An additional $1 million was used to fund the development of hazardous substances regulations, aerial surveillance and emergency mapping for major spills, and operation and maintenance of the spill prevention management information system.

During 1979, the Emergency Response and Prevention program responded to spill incidents at uncontrolled hazardous waste sites through the authority of Section 311(k). The new hazardous substances regulations expanded this authority to include discharges of hazardous substances as well as oil. Although the regulations were not promulgated until the end of the fiscal year, EPA still was able to respond to 12 emergencies at uncontrolled hazardous waste sites.

1980 Plan

In 1980, the Agency has allocated a total of $9,765,500 and 125 permanent workyears to this program, of which $4,229,500 is for the Salaries and Expenses appropriation and $5,536,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

The Environmental Emergency Response and Prevention program expects to respond during 1980 to 230 spills which will require a Federal On-Scene Coordinatory to direct Federal removal actions and to monitor 5,300 cleanup actions by the spiller. The increase from 1979 is due to the expected increase of emergencies reported to EPA as a result of the new hazardous substances regulation notification requirements. The demand for EPA response is also expected to increase because of the complex and potentially dangerous emergencies expected with hazardous substances spills, which will require technical expertise and resources not available from other sources. EPA is projected to receive 8,300 notifications of environmental emergencies during this fiscal year.

The spill prevention program will be on-going in 1980. It is expected that over 500 prevention inspections will be performed following major spills. In addition, drafting of spill prevention regulations for hazardous substances covering "402 permitted" facilities, publicly owned treatment works (POTWs) and non 402 permitted facilities will be completed in 1980. The implementation of the hazardous substances prevention program is a major program initiative that should reap substantial control and counter measure benefits in 1980 and the future.

Contract funding of $5,536,000 will be used to provide major technical assistance and support to current EPA efforts. The $3,200,000 technical assistance (TAT) contract will continue to provide the same support as it did in 1979, as well as training to Federal, State and local officials. In addition, a congressional add-on of $1,250,000 to the 1980 appropriation has been provided for spill prevention and response under Section 104 of the Clean Water Act. The funds will provide support for field assessment studies, follow-up on chemical substances for which little or no technical data is available, and demonstration projects or shakedown procedures for prototype spill response equipment.

The remaining $1,086,000 will provide for expansion of the Oil and Hazardous Materials Technical Assistance Data System (OHM-TADS) to include newly designated hazardous substances, priority pollution and uncontrolled hazardous waste site data fields; aerial surveillance and photo mapping for spill prevention inspections, contingency planning and emergency response; and maintenance of the Spill Prevention Control and Countermeasure (SPCC) management information system during 1980.

Highest priority will continue to be on protecting public health and the environment by emergency response to pollutant spills or discharges. A major EPA emphasis will be on controlling hazardous substance discharges from hazardous waste sites using emergency assistance actions. Because of the limitations of present authorities, the primary mechanism for taking emergency assistance will continue to be the use of available Section 311(k) funds. The number of emergency responses by the program to uncontrolled hazardous waste sites is expected to increase to 35 during 1980. These emergency responses are limited to discharges of hazardous substances from sites to navigable waters, which substantially threaten public health and welfare.

1980 Explanation of Change from Budget Estimate

The net increase of $1,647,500 results from several actions. An increase of $157,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation, a congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $19,300 and $11,000, respectively. A congressional increase of $1,250,000 was provided for hazardous substances accident assessment. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $32,500 to this activity.

A transfer of $9,500 to the solid waste media, uncontrolled hazardous waste sites was made to provide staff capability to discover, investigate, provide technical assistance and coordinate containment and cleanup with State and other Federal agencies.

Reprogrammings in order to support projections of costs based on 1979 expenditures resulted in transfers from water quality manpower planning and training ($204,900); from NEPA compliance-municipal waste facility construction ($14,400); from radiation program implementation ($19,600); from toxic substances management ($7,000); from standards and regulations ($11,200); from waste treatment operations and maintenance ($700); from drinking water public systems supervision program assistance ($40,400); from underground injection control program ($1,200); from ambient water quality monitoring ($55,100); to water quality ocean disposal permits ($30,000); to standards and regulations ($60,300); to ambient water quality monitoring ($16,900).

1981 Plan

The Agency requests a total $9,264,600 and 129 permanent workyears for this program, of which $4,970,000 is for the Salaries and Expenses appropriation and $4,294,600 is for the Abatement, Control and Compliance appropriation. With the exception of the one-time congressional add-on in 1980 of $1.25 million, the 1981 resource levels will increase slightly from the 1980 levels for both personnel and contract dollars. In 1981, the Technical Assistance Team (TAT) contract will increase by $200,000 to $3.4 million. The Environmental Emergency Response Team (ERT) will expand to 10 members in 1981, to allow an increase in their on-scene technical support for hazardous waste site emergencies.

The major program plans during 1981 will be to continue to develop, implement and maintain a national oil and hazardous substances spill prevention, response, removal and mitigation program, as well as the emergency assistance activities related to a limited number of uncontrolled hazardous waste sites pursuant to Section 311 affecting navigable waters. The program is projected to respond on-scene to approximately 260 spills which will require a Federal On-Scene Coordinator to direct Federal removal actions and to monitor 5,600 cleanup actions by the spiller. The increase in 1981 response actions is attributed to the continuing impact of the new hazardous substances regulations, as well as a slight increase in resources. The number of notifications received and screened is projected to reach 9,700 for the same reason. The number of spill prevention inspections following a major spill is expected to increase to more than 600 during 1981.

Other program objectives will be to provide program and policy guidance to other member agencies of the National Response Team (NRT) on issues and problems encountered in executing their mandate; to implement an effective hazardous substances response program; to deploy a mobile National Environmental Response Team (ERT); to provide liaison with the U.S. Coast Guard, the Federal Emergency Management Agency (FEMA) and other members of the National Response Team; as well as to continue to provide emergency response to pollutant dischargers from uncontrolled hazardous waste sites under Section 311.

STANDARDS AND REGULATIONS

1979 Accomplishments

In 1979, $4,490,400 was obligated under this program activity with major emphasis on Section 404 permit review, and the development of criteria documents for 65 classes of toxic pollutants. Included in this total, $1,670,600 was for extramural purposes in the dredge and fill program, including $500,000 for technology transfer and public participation; $285,000 for supplemental research and development on the identification of control and treatment alternatives for dredge and fill discharges; $115,000 for an interagency agreement with the Fish and Wildlife service; and the balance of $768,700 for a wide variety of dredge and fill support contracts such as assessment of wetlands and employment of expert consultants. Accomplishments in 1979 included:

Dredge and Fill Regulations

- Reviewed and commented on an estimated 1,450 controversial Section 404 permits.
- Proposed revised Section 404(b)(1) guidelines, to establish environmental criteria for the review of Section 404 permit applications.
- Proposed and promulgated Section 404(c) veto regulations which authorize the Administrator to prohibit the specification of any defined area as a disposal site.
- Developed and implemented strategy for delegating State permit programs; developed policies and procedures to assist Regions and States in the transfer of program operations; and evaluated existing States programs to identify those most suitable for Section 404 transfer.
- Proposed regulations for State (permit) program operation exemptions (Section 208(b)(4).
- Developed theEPA/Corps of Engineers Memorandum of Agreement required by Section 404(g) for minimizing duplication, paperwork and delays in the issuance of permits.

- Participated in the review and approval of plans for 15 congressionally authorized Federal projects to assure conformance with Section 404(b)(1) guidelines.

- Assisted the Water Resources Council in developing an integrated program for the management of floodplains and the protection of wetlands.

Criteria and Standards

- Published draft water quality criteria documents for 65 classes of toxic pollutants (129 pollutants), pursuant to the Natural Resources Defense Council (NRDC) Settlement Agreement, in support of Agency's toxic strategy.

- Performed over 300 acute and chronic bioassays by contractor for use in developing water quality criteria.

- Published guidance on factors to be considered in deleting substances from the Section 307(a) toxic pollutant list. Denied a petition to remove aromatic haloethers from the Section 307(a) list of toxic pollutants, and proposed denial of two additional petitions covering several other toxic pollutants.

- Added oil and grease to the Section 304(a)(4) list of conventional pollutants.

- Evaluated 38 State water quality standards. Federal standards promulgated for one State and proposed for four other States which had standards disapproved by the regional Administrator. Initiated a program to develop compatible water quality standards for all States along the Ohio River.

- Reviewed 60 Advanced Waste Treatment (AWT) projects to determine applicability to water quality standards.

- Promulgated Part 117 Regulations under the Section 311 hazardous substances program which establish reporting requirements for 299 hazardous substances. Proposed and promulgated regulations deleting two lime compounds from Part 116 designation and Part 117 reporting requirements under the Section 311.

- Developed Agency determination under Section 312(f)(3) on two California petitions to establish no-discharge zones.

- Published a notice of factors to be addressed by the States in their petitions to the Agency in establishing prohibition of vessel discharges into drinking water zones.

- Reviewed and made recommendations for changes to the Michigan Plan for a Feasibility Study of polychlorinated biphenyls (PCBs) and polybrominated biphenyls (PBBs) in the Pine and Saginaw Rivers.

1980 Program

The current 1980 allocation for this effort is $3,388,600 and 95 permanent workyears, of which $3,008,000 is for the Salaries and Expenses appropriation. In 1980, $380,600 is planned for the Abatement, Control and Compliance appropriation, including $230,400 for dredge and fill activities and the balance of $150,200 on such standards and criteria work as data support for priority pollutants and for technology transfer activities.

Under the dredge and fill program activity, the Agency will continue to increase direct assistance to a selected number of States in developing their own programs. An increased national focus is evident in the development of a national policy on Section 404 permit applications, establishment of a national data base for permits, and on efforts to coordinate permit reviews with other Federal agencies. Final water quality criteria will be published for 65 classes of toxic pollutants, along with publication of the proposed revision of water quality standards regulations, emphasizing these pollutants. Increased hazardous substance activity will be evident in the development of new criteria on carcinogenicity and other long term health effects and in the publication of liabilities for on-shore and off-shore hazardous substance discharges. In 1980, program plans include:

Dredge and Fill

- Review 1650 controversial Section 404 permit applications and exercise 404(c) veto authority in those cases where environmentally unacceptable discharges are proposed. Develop national policy for review and comment on general and individual permit applications and provide recommendations to higher management on controversial permits.

- Review controversial dredged or fill material discharge activities that occur without an approved permit, and establish a centralized capability to provide analytical field support for enforcement against unpermitted activities and for potential Section 404(c) actions.

- Promulgate Section 404 State program regulations (Part 122-4) and Section 404(b)(1) environmental guidelines, along with issuing of guidance.

- Develop strategies and policies for transfer of Section 404 programs to States and provide assistance to a selected number of State in developing their programs; review State program applications for assuming the Section 404 permit program and the Section 208(b)(4) program and recommend to the Administrator their continued approval or withdrawal.

- Coordinate Section 404 activities with other Federal agencies involved in the Section 404 program or related programs.

- Execute a Memorandum of Agreement with the Corps of Engineers regarding determination of the extent of U.S. waters and procedures for resolving disputes, and develop ancillary guidance.

- Review and provide comment on Environmental Impact Statements (EISs) associated with 18 congressionally authorized construction projects for their conformity with the Section 404(b)(1) guidelines.

Criteria and Standards

- Publish health and aquatic life, water quality criteria for 65 toxic pollutants mandated by the Clean Water Act and the Natural Resources Defense Council Settlement Agreement.

- Publish proposed revision of water quality standards regulation with emphasis on States addressing toxic pollutants. Publish regulatory mechanisms for these standards. Assist States in revision of State-adopted water quality standards.

- Promulgate Federal water quality standards for six States and propose Federal standards for an additional four.

- Review an estimated 57 AKT/AST projects for applicability of water quality standards.

- Propose a rulemaking to delete Freon from Section 307(a) list of toxic pollutants. Finalize response to two petitions for removing seven toxic pollutants from the Section 307(a) list and take initial action on additional petitions.

- Develop criteria for designating new hazardous substances under Section 311 on the basis of chronic effects such as carcinogenicity, mutagenicity and bioaccumulation meeting the criteria.

- Under Section 311, develop Part 117 reporting requirements for substances that are toxic to human health on the basis of potential risks.

- Propose regulations establishing limits of liability for dischargers of hazardous substances from onshore and offshore facilities; propose regulations establishing liability limits for small hazardous substances storage facilities.

- Coordinate with the Department of Transportation in amending Materials Transportation Bureau regulations to identify each designated hazardous substance and its reporting level.

- Propose regulations for the removal of oil and hazardous substances spills from the U.S. waters and shorelines.

- Monitor the Section 115 grant to the State of Michigan on the feasibility of removing polychorinated biphenyls and polybrominated biphenyls from the Pine and Saginaw Rivers.

- Review and make Agency determination on State petitions to establish no-discharge zones under the provisions of Section 312(f)(3), 312(f)(4)(A) and 312(f)(4)(B).

- Initiate National Estuarine Study.

1980 Explanation of Change from Buoget Estimate

The net increase of $1,321,600 results from several actions. An increase of $48,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,500. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $20,100 to this activity.

A transfer of $1,454,800 was made from water quality state programs regulations and guidelines to establish a new element to consolidate standards, criteria, and regulations functions.

A transfer of $156,700 was made to water quality dredge and fill to increase regional and state assistance for additional duties and to integrate permit proposals through field investigations.

1981 Plan

In 1981, $5,005,900 and 110 permanent workyears are requested for this activity, which is an increase of $1,617,300 and 15 workyears. Included in the request are $3,572,800 for the Salaries and Expenses appropriation and $1,433,100 for extramural purposes under the Abatement, Control and Compliance appropriation. The increase is entirely for dredge and fill activities. Of the extramural funds, $1,200,000 will be used for dredge and fill activities and the balance of $233,100 on trends analysis of parameters in water quality standards.

Continuing emphasis is placed on the dredge and fill program, with additional assistance to State programs, full review of State Section 404 program submissions, and assistance to regions is specifying disposal sites. Increasing attention is given to the technical implications of this program, such as energy development, waterways and agricultural ramifications. Continuing water quality standards assistance will be given to States and Regional offices in developing standards for toxic and non-toxic pollutants. The hazardous substances program will increasingly address substances whose spills contain immediately active agents. In 1981, the program will include:

Dredge and Fill

- Review 1820 major/controversial permits and exercise Section 404(c) authority in cases where unacceptable discharges are proposed. Refer major issues to Headquarters.

- Review major/controversial proposals and authorized projects that have not reached the permit stage, which could account for up to half of the total workload. Review major permits referred to headquarters (under Section 404(q) Memorandum of Agreement with the Corps of Engineers) for top management resolution.

- Provide technical assistance for cases in litigation and assistance to enforcement attorneys in actions against unpermitted discharges under Section 404(n) and cases involving litigation against EPA on Section 404 issues.

- Provide assistance to States in the development of a Section 404 program and provide full review of State Section 404 program submissions for compliance with delegation requirements of 404(g-1).

- Review EISs submitted for major Federal projects for Section 404(b)(1) guidelines compliance.

- Provide assistance in areawide specifications of disposal sites.

- Assess need for improvements in existing systems of Section 404 related environmental monitoring and work with State, Federal and local offices/agencies to improve effectiveness.

- Provide special technical analyses for dredged or fill discharge environmental problems which are region-specific and increase assistance on analyses of technical and policy issues involved in major permit review. Areas of particular concern include: energy development, agriculture, and waterway development.

Criteria and Standards

- Assist States in developing water quality standards for traditional non-toxic pollutants with limited coverage of toxics beyond technology-based guidelines. Develop policy guidance documents as required for both toxic and non-toxic pollutants.

- Promulgate State water quality standards when State standards are disapproved by the Regional Administrator.

- Provide assistance on water quality standards review.

- Manage Agency program for proposed and final additions or deletions to the Section 307(a) list of toxic pollutants and for the development of water quality criteria for toxic pollutants beyond the list of 65.

- Establish inter-program coordination measures with regard to toxic pollutants.

- Evaluate 57 advanced waste treatment proposed projects.

- Designate new hazardous substances under Part 116 on the basis of protection of human health from spills of acute or immediately acting agents (as opposed to chronic or long-term toxic effects).

OCEAN DISPOSAL PERMITS PROGRAM

1979 Accomplishments

The ocean disposal permits program obligated $1,476,300 in 1979. This funding included contract support for the development of impact statements for ocean disposal site designation. Baseline surveys were continued, under contract, on the three sites initiated in 1978. Environmental impact and site designation activities will carry over into future years. Dredged material site investigations were commenced. Of the 141 interim approved sites which must be surveyed and designated, 127 are for disposal of dredged materials, which comprises more than 90 percent of all materials dumped in the ocean.

The ocean program was also involved in offshore oil and gas lease sale EIS reviews, an interagency project that used the Flower Garden Banks in the Gulf of Mexico as a model for measuring the environmental effects of oil and gas drilling and production on sensitive environmental underwater areas on the outer continental shelf; and an effort with NOAA and DOI to determine the quality of open ocean waters and the state of marine technology against which conditions were established for permitting specific ocean-related industrial operations, such as ocean thermal energy conversion and deep seabed mining.

1980 Program

In 1980, the Agency has allocated a total of $1,343,200 and 28 permanent workyears to this program of which $1,112,700 is for the Salaries and Expenses appropriation and $230,500 is for extramural purposes under the Abatement, Control and Compliance appropriation. These extramural resources are to develop impact statements for ocean disposal site designations. The Agency expects to continue its 1980 ocean program, dealing only with the following highest priority activities:

- Conduct baseline surveys for site designations on 17 dumpsites and prepare 23 environmental analyses and dumpsite EIS's using contract support.

- Review and issue approximately 50 interim and special permits for completeness and compliance with ocean dumping criteria and regulations.

- Provide an EPA cursory review and coordination for an estimated 85 Corps of Engineers permit and Federal project proposals.

Because of the statutorily required termination of ocean dumping of harmful sewage sludge as well as the termination of all interim permits by the end of 1981, emphasis on overseeing the implementation of alternative disposal practices will continue and increase. The volume of ocean dumping under special permits will continue at present or slightly higher levels as a result of implementation of the Resource Conservation and Recovery Act, the elimination of marginal and unsatisfactory disposal landfills, and an increase in incineration-at-sea applications which will require site designations and monitoring. Probable changes in the International Ocean Dumping Convention will require changes in U.S. ocean dumping criteria within the next year, particularly in radioactive waste disposal and incineration at sea. The program is responsible for both international negotiation and changing criteria. Ocean disposal site designations utilizing a major 5-year contract will be increased and accelerated to meet statutory and litigation requirements.

The ocean program will concentrate on environmental effects of offshore oil and gas activities with emphasis on special NPDES permit conditions, environmental guidance, and technical assistance. Specifically, the Agency will participate in an interagency project (Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), Department of Interior (DOI), EPA, and State) to measure the environmental effects of oil and gas drilling and production on sensitive environmental underwater areas on the outer continental shelf. EPA will also participate in an interagency effort (DOE, NOAA, and EPA) to establish conditions for permitting specific ocean-related industrial operations such as ocean thermal energy conversion and deep seabed mining.

1980 Explanation of Change from Budget Estimate

The net increase of $111,700 results from several actions. An increase of $43,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $900 and $600, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $24,800 to this activity.

Reprogrammings in order to support projections of costs based on 1979 expenditures resulted in transfers from water quality spill prevention and response ($30,000); and from water quality manpower planning and training ($15,100).

1981 Plan

The Agency requests a total of $1,038,500 and 24 permanent workyears for this program, of which $879,300 is for the Salaries and Expenses appropriation and $159,200 is for the Abatement, Control and Compliance appropriation. This is a reduction of $304,700 and four permanent workyears below 1980 levels. The extramural dollars included in this request are to develop impact statements for ocean disposal site designations. The Agency will continue its ocean program at a reduced level, dealing with the following high priority activities:

- Respond to major crises by issuing emergency and research permits and waiver requests or responding to litigation or congressional oversight. Continued efforts to phase out harmful dumping (including issuance of interim permits).

- Compile data and prepare annual reports as required by statute for Congress and the International Ocean Dumping Convention.

- Manage the EIS contract to complete six EISs on ocean dumping sites and the designation of four dump sites. EPA has statutory responsibility for designating all ocean dumping sites, including those for dredged material. A total of 140 ocean disposal sites have been designated on an interim basis until January 1980.

- Review and issue 50 interim and special permit applications for ocean dumping, and screen and coordinate 85 Corps of Engineers permits and Federal project proposals.

- Coordinate open ocean-related programs within EPA and with outside Agencies including Outer Continential Shelf (OCS) oil and gas operations (DOI, DOC), ocean thermal energy conversion (DOE), and deep-sea mining (DOC, DOI).

- Analyze major open ocean related documents of other agencies (DOI, DOC, DOE) under responsibilities of National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

- EPA will achieve coordinated approaches to permit issuance for OCS activities in some key open ocean areas. Through its analyses of OCS EISs for oil/gas operations, some major environmental problems are anticipated which will effect changes in DOI's lease stipulation and DOC's marine sanctuary regulations.

The ocean disposal program in 1981 will continue to concentrate efforts on meeting the regulatory requirement to phase out all interim permits by the end of 1981 and the statutory requirement to end all dumping of harmful sewage sludge by the end of 1981. The contract-supported effort, being done jointly with the Corps of Engineers, to complete preparation of EISs on ocean dumping sites will continue. The Corps is the primary source of funding for field surveys and data analysis, and EPA is contributing to the development of the data base and funding EIS preparation. Ocean dumping under special permits is expected to attain a slightly higher level in 1981 as a result of implementation of the Resource Conservation and Recovery Act, the elimination of marginal and unsatisfactory disposal of harmful sewage sludge, and an increase in incineration-at-sea applications.

WATER QUALITY

Water Quality Monitoring and Analysis

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Water Quality Monitoring and Analysis:					
Salaries and Expenses..	$7,677	$8,042	$7,540	$8,209	+$669
Abatement, Control and Compliance.....	3,532	2,520	2,471	2,436	-35
Grand Total.....	11,209	8,562	10,011	10,645	+634
Permanent Positions					
Water Quality Monitoring and Analysis.....	192	175	188	191	+3
Full-time Equivalency					
Water Quality Monitoring and Analysis.....	257	244	243	241	-2

Budget Request

An appropriation of $10,644,600 and 191 permanent workyears is requested for 1981, including $8,208,700 for the Salaries and Expenses appropriation and $2,435,900 for extramural purposes under the Abatement, Control and Compliance appropriation. This represents an increase of $633,100. Included in the extramural funds is $1,985,900 for contracts and $450,000 for interagency agreements. Also included under Salaries and Expenses is $1,250,000 in laboratory equipment to upgrade regional laboratory toxic analysis capabilities.

Program Description

This program's responsibilities include: toxic pollutant data collection and analysis; toxic pollutant management; publicly-owned treatment work (POTWs) toxic pollutant source analysis; wasteload allocation guidance and review; national monitoring network management; data management; and program analyses to assess environmental trends and improve program management. Specific activities pursued by this program are described below.

In support of the Agency's toxic pollutant strategy, this program coordinates its analytic activities with the Effluent Standards and Guidelines Program. In response to the requirements stipulated under the Clean Water Act of 1977 and the Natural Resources Defense Council (NRDC) Settlement Agreement, this program provides: pollutant control strategies based on assessments of environmental distribution, exposure/risk analysis and fate studies for controlling the 65 classes of toxic pollutants stipulated in the Clean Water Act and Natural Resources Defense Council (NRDC) Settlement Agreement; area-by-area regulatory strategies and guidance to the States for geographic areas where best available technology (BAT) may not be adequate to control pollution, including identification of toxic pollutant "hot spots"; industrial/environmental

assessments for the 21 primary industrial categories to assist in the development and defense of BAT regulations; assessments of the sources of toxic pollutants entering publicly owned treatment works (POTW) and recommendations for appropriate regulatory strategies; implementation of the State Basic Water Monitoring Program to provide increased intensive surveys, biological monitoring, and toxic pollutant monitoring, and resources devoted to field sampling and analysis to detect and measure the 129 priority pollutants. Additional activities included in this program include: implementation of a water monitoring strategy to collect and analyze data to support EPA management; operation of EPA's water quality data systems for management of toxic pollutant and other data, including standardization of storage protocols and quality assurance; and ongoing evaluations of ambient water quality trends to measure the success of EPA control strategies. It also includes management overhead for the regional Surveillance and Analysis Divisions which are responsible for monitoring in all media (water, air, toxics, enforcement, and pesticides) and for coordinating surveillance and analysis among States and other Federal agencies.

1979 Accomplishments

In 1979, $11,208,500 was allocated to water quality monitoring and analysis. Included in this total is $3,631,900 for extramural funds. Of these funds, $2,289,100 was used to determine toxics contributions from publicly owned treatment works (POTW) and for exposure/risk assessments; $1,087,900 was for interagency agreements including the U.S. Geological Survey and the Fish and Wildlife Service for provision of sampling and analysis support; and $154,900 for grants to researchers, State, and interstate agencies to collect and analyze data. Programs included: (1) the management of the nationwide State Basic Water Monitoring Program emphasizing toxic pollutants and intensive surveys, and (2) EPA and contractor collection and analysis of toxic pollutant data and information to meet the requirements of the Clean Water Act and the NRDC Settlement Agreement. Accomplishments included:

- Assessment of environmental exposure/risk and geographic distribution of toxic pollutants to set revised Best Available Technology (BAT) regulations and pretreatment and New Source Performance Standards, water quality criteria, and to add to/delete from the 307(a)(1) list of toxic substances.

- Investigated 15 potential toxic "hot spots" to determine actual levels of toxic pollutant contamination in geographic areas where BAT regulations will not satisfy toxic criteria. Developed control options for 10 "not spot" areas.

- Technical review of 60 proposals for advanced waste treatment (AWT) projects, of which the Administrator acted on 26.

- Implemented the Basic Water Monitoring Program, including initial designation of a uniform monitoring network of 1,000 State-operated stations, for State collection of ambient, effluent, toxics, and biological data.

- Continued evaluation of quality assurance procedures in selected State and contractor water laboratories for accurate detection and measurement of toxic and other pollutants in ambient water and effluents.

- Operated water quality and toxic pollutant data management systems to provide access and analysis of available information on toxics and other pollutants.

- Analyzed and published reports of water pollution improvement in 6 geographic areas to describe and document programs which are successful and may be adaptable to other areas. Developed Environmental Profiles for water quality in five EPA regions.

- Continued an interagency agreement with U.S. Geological Survey to collect and analyze water samples for use in assessing problem areas and water quality trends.

- Continued an interagency agreement with the National Fish and Wildlife Service to analyze fish tissue for the presence of toxic substances. This will help assess probable exposure and risk determine geographic distribution of toxic pollutants.

1980 Program

In 1980, the Agency has allocated a total of $10,011,500 to water quality monitoring and analysis, including $7,540,200 for Salaries and Expenses and $2,471,300 for Abatement, Control and Compliance. The program will use approximately $2,021,300 for contracts and interagency agreements to determine geographic distributions and to assess exposure/risk of toxic pollutant contributions to publicly owned treatment works (POTW); and $450,000 for interagency agreements to perform biological and chemical monitoring.

Projected accomplishments for 1980 include determination of geographic distributions, mass balances, and exposure/risk analyses for selected toxic substances as well as the implementation of a water monitoring stategy. The planned outputs are:

- A detailed assessment of the sources of toxic pollutants to publicly owned treatment works (POTW), with resultant analysis of regulatory strategies, including controls under TSCA and RCRA.

- Assess environmental exposure/risk and geographic distributions of additional toxic pollutants for setting revised best available technology regulations, pretreatment and new source performance standards, water quality standards, and Section 307(a) actions.

- Identify and document toxics "hot spots" and provide technical evaluation and definition of control options for toxic pollutants including controls of specific pollutants, certain categories of industries, and/or certain geographic areas where advanced waste treatment or wasteload allocations may be necessary to control water pollution. Expect development of additional 15 "hot spot" action recommendations.

- Technical review of an estimated 57 proposals for AWT projects.

- Implement a water monitoring strategy to collect and analyze water quality information for use in policy decisions and measuring effectiveness of programs.

- Initiate a review and possible redesign of water monitoring networks to improve statistical coverage and utility of data for national analyses.

- Manage the State Basic Water Monitoring Program, which includes toxic pollutant and biological monitoring, and intensive surveys.

- Implement a data system for storage and analysis of toxic pollutant data. Continue and improve data systems to provide pollution control agencies, at all levels of government, and widespread access to toxic and other pollutant data.

- Evaluate quality assurance procedures in selected State and contractor laboratories to provide accurate detection and measurement of toxic and other pollutants in ambient waters and effluents.

60-531 O - 80 - 38

- Perform limited biological sampling and data interpretation to screen for presence of toxics, to pinpoint needs for chemical monitoring, and to evaluate effects of chemical pollutants.

- Analyze and publish water pollution improvements to describe and document successful programs which may be adaptable to use elsewhere.

- Continue an interagency agreement with the National Fish and Wildlife Service and the U.S. Geological Survey to collect and analyze water samples and fish tissue. This will help determine geographic distributions and exposure/risk of toxic pollutants, and measure trends in overall water quality.

- Publish State water quality assessment reports as required by Section 305(b) of the Act.

1980 Explanation of Change from Budget Estimate

The net increase of $1,449,200 results from several actions. An increase of $262,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A Congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $368,100 and $652,900, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $936,300 to this activity.

Reprogrammings were made to air quality management implementation ($25,000), to water quality state program regulations and guidelines ($38,100); and to water quality permit issuance ($15,100) for actual staff assignments and projections for travel, training, overtime and grade and steps increases. A reprogramming was made of $14,500 to water quality standards and regulations to support the position identified for the Clean Lakes program. A reprogramming was made of $55,100 to water quality environmental emergency response and prevention to support positions as well as to reflect adequate funding for actual staff assignments and current projections.

A reprogramming was made of $7,300 to interdisciplinary water quality - EIS review to support the permanent part-time hiring program.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers from water quality regulations, guidelines and policies/resource conservation and recovery ($8,500); from water quality NEPA compliance municipal waste facility construction ($34,300); from water quality environmental emergency response and prevention ($27,600); and from drinking water public systems supervision program assistance ($114,400).

A reprogramming was made of $1,250,000 from drinking water public systems supervision program assistance for regional lab equipment to be used for monitoring and analysis.

1981 Plan

In 1981, the Agency requests a total of $10,644,600 and 191 permanent workyears for this program, including $8,208,700 for the Salaries and Expenses appropriation and $2,435,900 for the Abatement, Control and Compliance appropriaton. This reflects an increase of $633,100. Included in the total request for extramural funds is approximately $1,215,000 for contracts and interagency agreements to determine geographic distributions and to assess exposure/risk of toxic pollutants; and $1,220,900 for contracts to assess toxic pollutant contributions to publicly owned

treatment works (POTW). Major accomplishments planned for 1981 include continued efforts to manage toxic pollutants, and continued implementation of toxic water monitoring strategy. The planned outputs are:

- Expand the assessment of sources of toxic pollutants to publicly owned treatment works (POTWs) to include an additional 2 urban sites and assess the effectiveness of pretreatment.

- Collect and analyze effluent samples and environmental exposure/risk and fate data to identify and recommend which toxic pollutants require further regulatory controls or should be added or deleted from the Section 307(a) list.

- Identify and rank 50 toxic "hot spots", and develop control strategies for 15 geographic areas.

- Provide detailed technical evaluation for use in water quality based decisions, including review of 87 AWT proposals and proposed revisions to water quality standards.

- Collect/analyze 1,500 toxic pollutant samples to determine geographic coverage and ambient concentrations of toxic pollutants in the Nation's waterways. 25 pollutants will be screened which will result in action recommendations for the control of 10 pollutants.

- Continued development and implementation of a national water monitoring strategy to collect and analyze data needed for policy decisions and program evaluation, including limited biological monitoring.

- Provide policy and technical guidance on the use of wasteload allocations in water quality standards review and AWT review studies.

- Operate a clearinghouse of water and other related monitoring programs to maintain an inventory of what data is being collected, and to help screen new monitoring programs to ensure that they are integrated with efforts of other offices in EPA. Provide computer systems support to approximately 700 water quality data users.

- Guide the implementation of quality assurance programs for collection and analysis for Headquarters, Regions and States.

- Completion of Environmental Profiles for all EPA regions, detailing environmental progress and remaining environmental concerns.

WATER QUALITY

Municipal Source Control

APPROPRIATION	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase+ Decrease- 1981 vs 1980
		(dollars in thousands)			
Construction Grants Program Management					
Municipal Waste Treatment Facility Construction:					
Salaries and Expenses	$21,030	$24,486	$22,575	$22,692	+$117
Abatement, Control and Compliance	7,910	...	5,658	4,940	-718
NEPA Compliance - Municipal Waste Facility Construction:					
Salaries and Expenses	2,741	2,900	2,678	2,682	+4
Abatement, Control and Compliance	7,076	6,600	6,246	6,600	+354
Corps of Engineers:					
Salaries and Expenses	...	...	...	...	...
Abatement, Control and Compliance	15,986	22,800	22,338	21,955	-383
Waste Treatment Operation and Maintenance:					
Salaries and Expenses	1,356	1,426	960	1,040	+80
Abatement, Control and Compliance	534	...	88	542	+454
Subtotal, Construction Grants Program Management:					
Salaries and Expenses	25,127	28,812	26,213	26,414	+201
Abatement, Control and Compliance	31,506	29,400	34,330	34,037	-293
Waste Treatment Training and Technical Assistance					
Manpower Planning & Training - Water Quality:					
Salaries and Expenses	1,272	4,169	1,401	1,345	-56
Abatement, Control and Compliance	2,267	...	2,448	2,692	+244
Total:					
Salaries and Expenses	26,399	32,981	27,614	27,759	+145
Abatement, Control and Compliance	33,773	29,400	36,778	36,729	-49
Grand Total	60,172	62,381	64,392	64,488	+96

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase-Decrease-1981 vs 1980
			(Dollars in thousands)		
Permanent Positions					
Municipal Waste Treatment Facility Construction	785	771	774	766	-8
NEPA Compliance-Municipal Waste Treatment Facility Construction	87	98	93	95	-2
Corps of Engineers-Municipal Waste Treatment Facility Construction	...	...	...	...	...
Operations & Maintenance	36	42	28	28	...
Subtotal	906	913	895	889	-6
Manpower Planning & Training-Water Quality	33	18	30	26	-4
Total	939	931	925	915	-10
Full-time Equivalency					
Municipal Waste Treatment Facility Construction	853	912	907	894	-13
NEPA Compliance-Municipal Waste Facility Construction	100	95	93	95	+2
Corps of Engineers	...	...	...	...	...
Operations & Maintenance	43	47	29	29	...
Subtotal	996	1,054	1,029	1,018	-11
Manpower Planning and Training-Water Quality	42	30	43	40	-3
Total	1,038	1,084	1,072	1,058	-14

Budget Request

The Agency requests a total of $64,488,000 and 915 permanent workyears for 1981, an increase of $96,200 from 1980. Included in this total is $27,759,100 for Salaries and Expenses and $36,728,900 for Abatement, Control and Compliance, with an increase of $145,400 and a decrease of $49,200, respectively.

Program Description

The municipal source control subactivity is composed of two program areas. The first, construction grants program management, derives its legislative authority from Titles II & III of the Clean Water Act (CWA). For budgetary purposes, the program is divided into four principal program elements: (a) municipal waste treatment facility construction, (b) NEPA compliance for construction grants, (c) the Corps of Engineers

agreements for management of the construction phase, and (d) operations and maintenance. The second program area, the training and technical assistance program, derives its principal authority from Title I, Sections 104 and 109 through 112, and portions of Title II and Title IV of the Clean Water Act (CWA). The funding provided under this subactivity covers only the direct operating costs. Omitted are the municipal construction grant funds (including State management assistance grants), which are included in a separate appropriation account (Construction Grants) and the academic training grant funds provided under the Grants Assistance program subactivity.

Most of the construction grants management activities, from facility planning to post-construction oversight, take place in the EPA regional offices. The direct training and operational technology activities of the municipal operations and training program are located at the National Training and Operational Technology Center in Cincinnati, Ohio. The remainder of this subactivity - program policy, administrative and management oversight, and needs estimates - resides in headquarters, primarily in the Office of Water and Waste Management.

The first program area -- the administration of the grants program for construction of municipal waste water treatment facilities -- will involve 889 permanent workyears in 1981 of which 791 are in the regional offices and 98 are in headquarters, along with substantial contractual and interagency assistance. The principal goal underlying the grants program is to eliminate the municipal discharge of untreated or inadequately treated pollutants and thereby help restore or maintain the quality of the Nation's waters and protect the health and well-being of the people. The major operational objectives guiding EPA's program administration are to achieve the most cost-effective, environmentally sound, and timely abatement and municipal waste water pollution control through proper planning, design, and construction of treatment works; to protect the fiscal and technical integrity of the program through sound management and close project oversight; and to encourage maximum State participation in program administration through both technical assistance to improve State program management and delegation of program management responsibilities. Areas of continued attention include more careful review of projects requiring waste treatment more stringent than secondary, improved environmental review, more face-to-face contact with grantees, an improved public participation program, encouragement of alternatives to conventional treatment (including land treatment), closer oversight and review of cost effectiveness methodology, better State project planning, and other activities prompted by new environmental initiatives and recent legislative amendments. EPA will direct its construction grants funds to those municipal projects required to comply with the enforceable environmental goals of the Act. In addition, EPA will continue to implement the Administration 's directives on water conservation and the urban and rural initiatives. A specific description of activities included in this first program area are as follows:

- Municipal Waste Treatment Facility Construction. This subactivity includes most of the day-to-day in house management activity associated with the construction grants program both in Headquarters and EPA Regional Offices.

- NEPA Compliance. This involves the review of facility plans and the development of environmental impact statements to assure that municipal facilities are planned and constructed in conformance with the National Environmental Policy Act (NEPA).

- Corps of Engineers. This activity covers a series of Step 3 construction management activities provided to EPA by the Corps of Engineers to assure the technical and fiscal integrity of projects under construction.

- Operation and Maintenance. This involves continuous assessment of public waste water treatment plant operational efficiencies which is reported annually to Congress in accordance with Section 210 of the Clean Water Act. The program supports State, local and private sector efforts to improve plant operations and maintenance through the development of guidance materials, identification of planning, design research and training needs, and a series of public awareness activities.

The second program area - training and technical assistance - involves 26 permanent positions. Activities include: (a) program support (courses, materials, etc.) for training and certification of municipal waste water treatment facility operators and related personnel to improve plant efficiency in existing plants and to assure efficient and reliable operation of new federally-funded plants, and (b) training of EPA, State and private sector agency personnel in the technology of abatement and control of water pollution through short-term training courses, development of audio-visual training aids, and delivery of training resources for the purpose of developing effective State and local water pollution control training programs.

CONSTRUCTION GRANTS PROGRAM MANAGEMENT

1979 Accomplishments

The construction grants program management obligations for 1979 totalled $56,633,100, of which $28,127,300 was for salaries and expenses and $31,505,800 for extramural activities. EPA awarded 2,599 grants totalling $4,256 million. Approximately 11,881 projects were in the preconstruction or construction stages by year end, including 5,388 facility planning projects, 1,658 design projects, 349 combined design and construction projects, and 4,509 projects under construction. The following table summarizes the program for 1979:

Item	1979 Number b/	1979 Amount (dollars in millions)
Total Obligations - Gross a/		$4,256
Total Outlays		$3,756
Awards Processed:		
Step 1 Awards	982	
Step 2 Awards	572	
Step 3 Awards	799	
Step 2+3 Awards	246	
Active Projects	11,881	
Step 3 Completions (including Step 2 and 3)	459	
New EISs Initiated	45	

a/ This represents gross obligations during the year. Net obligations, reflecting recoveries from past awards, totalled $3,879 million.

b/ Numbers in this table are updated from those in the President's Budget Appendix.

The $4,256 million in gross 1979 obligations represents an increase of $856 million over the level indicated in EPA's budget request to Congress last year. This increased

level of obligation activity occurred largely because Congress did not extend the allotment period from two years to three years as requested by EPA, causing several States to accelerate projects to avoid the loss of funds to reallotment.

In 1979 EPA continued to implement several new initiatives required by the Clean Water Act Amendments of 1977, following the publication of final regulations in September 1978. Initiatives included (a) the delegation of major management responsibilities to the States, (b) new emphasis for the use of innovative and alternative technology, (c) restructuring State priority list planning requirements, (d) changes in secondary treatment requirements for ocean outfalls, (e) improvements in cost effectiveness procedures and guidelines, and (f) user charge changes.

Significant progress was made in transferring major management responsibilities for the program to the States under Section 205(g) of the Act. By the end of fiscal year 1979, 30 delegation agreements have been signed of which 27 were signed during fiscal 1979 alone. Progress in this area demonstrated that both EPA and the States are committed to transferring major management responsibility to the States as expeditiously as possible.

EPA also completed the transfer of several construction related management activities to the Corps of Engineers in accordance with an agreement signed by EPA and the Corps in 1978. The Corps agreement provides for Corps services in three areas to assure the fiscal and technical integrity of construction projects: (a) on-site presence during construction for all projects greater than $50 million, (b) performance of construction engineering functions (such as inspections, review of change orders, outlay management, construction close-out, and management oversight) on all projects which are in the construction stage, and (c) review of plans and specifications to assure that plans are biodable and constructable before contract awards are let.

In 1979, EPA also implemented the congressional mandate requiring the Administrator to personally review and approve all projects involving treatment levels greater than secondary where the incremental cost of the advanced component was more than $1 million. During the year 57 advanced treatment projects were forwarded to EPA headquarters for review, of which 26 were acted upon by the Administrator. In addition, EPA regional offices evaluated all AWT/AST projects involving lesser sums of money to assure that the advanced treatment components were fully justified.

The operations and maintenance (O&M) program concentrated on mobilizing a coordinated, broad base approach to improved performance. The program proposed new program guidance for inspection, technical assistance and O&M/enforcement cooperation. The program developed three technical manuals on plant operations and conducted two national symposia on O&M. A program was developed and implemented for increasing the public awareness and support for improved O&M. On-site demonstration provided technical assistance to States and the private sector.

1980 Program

In 1980, the Agency has allocated a total of $60,542,500 to this program and 895 permanent workyears, of which $26,212,800 is for the Salaries and Expenses appropriation and $34,329,700 is for extramural purposes under the Abatement, Control and Compliance appropriation. EPA expects to award approximately 3,511 grants totalling $4.8 billion. Approximately 11,725 projects will be in the preconstruction or construction stages by year end, including over 4,445 facility planning projects, 2,055 design projects, 625 combined design/construction projects and 4,600 projects under construction. The following table summarizes the program planned for 1980:

Item	1980 Number	1980 [b/] Amount (dollars in millions)
Obligations - Gross [a/]		$4,800
Total Outlays		$3,900
Awards Processed		
Step 1 Awards	807	
Step 2 Awards	1,193	
Step 3 Awards	1,156	
Step 2+3 Awards	355	
Step 3 Completions (including Step 2 and 3)	1,008	
Active Projects (all steps)	11,725	
New EISs Initiated	51	

[a/] This represents gross obligations during the year. Net obligations, reflecting recoveries from past awards, are projected to total $4.5 billion.

[b/] Numbers in this table are updated from the President's Budget Appendix.

Obligation levels are expected to increase by $544 million in 1980 over 1979 as the increased level of total resources brought to bear on the management of the program by EPA, the States, and the Corps begins to be felt. The levels of obligations, outlays, new awards, and completions are expected to increase as these additional personnel resources move projects through the planning, design, and construction process more expeditiously than possible previously.

The number of States with delegated programs is expected to increase from 30 to 42 with several States assuming complete control of the program by the end of the year. EPA resources will continue to be devoted to the training of State staffs and the phased transition of major management responsibility to the States as they demonstrate the interest and capability to assume delegable activities.

Significant attention will be directed toward implementing the National Municipal Policy and Strategy, which was published in November 1979. This strategy is intended to integrate program activities of the grants, enforcement, and NPDES permit compliance programs, and to better coordinate and reinforce planning and scheduling of municipal projects to meet the goals of the Act. During 1980 attention will be directed toward developing compatible information systems, integrating municipal permit and grant schedules, and increasing enforcement activity related to high priority municipal projects. The long run objective is to improve the degree of compliance of the municipal sector which currently lags behind industry significantly in meeting the goals of the Act.

In a related effort, EPA implemented the construction grants program management strategy early in the fiscal year. This strategy is directed more toward the internal management of the program and attempts to tie together program planning, resource utilization, and program performance activities to enhance program performance and program quality. Regional office plans are analyzed for conformance with annual guidance and, following the approval of plans, are held accountable for meeting approved commitment levels. The program management strategy is expected to enhance the overall management of the program and improve the quality of obligation and outlay estimates. It will provide a basis for tracking delegations to the States, reducing the preconstruction

lag after Step 3 award, cutting project development and application processing times, completing projects in a more timely manner, improving the quality of our facility plans, and enhancing State project priority lists as a management tool.

The Conference Report to the 1980 Appropriations Act increased the dollar level at which the Administrator must personally review projects involving treatment levels more stringent than secondary. Under this most recent provision the Administrator will review grant awards to all projects with incremental costs above secondary of more than $3 million (previously the cut off was $1 million). In addition, EPA regional offices will continue to review rigorously all projects requiring treatment above secondary to assure that State-imposed limitations are properly applied and effective. During 1980 EPA expects to review approximately 57 such projects of which approximately 27 will be reviewed directly by the Administrator in addition to the 31 projects carried over from 1979.

EPA is devoting significant attention to the development of a long-term strategy for the construction grants program which will result in recommendations to Congress in the near future. The strategy will result in recommendations related to the allotment formula, eligibilities, the use of incentive funds, etc., and will attempt to reconcile the problem of huge municipal treatment needs and scarce Federal dollars.

In 1980, EPA also plans to initiate 51 EISs on municipal projects, review and approve 240 innovative/alternative projects, and review and process 70 applications for waiver of secondary treatment requirements for communities with ocean outfalls. The operation and maintenance program with reduced resources will put its emphasis on implementation of an overall program management strategy by developing the Municipal Management System on a region-by-region basis.

1980 Explanation of Budget Estimate -

Municipal Waste Treatment Facility Construction - The net increase of $3,746,700 results from several actions. An increase of $876,000 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses and $1 million to ADP resulted in a decrease of $64,900, $80,000 and $2,200, respectively. A Congressional increase was made to the ocean outfall program of $1,000,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $1,156,500 to this activity. Reprogrammings were made between media to support projected costs based on 1979 actual expenditures from water quality waste treatment operations and maintenance ($37,000); from water quality manpower planning and training ($141,600); from drinking water underground injection control program ($172,000)); from drinking water public systems supervision program assistance ($211,900); from water quality state programs regulations and guidelines ($12,600); from water quality standards and regulations ($14,300); from air quality management implementation ($9,000); from solid waste hazardous waste management regulatory strategy implementation ($19,500); from solid waste management program implementation ($18,700); from noise regional program implementation ($5,300); from pesticide use management ($88,600); and from water quality municipal waste facility construction ($18,900). A transfer of ($4,000) was made to water quality state programs regulations and guidelines to support actual staff assignments and projections for travel. A transfer of ($115,900) was made from water quality waste treatment operations and maintenance.

NEPA Compliance - Municipal Waste Facility Construction -

The net increase of $575,700 results from several actions. An increase of $95,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency

travel costs and supplies and expenses resulted in a decrease of $9,300 and $42,800, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $124,200 to this activity. Reprogrammings were made between media to support projected costs based on 1979 actual expenditures to water quality state programs regulations and guidelines ($118,600); to water quality NEPA compliance/EIS preparation ($7,000); to ambient water quality monitoring ($49,000); to water quality standards and regulations ($86,000); to water quality environmental emergency response and prevention($4,700); from NEPA compliance/EIS preparation ($9,400); to pesticide use management ($48,000); to radiation program implementation ($7,200); to air - EIS review ($20,900); to (WQ) - EIS reviews ($5,300), solid waste technical assistance delivery ($4,900); to solic waste hazardous waste management regulatory implementation ($7,000); and to municipal waste facility construction ($18,900). A transfer was made to water quality enforcement ($69,700); to water quality permit issuance ($13,100); to drinking water public systems supervision program assistance ($43,800); to air EIS review ($5,800) to support actual staff assignments and projects for travel training overtime and grade and step increases. A transfer was made to water quality EIS review ($1,400) to support allocation of additional OPFTE ceiling for permanent part time hiring.

Corps of Engineers -

The net decrease of $462,300 results from an overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears.

Manpower Planning and Training -

The net decrease of $378,300 results from several actions. An increase of $30,000 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $4,900 and $1,200, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $1,800 to this activity.

Reprogrammings were made between media to support projected costs based on 1979 actual expenditures to ambient air quality monitoring ($7,900); to ambient water quality monitoring ($4,000); from drinking water public systems supervision program assistance ($2,800); from drinking water underground injection control program ($4,200); transfer to water quality municipal waste treatment facility construction ($152,900); to water quality environmental emergency response and prevention ($700); and to manpower planning and training ($241,900).

1981 Plan

The Agency requests a total of $60,451,200 for this program and 889 permanent workyears, of which $26,414,200 is for the Salaries and Expenses appropriation and $34,037,000 for the Abatement, Control and Compliance appropriation. Approximately 2,550 new awards will be made totaling $4.5 billion. This represents a decrease of 850 in the number of awards and a $300 million reduction in the dollar value of obligations. The decrease in obligations results primarily from the lower level of the funds available for obligation in 1981, which reduces obligation levels in several States which are capable of obligating significantly more than their share of the $3.7 billion appropriation. The following table compares the planned FY 1981 program with 1979 and 1980 program levels:

	1979 Actual	1980 Estimate Planned	1981 Estimate Requested
		(dollars in millions)	
Total Gross Obligations	$4,256	$4,800	$4,500
Total Outlays	$3,756	$3,900	$3,950
Step 1 Awards	982	807	400
Step 2 Awards	872	1,193	925
Step 2+3 Awards	246	355	275
Step 3 Awards	799	1,156	950
Active Projects (all steps)	11,881	11,725	11,000
Construction Completions (including Step 2 and 3)	459	1,006	1,200
New EISs Initiated	45	51	51

Note: Numbers in this table are updated from output numbers in the President's Budget Appendix.

1981 will see a continued shift of the management of the program from EPA to the States. Whereas approximately 25 percent of the direct program workload will be administered by the States at the end of 1980, EPA estimates that approximately 40 percent of the direct program activities will be fully administered by the States at the end of 1981. Further support will be provided by the Corps, which is expected to handle 25 percent of the direct workload in 1980 and 20 percent in 1981. As the program delegation increases, EPA will increasingly move into delegation management and monitoring, and out of direct program operations.

The construction grants program management strategy will be further enhanced with greater emphasis being placed on project quality, project completion times, management oversight of State and Corps activities, and full-scale implementation of the coordinated approach to grant making, permitting, and enforcement as related to municipal facilities. By early 1981 a new management agreement will have been negotiated with the Corps of Engineers which will extend the current agreement and provide for a continuation of Corps support for the Step 3 construction program.

Other major activities to be accomplished in 1981 include the completion of the 1980 municipal needs survey, the review of 57 AWT and AST projects by the Administrator, the review/approval of 400 innovative/alternative technology projects, an increase of 67 percent over 1980 levels, and a significantly increased degree of coordination with the industrial pretreatment program to assure a coordinated approach to the treatment of all wastewaters entering municipal waste streams whether generated domestically or by industry.

In 1981, EPA plans to complete processing the majority of remaining applications requesting a waiver of secondary treatment under Section 301(h) of the Act, which permits such waivers for certain communities which dispose of municipal waste in ocean areas. EPA also expects to significantly increase the number of innovative/alternative projects funded to a total of approximately 400 nationally, resulting in more cost-effective, environmentally sound, and energy efficient treatment systems in an increasing number of communities. EPA will also initiate 51 EIS's, complete work on municipal needs for treatment facilities, and send the Needs Survey Report to Congress in February 1981.

The operations and maintenance (O&M) program will initiate a trial extramural effort to provide on-site technical assistance and training to municipal treatment plants with major O&M problems in order to demonstrate the most cost-effective and efficient methods for resolving these problems. Operationally oriented consultants from the private sector would provide the technical assistance either in a team or on a one-to-one basis depending on the municipalities' particular problems.

WASTE TREATMENT TRAINING & TECHNICAL ASSISTANCE

1979 Accomplishments

The manpower and training program obligations for 1979 were $3,539,000. Training activities continued to encourage and support the development of water pollution control manpower planning and training capabilities at the State and local levels. Manpower planning and training activities in 1979 concentrated on:

- Development of training programs, curricula, and courses to support construction grants and municipal operations program objectives (i.e., Section 205(g)).

- Support to the National Operator Training Coordinating Committee and State Operator Training Coordination Committees in the implementation of the Association of Boards of Certification "Brown Book" which provides a comprehensive plan for development and coordination of operator training at the State and local level.

- Support of interagency agreement with the Department of Labor (DOL), to provide operator training assistance to the water industry in rural areas.

- Support to the Association of Boards of Certification for the continuing development of State certification examinations.

- Development, demonstration, and distribution of course packages and materials in support of State and local training programs.

- Continued development of the Instructional Resource Center in Cincinnati, Ohio, to provide training course packages, equipment and instructional material to the private and public sectors.

- Initiation of a feasibility study and planning for training centers located in centralized areas to provide training of a specialized technical nature.

1980 Program

In 1980, the Agency has allocated a total of $3,849,300 and 30 permanent workyears to this program of which $1,400,900 is for Salaries and Expenses and $2,448,400 is for extramural purposes under the Abatement, Control and Compliance appropriation.

With the exception of 8 permanent workyears in the regional offices to perform liaison and coordination between State and local training programs, the total training program has been consolidated at the National Training and Operational Technology Center (NTOTC) in Cincinnati, Ohio.

With these resources the training center will be engaged in:

- Developing, demonstrating and delivering training courses supporting State agency delegations under Section 205(g).

- Providing POTW operator training program support (courses, materials, consultative assistance) and developing operational technology for wastewater treatment facilities.

- Conducting instructor training and other direct technical training.

- Developing and expanding the operations of the National Instructional Resources Center at NTOTC, Cincinnati, Ohio.

- Continuing area training center study and placement of a pilot and three area training centers.

1980 Explanation of Changes from Budget Estimate -

The net decrease of $319,400 results from several actions. An increase of $52,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,900. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $15,800 to this activity. Reprogrammings were made between media to support projected costs based on 1979 actual expenditures to water quality municipal waste treatment facility construction ($141,600); to ambient water quality monitoring ($8,500); to water quality environmental emergency response and prevention ($204,900); to water quality NEPA compliance/EIS preparation ($2,800); to management and support ($179,400); to water quality ocean disposal permits ($15,100); to drinking water public systems supervision program assistance ($44,100); and from water quality waste treatment operations and maintenance ($241,900).

1981 Plan

The Agency requests a total of $4,036,800 and 26 permanent workyears for this program, of which $1,344,900 is for the Salaries and Expenses appropriation and $2,691,900 is for the Abatement, Control and Compliance appropriation. This represents a decrease of four permanent workyears.

In 1981, a greater emphasis will be placed on training to assist States to assume State construction grants delegated responsibilities under the Clean Water Act and to develop self-sufficiency in operation and maintenance (O&M) training. There will be a continuing support of publicly owned treatment works (POTW) operator training; instructor training to State, local and private sectors; specialized technical training assistance and continued operation of the Instructional Resources Center.

WATER QUALITY

Permits Issuance

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Salaries and Expenses..	$6,247	$6,653	$6,850	$7,949	+$1,099
Abatement, Control and Compliance.....	1,349	2,750	3,036	5,927	+2,891
Total.....	7,596	9,403	9,886	13,876	+3,990
Permanent Positions.....	204	237	243	243	...
Full-time Equivalency....	237	273	270	295	+25

Budget Request

The Agency requests a total of $13,875,400 for NPDES permits issuance in 1981, an increase of $3,989,700 from 1980. Included in this total is $7,948,800 for Salaries and Expenses and $5,926,600 for Abatement, Control and Compliance, with an increase over 1980 of $1,098,900 and $2,890,800 respectively. The 243 permanent workyears requested reflects no increase from 1980 levels.

Program Description

The National Pollutant Discharge Elimination System (NPDES) permit program is part of the comprehensive effort provided by the Clean Water Act (CWA), to reduce or eliminate point source pollution from industrial, municipal, commercial, and agricultural discharges. The Act prohibits discharge of pollutants into all waters of the United States unless a permit is issued by EPA or an EPA approved State Program.

The permit is a mechanism for imposing on point source dischargers the uniform national effluent limitations and national performance standards for new source facilities which EPA is required to promulgate. These effluent limitations and standards, set by Office of Water and Waste Management, establish the maximum amounts of various pollutants which can be legally discharged by a facility. Where effluent limitations or standard regulations have not been promulgated for a particular industrial discharger, the effluent limits will be set by the available and economically feasible abatement technology. Such permits will be issued on a case-by-case basis Additionally, if at a given facility, established national effluent limits will not reduce pollutants enough to meet the ambient water quality standards set by the State or EPA, the permit will impose more stringent effluent limitations as necessary to meet the water quality standards. Permits are issued to require that pollutant reductions be accomplished according to given time schedules.

Controlling discharges of toxic pollutants is the major emphasis of the NPDES permit program. Direct discharges of toxic pollutants into navigable waters will be controlled by the addition of Best Available Technology (BAT) limitations in permits of industries which discharge toxics. A recent focus of the permit program is the implementation of the pretreatment program. The pretreatment program places responsibilities on municipalities or States to enforce national pretreatment standards against industries discharging toxic pollutants into municipal treatment facilities. A significant amount of resources will be used to assist municipalities in the development of adequate pretreatment programs.

As part of its effort to improve the regulatory process, EPA is consolidating permit procedures for permits issued under five seperate programs, including NPDES. Regulations and application forms for permit consolidation have been proposed, and will be finalized during 1980. Coordinating and consolidating permit regulations should benefit both the public and the Agency by reducing delay and simplifying the permitting process.

Another important function of the program is resolution of adjudicatory hearings held on the terms, conditions, and effluent limitations contained in permits or determinations concerning requests for variances from permit effluent limitations. This clears the way for a finally effective and enforceable permit. Additionally, EPA will conduct non-adversary panel hearings for municipalities which have requested marine discharge modifications under section 301(h) of the Clean Water Act. Non-adversary panel hearings will be used to process any first issuance of an NPDES permit to a discharger that has not previously held an NPDES permit as well as the first decision on any variance applied for by a discharger.

A primary goal of the permit program is to encourage States to assume responsibility for the NPDES program. At present, 33 States have assumed NPDES authority. The permit program devotes a considerable amount of resources to overviewing these state NPDES programs to ensure that these States issued permits conform with national permit program policies and procedures.

For all of its permit issuance activities, EPA is committed to involving the public by publishing and disseminating informational materials, answering questions, and holding public hearings and meetings.

1979 Accomplishment

In 1979, obligations totalled $7,595,900; EPA issued a total of 501 major, and 2,299 minor permits, 2,039 to industrial dischargers, 504 to municipal sources, and 257 permits to other sources. In 1979, $1,348,900 was obligated for contract support of permit issuance activities including pretreatment program assistance, adjudicatory hearing support, and information system development.

During 1979, EPA issued "second round" permits designed to assure control of toxic pollutants. The NRDC Consent Decree of June 1976 (modified in March 1979, resolving litigation against the Agency regarding its control of toxic pollutants under the Clean Water Act) requires that EPA regulate up to 129 priority pollutants for 34 industrial categories. The Decree requires that permits issued to dischargers in these 34 industrial categories incorporate the Best Available Technology (BAT) guidelines when they are promulgated. Because Best Available Technology (BAT) toxic effluent limitation guidelines in the 34 industrial categories identified by the National Resources Defense Council (NRDC) Consent Decree were not available in 1979, the issuance of second-round permits was difficult. EPA policy, developed to deal with the absence of these guidelines in 1979, would issue short-term Best Practicable Technology (BPT) permits to the dischargers in these 34 industrial categories on the condition that the BAT toxic guidelines would be incorporated into the permits when they are promulgated.

A major program effort in 1979 was the promulgation of the revised NPDES regulations. The final regulations, published in June, 1979, clarified and improved the NPDES program. The revision incorporated changes which reflect experience gained by issuing permits, the results of court decisions, and new requirements imposed by the 1977 Amendments to the Clean Water Act. It also completely reorganized the regulations to simplify them and reduce needless duplication.

In June 1979, the Agency proposed consolidated permit regulations and application forms outlining procedures to coordinate five permit programs, including NPDES. The regulations are expected to increase the quality of environmental protection while reducing the regulatory burden on industry and the government.

Also in 1979, development of the pretreatment program began to focus attention on the indirect discharge of industrial toxics through publicly owned treatment works. Resources were used to assist municipalities and States in developing pretreatment programs, negotiate and settle a lawsuit filed against the final pretreatment regulations, and develop joint construction grants/permit guidance on implementing the pretreatment program.

For a variety of technical, financial and administrative reasons, a large number of publicly owned treatment works (POTWs) are not in compliance with the Clean Water Act's treatment requirements. Developing a strategy to deal with these cases has paved the way for effective control of noncomplying POTWs by coordinating EPA's construction grants, permit, and water enforcement programs.

EPA review of State NPDES programs in 1979 ensured issuance of effective and enforceable permits; uniform application of policy, regulations, and effluent limitations; and technical and/or policy support where needed. In addition, the permit program in 1979 continued to strive for the goal of maximizing State participation in the NPDES program, by working with States to develop and assume the NPDES program. In 1979, one additional State, Alabama, assumed the NPDES program to make a total of 33 NPDES States. In 1979, EPA also reviewed and approved State programs to permit discharges from Federal facilities and to implement the pretreatment program.

1980 Program

In 1980, the Agency has allocated a total of $9,885,700 for permits issuance of which $6,849,900 is for Salaries and Expenses and $3,035,800 is for Abatement, Control and Compliance. Contract support will be used for pretreatment program assistance and review, for technical assistance for permit writers, and for general program support.

In 1980, permit program activities focused on reducing discharges, especially toxic discharges, from the most significant sources of pollution and thereby achieving the greatest measure of environmental protection possible. The 1980 program will continue to concentrate on applying effluent requirements reflecting Best Conventional Technology (BCT) and BAT level controls to major dischargers with new and reissued permits and ensuring that these permits are finally effective and enforceable. It is estimated that EPA will issue approximately 500 major permits in 1980. In 1980, the permit program will also resolve approximately 20 adjudicatory hearings to clear the way for effective and enforceable permits.

60-531 O - 80 - 39

Significant permitting resources will be assigned to the preparation of new schedules for municipal and industrial permits allowing tie-in to municipalities to extend deadlines under provisions of the 1977 Amendments to the CWA in accordance with the newly issued Municipal Strategy. Approximately 10,000 municipalities have requested Section 301 (i) extensions based on lack of financial assistance and approximately 200 municipalities have asked for Section 301 (h) marine discharge modifications.

A considerable amount of permit program effort in 1980 is being devoted to implementing the general pretreatment regulations (40 CFR 403) promulgated in June of 1978. These regulations are designed to control toxic pollutants introduced by sources discharging into municipal systems. The number of facilities covered by the pretreatment regulations is comparable to that covered by the NPDES regulations for direct dischargers. Efforts in 1980 are focused on developing compliance schedules for municipal permittees requiring them to develop pretreatment programs and reviewing and approving such programs.

Resources will be used in 1980 for reviewing and approving requests by NPDES State for State pretreatment program approval. It is anticipated that the majority of the 33 approved NPDES States will be submitting pretreatment plans for approval.

During 1980, the consolidated permit regulations and applications forms will be finalized. Implementation of the regulations and use of the consolidated forms will also begin in 1980, reducing delay to permit applicants and simplifying the permitting process. The NPDES portion of the consolidated form will also provide the mechanism for collecting information on toxic pollutants to be used in developing appropriate permit limits.

The permit program continues to overview State-run NPDES programs and to encourage State assumption of the NPDES program in 1980. During this fiscal year, two or three States are expected to receive program approval for a total of 35 or 36 NPDES States.

1980 Explanation of Change from Budget Estimate

The net increase of $483,000 results from several actions. An increase of $259,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $66,400 and $114,400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $535,400 to this activity.

A reprogramming of $13,100 from water quality NEPA compliance - municipal waste treatment facility construction; and $15,100 from water quality ambient monitoring was made to provide for actual staff assignments and projections for travel, training, overtime and grade and step increases.

Reprogramming in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers to ambient air quality monitoring ($21,400), to interdisciplinary Federal activities/EIS review ($1,900); to solid waste enforcement ($9,000); to water quality enforcement ($120,700); to pesticides enforcement ($7,100); to air stationary source enforcement ($31,800); from solid waste enforcement ($16,000), and from water quality enforcement ($17,000).

1981 Plan

The Agency requests a total of $13,875,400 for the NPDES permits issuance program in 1981, including $7,948,800 for Salaries and Expenses and $5,926,600 for Abatement, Control and Compliance. None of the 243 permanent workyears requested are an increase from 1980. Of this, approximately $4,600,000 will go towards toxic control in the pretreatment program including reviews and approval of pretreatment programs; the remainder will be used to provide technical assistance for permit writers, and for general program support.

Virtually all of these resources will be used for the control of direct or indirect toxic dischargers. Control of direct toxic dischargers will be achieved by imposing new and more stringent toxic controls on industrial dischargers through the issuance of "second round" permits. EPA will issue permits to approximately 500 industrial toxic dischargers in 1981. In 1981, the program will again be issuing BAT level permits according to promulgated guidelines. Where no BAT guidelines have been promulgated, either for NRDC Consent Decree industries or secondary industries, permits must be issued on a case-by-case basis in order to meet the July 1984 statutory deadline.

The pretreatment program will provide control over indirect discharges of toxic pollutants into municipal treatment systems. EPA has significant pretreatment responsibilities in non-NPDES State including providing technical assistance directly to municipalities, developing pretreatment compliance schedules and including them in permits, and approving local pretreatment programs. Nationally, EPA will be developing general legal and technical pretreatment guidance. Additional resources will also be devoted to approving State pretreatment programs in those States responsible for the NPDES program.

As part of its efforts to improve the regulatory process during 1981, EPA will continue to implement the consolidated permit regulations that will be finalized during 1980. By coordinating permit issuance procedures for five seperate permit programs, EPA expects to reduce delay to permit applicants and simplify permitting procedures.

As increasing numbers of State assume the authority to administer the NPDES program, EPA's role in overviewing States take on increasing importance. In 1981, considerable effort will be devoted to overviewing the adequacy of State NPDES programs to assure that major permits are being issued in conformance with national standards and procedures. It is anticipated that two or three additional States will be delegated for NPDES authority in 1981.

Using technical and legal resources, the resolution of adjudicatory hearings for major industrial discharge permits will continue to be a priority activity in 1981. Particular attention will focus on resolving adjudicatory hearings relating to permits with toxic concerns. Approximately 50 adjudicatory hearings will be conducted.

Resources will also be used in 1981 to issue permits with Section 301 (h) modifications to municipalities discharging into marine waters. This modification is intended to reduce the economic impact of complying with Clean Water Act standards when municipalities discharge into marine waters.

For all of its permit issuance activities, EPA is committed to involving the public by publishing and disseminating informational materials, answering questions, and holding public hearings and meetings.

WATER QUALITY

Water Quality Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses..	$15,477	$14,670	$15,937	$16,277	+$340
Abatement, Control and Compliance.....	4,157	4,174	3,053	3,909	+856
Total.....	19,634	18,844	18,990	20,186	+1,196
Permanent Positions....	568	541	520	511	-9
Full-time Equivalency..	610	644	588	575	-13

Budget Request

The Agency requests a total of $20,186,400 for 1981, an increase of $1,195,700 from 1980. Included in this total is $16,277,100 for Salaries and Expenses and $3,909,300 for Abatement, Control and Compliance, with increases of $339,600 and $856,100, respectively. The 511 permanent workyears requested for 1981 is a nine permanent workyears decrease from the 1980 level.

Program Description

The water quality enforcement program emphasizes as its highest priority, response to emergencies that involve substantial hazards to public health and safety. The second major goal is to complete enforcement actions against violators of the July 1, 1977, Clean Water Act (CWA) deadline as part of the major source enforcement effort (MSEE) initiated in 1978 and continued in 1979. The third major program goal is to complete the planning of and begin implementing the enforcement aspects of the National Municipal Policy and Strategy. The fourth goal is to control toxic substances through toxic and pretreatment enforcement and compliance monitoring programs.

The water quality enforcement program also emphasizes compliance monitoring and enforcement of NPDES wastewater discharge permits. Other activities include enforcement actions necessary to achieve compliance with regulations on spills of oil and hazardous substances, ocean dumping, dredge and fill, and other related requirements of the CWA, the Rivers and Harbours Act (Refuse Act), and the Marine Protection, Research, and Sanctuaries Act. Most water quality enforcement activities are conducted cooperatively with the States; maximum State assumption of these activites is a primery goal.

EPA's NPDES compliance monitoring program includes compliance review, compliance inspections, and enforcement actions initiated because of instances of noncompliance. Compliance review is the review of all compliance schedule status and self-monitoring reports submitted by permittees to EPA. These reports provide information on planning, construction, operation, and effluent characteristic of treatment facilities. Compliance inspection refers to all field related activities conducted to determine the status of compliance with statutory requirements, including compliance evaluation and performance audit (both nonsampling inspections), sampling inspections, and surveillance and analysis in response to emergencies and toxics enforcement.

The FWPCA provides for various enforcement mechanisms to assure compliance with the requirements of the Act. Primarily, these are issuance of Section 309(a)(1) Notices of Violations to dischargers with NPDES permits issued by approved States; issuance of Section 309(a)(3) Administrative Orders to dischargers with EPA issued permits and to dischargers with State issued permits who fail to comply with Notices of Violation; and referrals to U.S. Attorneys for civil or criminal relief to remedy violations of NPDES permits and Administrative Orders. The law provides for $10,000 civil penalties and $25,000 criminal fines per day of violation.

The non-NPDES enforcement program is responsible for providing legal support to achieve compliance with Section 311 oil and hazardous substance discharge liability provisions and Section 404 dredge and fill material permit provisions (shared enforcement responsibility with the Corps of Engineers) of the CWA. In addition, the non-NPDES enforcement program is responsible for enforcement actions initiated under the Refuse Act, and under the ocean dumping provision of the Marine Protection, Research and Sanctuaries Act.

1979 Accomplishments

During 1979, obligations totaled $19,633,800; the water quality enforcement program continued the major source enforcement effort initiated in 1978, devoting substantial resources to enforcement actions against major industrial permittees not in compliance with the July 1, 1977, deadline for attaining specified effluent limitations and against publicly owned treatment works (POTW) with permit schedule violations. Of the 482 civil case actions initiated by EPA through the end of 1979, 222 of these cases against major facilities have been referred to the Department of Justice (DOJ) as part of the major source enforcement effort; the balance of cases were initiated for other than July 1, 1977, schedule deadline violations.

In States without an approved permit program, EPA reviewed all major industrial and POTW discharger self-monitoring reports. Regional offices conducted 1,090 compliance evaluation inspections and 920 compliance sampling inspections to verify permittee self-monitoring information; reviewed violations identified in permittee self-monitoring reports ; and identified and categorized permit violations not indicated in the reports. The regional offices diverted significant NPDES inspection resources for response to specific emergency and toxics enforcement activities such as the Love Canal in New York, the Kimbuck landfill in New Jersey, the carbon tetrachloride spill to the Kanawha River in West Virginia, the City of Louisville POTW shutdown due to toxics, and other similar emergencies throughout the Nation.

As part of the water enforcement and compliance monitoring program, a number of significant activities were initiated in 1979.

The National Municipal Policy and Strategy was finalized to coordinate enforcement of NPDES municipal permits where Federal construction grant funds are involved. Instruction manuals and guidance were issued detailing correct procedures to be used in conducting NPDES compliance sampling, biomonitoring and performance audit inspections. In keeping with the Agency's emphasis on assuring the quality of permittee monitoring data, the water enforcement program issued performance samples and deficiency notices to NPDES permittees as checks on the quality of self-monitoring data. Chemical and biological compliance monitoring inspections were conducted through the use of substantial contract support.

Where violations were identified and follow-up enforcement activities were necessary, EPA regional offices issued a total of 149 Notices of Violation, 516 Administrative Orders, and forwarded cases to headquarters for referral to DOJ, involving 29 facilities in violation of the July 1, 1977, deadline; regions and headquarters prepared case support for those referrals, including follow-up support after referral to DOJ.

The Agency continued to monitor and bring enforcement actions in accordance with the oil spill and oil spill prevention requirements of Section 311 of the Clean Water Act and the ocean dumping provision of the Marine Protection, Research and Sanctuaries Act. Regional offices referred 963 oil spill civil cases to the Coast Guard, two oil spill criminal cases to the U.S. Attorney, and conducted 471 proceedings for violations of oil spill prevention countermeasure and control plans (the SPCC program).

The $4,156,800 obligated in 1979 for contract support to water enforcement activities was used to meet ADP information needs, produce regulations, evaluate ongoing programs, conduct feasibility studies, provide technical and legal case support, assist in case preparation for adjudicatory hearings, implement pretreatment program enforcement, and conduct monitoring and inspection training.

1980 Program

The Agency has allocated a total of $18,990,700 and 520 permanent workyears to this program for 1980, of which $15,937,500 is for Salaries and Expenses and $3,053,200 is for extramural purposes under the Abatement, Control, and Compliance appropriation.

During 1980, all activities supporting enforcement actions in emergency situations involving substantial threats to public health and safety will continue to receive the highest program priority.

Following those activities, second priority is placed on concluding the first phase of the major source enforcement effort. This will be accomplished by bringing enforcement actions, most of which were initiated in 1978 and 1979 against major permittees which failed to complete and put in operation required treatment facilities by the July 1, 1977 deadline, to decision by settlement, administrative process, or court trail. In 1979, the first phase of the major source enforcement effort was completed by referring the last of 222 civil actions against major facilities to DOJ. In 1980, EPA expects to bring any of the 222 cases not yet completed to conclusion.

A second major source enforcement effort, equal in scope to that conducted with respect to industrial dischargers will be initiated for municipal dischargers in 1980.

Issuance of The Nation Municipal Policy and Strategy in October of 1979 by the Administrator gave added impetus to this effort. The Policy and Strategy provides comprehensive and detailed guidance for coordination of the three municipal program activities--construction grant, permits and enforcement. The Policy and Strategy also outlines criteria for determining which municipalities will be granted Section 301(i) extensions. These noncomplying municipalities which are not granted 301(i) extensions will be the target of immediate enforcement action, either administrative or judicial.

The Office of Water Enforcement and the Office of Water Program Operations have joined in an effort to demonstrate the effectiveness of a municipal management system (MMS) during 1980. EPA plans to have the system operational in all regions by 1981. In the MMS concept, enforcment will assist in the tracking of municipal permit compliance and initiate enforcement actions where Section 301(i)(1) requests have been denied.

The third major priority for the year is development and implementation of a formal toxics compliance/monitoring and enforcement program. During 1980, this program will be implemented through comprehensive guidance and training activities. With the promulgation of regulations for the control of hazardous substances spills in August 1979, it is anticipated that there may be an increase in actions initiated for spills of reportable quantities of hazardous and toxic substances.

For those industrial and municipal facilities in compliance, the fourth major program priority is to assure that these facilities are maintaining compliance with CWA statutory requirements. Regional offices will conduct 2,121 compliance inspections, and take enforcement actions where necessary in an effort to insure continued major industrial and municipal compliance with the established effluent limitations.

Headquarters will provide legal support to the permit program for NPDES adjudicatory hearings. The permit program will resolve approximately 20 adjudicatory hearings in 1980.

With increased emphasis on approval of State programs, EPA will provide assistance to the 33 States currently operating approved enforcement programs. Two to three additional States are expected to have an approved NPDES program by the end of the year. In support of the National State Overview Policy, the regional office will also conduct State program management audits and joint State compliance inspections to assure that States with approved programs continue to maintain standards which are in compliance with nationally established requirements. In the case of States which have not yet received program approval, EPA will work with those States to improve technical and legal capabilities and promote State cooperation and participation in enforcement program efforts.

Contract funds totalling $3,053,200 will be used in 1980 in support of the following activities: litigation training for regional personnel and case development support activities; regional program operations, including support for responses to emergency situations; compliance monitoring and sampling; technical support for bioassay screening techniques development; computer programming activities; technical support for adjudicatory hearings; and quality assurance samples for all major NPDES permittees.

1980 Explanation of Changes from Budget Estimates

The net increase of $146,700 results from several actions. An increase of $586,200 results from the cost of the October pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses, and $1 million to ADP costs, resulted in a decrease of $144,700,

$265,400, and $10,400 respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $44,300 to this activity.

A reprogramming was made to the air media, mobile source enforcement ($3,800); and, to the solid waste media, hazardous waste enforcement ($7,000) for travel costs. A reprogramming was made of $69,700 from water quality NEPA compliance/municipal waste treatment facility construction for actual staff assignments and projections for travel, training, overtime and grade and step increases.

A reprogramming was made of $57,000 to the solid waste media to reflect the transfer of 50 percent of the oil spill enforcement capability since these activities are closely related. This reprogramming gives formal recognition to otherwise hidden responsibilities which draw on other abatement and control and enforcement resources; in this case some pesticides and water enforcement capability is being diverted to initiate enforcement actions where hazardous waste disposal presents an imminent danger to public health and welfare. A reprogramming was made of $50,000 to management and support - program management for litigation management support and establishment of a special investigations unit in the Immediate Office of the Assistant Administrator. A reprogramming was made of $92,700 from interdisciplinary Federal activities/EIS reviews to reflect the transfer of the Federal facilities monitoring and compliance function which is more appropriately identified with enforcement activities.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers to interdisciplinary Federal activities/EIS reviews ($19,100); to interdisciplinary new source permit EIS preparation ($300); to air stationary source ($13,500); to management and support administrative management ($34,100); to water quality permit issuance ($17,000); to solid waste enforcement ($5,800); to pesticide enforcement ($5,100); to management and support regional management ($39,700); to toxic substances ($4,900); to water quality EIS reviews ($10,000); to management and support general counsel ($5,500); from water quality permit issuance ($120,700); and from solid waste hazardous waste ($15,000).

1981 Plan

The Agency requests a total of $20,186,400 for this program, of which $16,277,100 is for the Salaries and Expenses appropriation and $3,909,300 for the Abatement, Control, and Compliance apppropriation. There will be a decrease of nine permanent workyears from the program level of 520.

Enforcement actions in emergency situations involving substantial threats to public health and safety will have highest program priority in 1981. While every effort will be made to conclude all MSEE cases by the end of 1980, a small number of cases may continue unresolved in 1981. If this does occur, the enforcement program's second priority will be to resolve all remaining enforcement actions initiated in 1978 and 1979 against major permittees who failed to meet the July 1, 1977, deadline.

Enforcement will continue to provide any legal and technical assistance needed in preparation for emergency actions taken under the authority of the Clean Water Act and any assistance in preparation and expeditious conclusion of major enforcment referrals.

The pretreatment and toxics compliance/monitoring and enforcement programs developed during 1980 in response to new program emphasis on control of toxics will be implemented during 1981. These programs will use bioassay screening techniques and compliance sampling inspections to determine if the permittee is in compliance with existing effluent limitations, identify those permittees who may have potential toxicants in their effluent which were not identified in the permit, and to provide toxicity data for permit issuance.

In those States without approved permit programs, EPA will review all major industrial and POTW discharger self-monitoring reports for compliance with permit conditions; a portion of this activity will be accomplished through contractor support. An automated system to detect discharge monitoring report violations is being implemented in 1980 to provide for automated processing and initial review of all discharge self-monitoring reports. This system will be operational for tracking major permittee effluent data in 1981. Regional offices will conduct approximately 2,700 compliance inspections to verify permittee self-monitoring information. Where necessary, appropriate enforcement actions will be initiated, including issuance of Notices of Violations and Administrative Orders, and referral of cases to the Department of Justice.

During 1981, enforcement activities in conjunction with The Municipal Policy and Strategy effort will include the issuing of administrative orders where extension requests have been denied; prioritizing of possible referrals for judicial action; and processing of municipal referrals, including legal and technical assistance in support of those municipal case referrals. Emphasis will also be placed on establishing a Permit Compliance System (PCS) and Grants Information Control System (GICS) interface. Enforcement will cooperate in developing procedures to integrate data from the two management information systems into one method of information control to insure routine coordination of construction grants, permitting, and enforcement activities.

In support of an anticipated 40 adjudicatory hearing requests during 1981, enforcement will provide legal and technical assistance to the permit program for resolution of those hearings.

Two additional States are expected to receive approval for NPDES programs during 1981. Regions will take an active role in State program development and overview.

Non-NPDES enforcement of Section 311 oil spill requirements and the Ocean Dumping Act will be held to 1980 levels.

Enforcement of Section 404 provisions will receive higher priority during 1981 than in previous years. Increased attention will be given to identifying illegal dumping activities, those incidents performed by individuals not possessing a permit, and aggressively taking the appropriate legal action.

In 1981, contract funds totalling $3,909,300 are requested to provide for the following activities: specific case support (expert testimony), litigation training for regional personnel, performance samples (self-monitoring quality assurance) for major NPDES permittees (or labs used by permittees), technical manuals development, biomonitoring activities, and the contracting out of NPDES compliance sampling inspections.

NOISE

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
Appropriation						
Salaries and Expenses...	$4,055	$12,778	$4,923	$4,575	-$348	
Abatement, Control and Compliance.....	6,712	175	8,151	8,352	+201	
Total.....	10,767	12,953	13,074	12,927	-147	
Permanent Workyears.....	90	97	105	99	-6	
Full-time Equivalency...	130	178	175	153	-22	
Outlays.....	9,293	10,320	10,900	11,000	+100	
Authorization Levels....	19,000	*	*	*		

*Authorization pending.

PROGRAM HIGHLIGHTS

Environmental Noise Stategies and Standards:						N-8
Salaries and Expenses..	1,572	6,162	1,817	1,900	+83	
Abatement, Control and Compliance.....	3,892	...	4,276	4,353	+77	
Noise Program Strategies Implementation:						N-12
Salaries and Expenses..	1,803	5,612	2,188	1,959	-229	
Abatement, Control and Compliance.....	2,540	175	3,573	3,774	+201	
Total:						
Salaries and Expenses..	3,375	11,774	4,005	3,859	-146	
Abatement, Control and Compliance.....	6,432	175	7,849	8,127	+278	
Total, Abatement and Control Program.....	9,807	11,949	11,854	11,986	+132	
Noise Enforcement:						N-10
Salaries and Expenses..	680	1,004	918	716	-202	
Abatement, Control and Compliance.....	280	...	302	225	-77	
Total, Enforcement Program.....	960	1,004	1,220	941	-279	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
Permanent Positions						
Environmental Noise Strategies and Standards	36	35	37	37	...	N-8
Noise Program Strategies Implementation	41	39	47	43	-4	N-12
Total, Abatement and Control Program	77	74	84	80	-4	
Noise Enforcement, Total Enforcement Program	19	23	21	19	-2	N-19
Full-time Equivalency						
Environmental Noise Strategies and Standards	47	52	52	52	...	N-8
Noise Program Strategies Implementation	58	87	84	66	-18	N-12
Total, Abatement and Control Program	105	139	136	118	-18	
Noise Enforcement, Total Enforcement Program	25	39	39	35	-4	N-19

OVERVIEW AND STRATEGY

Consistent with the policy set forth in the Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, the overall objective of the noise program is to achieve an environment free from noise which jeopardizes public health or welfare. The 1978 Act provides the opportunity for a more effective and efficient approach to the noise abatement problem than was offered by the 1972 Act alone. In particular, assistance to State and local governments has been strengthened. In addition, the 1978 Act provides for the design and management of a noise health effects program.

Under the authorities of the legislation, EPA is required to regulate the noise emissions from newly manufactured products identified as major sources of noise (other than aircraft). Emission standards must also be set for in-use equipment of interstate motor carriers and in-use equipment and facilities of interstate rail carriers (i.e., on equipment presently in-use). Noisy products and products sold to control noise may be regulated to require labeling and thus aid consumers in product selection. EPA also must provide both financial and technical assistance to State and local governments in developing programs for noise control.

EPA also has the responsibility to coordinate Federal noise related research and control activities. Furthermore, the legislation allows EPA to designate products with low noise emissions for preferential Federal purchase, thus bringing added marketplace pressure to bear on the development of quieter equipment.

The noise program has placed emphasis on control by regulations of noise from surface transportation and construction types of equipment. Six promulgations of regulations on these types of equipment are to be made in 1980 (four relate to court ordered revisions of the Interstate Rail Carrier regulation). The regulation development work planned for 1981 is almost exclusively on these types of equipment.

Effective State and local noise control programs are essential if the Nation is to reduce noise to levels commensurate with the protection of public health and welfare. Consequently, EPA conducts a program of technical and financial assistance to both State and local governments. This program serves to complement the Federal noise regulatory development program which relates primarily to newly manufactured rather than in-use products.

In both 1980 and 1981, EPA is emphasizing assistance to those State agencies which in turn will provide extended technical assistance to communities within their jurisdictions. Ten university-based technical assistance centers also will assist communities, as will the Each Community Helps Others (ECHO) program. The ECHO program uses local agency volunteer noise experts to assist other communities with EPA paying out-of-pocket expenses but not salaries.

Through these various types of assistance it is expected that there will be a substantial increase in the number of jurisdictions having active programs over the next 5 to 10 years. Such programs should emphasize abatement of area noise problems from vehicles, from stationary sources (fence line standards), and construction site noise. Noise abatement planning (zoning and land use planning) and public information are additional key functions.

Fiscal year 1979 saw a renewed emphasis placed on the coordination of Federal noise control efforts with joint demonstrations of abatement techniques and attention to the linking of Federal programs which can assist in obtaining urban noise control. These efforts are continuing in 1980 and 1981. Investigations of the health effects of noise (with emphasis on the non-auditory effects) are being expanded in 1980 and will be maintained during 1981. Both the Federal coordination and health effects investigations will assist future decision making by State and local officials as well as future EPA regulatory efforts.

The EPA noise enforcement program is responsible for Federal enforcement under the Noise Control Act of 1972, Section 6, new product noise standards and Section 8, informational labeling requirements applicable to new products. The main emphasis of the program in 1980 and 1981 will be the continued enforcement of the new product regulations through production verification and selective enforcement audits. Enforcement activities will also include continued development of enforcement strategies and regulations for other Section 6 and Section 8 products and a minimal level of guidance and assistance to State/local noise enforcement programs.

Purpose of Abatement and Control Program

The basic objective of the noise abatement and control program is to promote an environment for all Americans free from noise that jeopardizes their health and welfare. This objective is pursued through four major program thrusts as detailed in the Noise Control Act of 1972, and amended by the Quiet Communities Act of 1978. First, emission standards and/or labeling regulations are promulgated on selected products; second, State and local noise control efforts are strengthened through the provision of technical assistance and limited financial assistance through cooperative agreements; third, Federal activities relating to noise research and abatement and control are coordinated; and fourth, investigations on noise effects and abatement and control technology are continued.

Noise control product regulation includes the identification of major sources of noise and the subsequent development of emission regulations for newly manufactured products. These standards are intended to protect the public health and welfare through the application of the best available noise control technology, taking into account the cost of compliance. Regulations requiring the labeling of products by manufacturers will be established for some products which emit noise capable of adversely affecting the public health and welfare. Labeling will also be required for products which are sold on the basis of their effectiveness in reducing noise.

Technical assistance as well as limited financial assistance is provided to other Federal agencies and to State and local governments for the development and implementation of noise control programs. Assistance is given to State and local communities to establish in-use enforcement programs for noise sources.

Technical assistance is provided in the form of direct guidance to State and local agencies on how to carry out environmental assessment in order to define noise problems and to other Federal agencies whose programs and activities have noise control implications. Noise abatement and control is characterized under the following subactivities:

Noise Strategies and Standards

This subactivity includes: (1) the establishment of noise emission standards for newly manufactured products; (2) the establishment of noise labeling requirements for newly manufactured consumer products; (3) the establishment of regulations requiring labeling for noise protection and control devices; (4) investigations into the human health and welfare effect of noise; (5) coordination of Federal research on noise; and (6) the demonstration of control technologies that are in direct support of regulations.

Noise Program Strategies Implementation

This subactivity includes activities related to the implementation of regulatory requirements for which the Federal government has primary responsibility (i.e., the control of noise emissions at Federal facilities and review of EIS's for their noise impact), and the overall coordination of all Federal programs for noise abatement and control. Also included is technical and financial assistance in the development and improvement of State and local noise control programs, including but not limited to consultation with States and localities on specific noise abatement problems, and the provision of financial assistance through cooperative agreements for noise control program initiation, transportation and stationary source planning, and noise control demonstrations.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Noise Program.....	$13,074
Salaries and Expenses..... This decrease relates primarily to the reduction of 22 workyears.	-348
Abatement, Control and Compliance.... This increase will provide increased support to State programs under the noise control implementation and evaluation activity.	+201
1981 Noise Program.....	12,927

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $12,927,000 is requested for 1981. This request, by appropriation account, is as follows:

Salaries and Expenses.....	$4,575,800
Abatement, Control and Compliance.....	8,351,200

This request represents a decrease of $148,200, reflecting a decrease of $348,500 related to the reduction of 22 workyears. An increase of $200,700 in extramural funds for the noise control implementation and evaluation activity will support continuing attention to State and local program development with emphasis on State programs which will provide assistance to local communities, and to the provision of technical support through the Technical Assistance Centers, ECHO programs, and demonstration programs. The environmental noise strategies and standards activity is increased by $76,600 and the noise enforcement activity is decreased by $77,000, each reflecting a change in extramural support.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$12,953
Congressional decrease to travel.....	-24
Proposed pay raise supplemental	+184
Reprogramming for authorized workyears.....	+58
Miscellaneous reprogrammings...	-97
Current 1980 estimate.....	13,074

The congressional reduction of $2 million to Agency travel costs resulted in a reduction of $24,000 to the noise media.

The proposed supplemental for partial funding of the October 1979 pay raise will increase this media by $184,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $58,000 to the noise media.

Miscellaneous reprogrammings were made primarily to cover projected costs based on 1979 expenditures: to the air media, $130,400; to the pesticides media, $6,000; to water quality, $5,300; to drinking water, $1,300; to radiation, $6,000; from solid waste, $18,200; and from management and support, $34,600.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$10,768	$13,283
Congressional change	-24	...
Proposed pay raise supplemental	+184	...
Reprogramming for authorized workyears	+58	...
Miscellaneous reprogrammings	-97	...
Change in amount of carryover funds available	+28	-209
Program change	+1,900	-147
Change in rate of obligation	+465	-160
Total estimated obligations	13,283	12,767
(From new obligation authority)	(13,074	(12,767)
(From prior year funds)	(209)	(...)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The changes discussed in the previous paragraph -- congressional, pay raise supplemental, authorized workyears, and reprogrammings -- account for a net increase of $121,000.

The amount of carryover funds to be obligated in 1980 is $209,000, an increase of $28,000 over the 1979 level. In 1981, it is estimated that there will be no carryover funds, resulting in a decrease of $209,000 from the 1980 level.

The program change in 1980 was previously estimated to increase obligations by $1.9 million; the decrease of budget authority in 1981 will result in a reduction of $147,000 to obligations.

The rate of obligation was slightly slower than anticipated in 1979; therefore an increase of $465,000 is projected. The 1981 rate will then level off with a decrease of $160,000.

NOISE

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
PROGRAM LEVELS					
Review production verification reports	1065	880	880	1244	+364
Monitor production verification tests	8	27	27	62	+35
Monitor Selective Enforcement Audit tests	11	20	20	37	+17
Conduct production verification tests	...	8	8	12	+4
Conduct Selective Enforcement Audit tests	...	2	2	3	+1
Inspect manufacturer's records	18	39	39	122	+83
Provide Enforcement Guidance re: State/ local Enforcement procedures	...	2	2	3	+1
Develop State/local Enforcement procedures	1	2	2	4	+2
Conduct site comparison tests	6	10	10	19	+9
Number of S/L noise programs that were assisted	30	5	30	12	-18

NOISE

Environmental Noise Strategies and Standards

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Noise Standards Development:					
Salaries and Expenses..	$882	$3,564	$1,014	$1,233	+$219
Abatement, Control and Compliance.....	2,620	...	2,561	2,382	- 179
Noise Control Technology Assessment and Criteria Development:					
Salaries and Expenses	690	2,598	803	667	- 136
Abatement, Control and Compliance.....	1,272	...	1,715	1,971	+ 256
Total:					
Salaries and Expenses..	1,572	6,162	1,817	1,900	+ 83
Abatement, Control and Compliance.....	3,892	...	4,276	4,353	+ 77
Grand Total.....	5,464	6,162	6,093	6,253	+ 160
Permanent Positions					
Noise Standards Development.....	18	21	22	22	...
Noise Control Technology Assessment and Criteria Development.....	18	14	15	15	...
Total.....	36	35	37	37	...
Full-time Equivalency					
Noise Standards Development.....	25	28	24	24	...
Noise Control Technology Assessment and Criteria Development.....	22	24	28	28	...
Total.....	47	52	52	52	...

Budget Request

The agency requests a total of $6,252,300 and 37 permanent workyears for 1981, an increase of $159,100 from 1980. Included in this total is $1,900,100 for the Salaries and Expenses appropriation and $4,352,200 for the Abatement, Control and Compliance appropriation, with increases of $82,500 and $76,600 respectively. This program is mandated by the Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, and will provide improved criteria for regulations development as well as overall support for State and local noise control programs.

60-531 O - 80 - 40

Program Description

This program focuses on the development and promulgation of emission and labeling regulations that will reduce harmful noise emissions from new products. These regulations are developed through the gathering and analysis of data on noise and its health effects to determine exposure criteria and levels of noise reduction required for abatement options and for specific regulatory actions. Evaluations of private and public sector technology development are performed to determine best available technology, and assessments of economic, environmental and health data are made to ascertain the costs and benefits of regulation. This program also includes conduct of a noise health and welfare effects investigation program.

Noise Standards Development

The objective of noise product regulation is to effectively regulate products which are major contributors to environmental noise exposure. Such regulation is necessary to the achievement of overall environmental noise control goals of reducing environmental levels below Ldn 75 dB as soon as possible and ultimately below Ldn 65 dB.

Sections 6 and 8 of the Noise Control Act require the Environmental Protection Agency to develop and promulgate regulations for control of noise from products which are major noise sources through the use of noise emission limitations and/or noise labeling requirements for newly manufactured products. The analysis leading to and supporting these regulations includes the preliminary investigation of potential products for regulation, economic and technological feasibility and the evaluation of health, welfare, and other benefits derived from specific product regulation. Other activities include the preparation of necessary background and supporting material, such as EIS's and economic assessments, for the promulgation of standards.

Noise Control Technology Assessment and Criteria Development

The objective of this activity is to provide support to EPA for noise product regulation and State and local control efforts through investigations and documentation of noise health effects and availability of noise control technology. This also includes overall strategy development for national noise control efforts.

Specific activities include the development of health and welfare criteria for the assessment of general exposure to noise; the assessment of the environmental, economic, social and health impacts of noise abatement options; and the assessment of advanced and/or future noise control technology for the development and evaluation of noise abatement options, including coordination and evaluation of noise research and development conducted by other Federal agencies. Other activities encompass the development of an overall noise control strategy and subsequent substrategies, and the continuation of the noise health effects program.

NOISE STANDARDS DEVELOPMENT

1979 Accomplishments

1979 resources included approximately $2,620,400 in contract support. These funds were used for the development of noise emission and labeling regulations and for studies for products which may require future regulation or labeling. Major accomplishments for 1979 included: promulgation of two labeling actions (general provisions and Hearing Protectors); an emission regulation for truck-mounted solid waste compactors; and proposal of the court-ordered Interstate Rail Carrier revision. In addition, developmental work was carried out which will lead to the promulgation of emission regulations for railroad facilities (4 source standards in 1980 and a property line standard in 1981), buses, motorcycles, and low noise emission products. Work was continued on noise source studies on guided mass transit, portable air compressors, chain saws, mufflers, construction equipment, and motorboats (These studies will be completed in 1980).

1980 Program

In 1980, the Agency has allocated a total of $3,575,400 and 22 permanent workyears to this program, of which $1,014,300 is for the Salaries and Expenses appropriation and $2,561,100 is for extramural purposes under the Abatement, Control and Compliance appropriation.

The 1980 program provides for the promulgation of emission regulations for motorcycles and buses. Other regulatory activities include promulgation of the court-ordered Interstate Rail Carrier revision (4 source standards); promulgation of a regulation for Low Noise Emission products; initiation of work on revision of medium/heavy duty truck and Interstate Motor Carrier regulations, light duty vehicles (tentatively a labeling action), and tires (labeling); and continuation of candidate selection studies for household and consumer products. In addition, six noise source studies begun in previous years are being completed.

1980 Explanation of Change from Budget Estimate

The net increase of $11,400 results from several actions. An increase of $30,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,900. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $17,500 to this activity.

1981 Plan

The Agency requests a total of $3,614,600 and 22 permanent workyears for this program, of which $1,232,900 is for the Salaries and Expenses appropriation and $2,381,700 is for the Abatement, Control and Compliance appropriation. During 1981, regulatory activities will include promulgation of a property line standard for the court-ordered Interstate Rail Carrier revision, and the proposal of a labeling regulation for a yet to be selected consumer product. Work will continue on development of final regulation for Wheel and Crawler Tractors. Work will also continue on a proposal of revision of the medium/heavy duty truck and Interstate Motor Carrier regulations, as well as developmental work for a proposal of labeling regulations for light duty vehicles and tires. The candidate selection studies for product labeling will also be continued.

NOISE CONTROL TECHNOLOGY ASSESSMENT AND CRITERIA DEVELOPMENT

1979 Accomplishments

1979 resources included approximately $1,271,800 in contract support. These funds were used for technology research demonstrations, development of information on health and welfare effects of noise (both auditory and non-auditory) and development of noise abatement substrategies.

Major accomplishments in 1979 included a report on the University of Miami study which related noise to a 30 percent increase in blood pressure of the primates under study. Other health effects activities included an MIT workshop on noise cardiovascular effects and the completion of four reports designed to improve the understanding of the effects of noise.

Also during 1979, health and welfare assessments were carried out for regulatory actions under development, and a simplified version of the "levels" document was completed. This document will be used by State and local governments and others who lack specific noise expertise in the health effects of noise.

Technology research projects were continued on quiet trucks (the first three trucks are undergoing noise reduction modification, with operational testing to begin in 1980) and on internal combustion engines and tires.

During 1979, five joint technology demonstrations with other government agencies were begun or were in process. These included quiet propeller, construction site, highway construction, shipyard machinery and electric generating plant projects.

1980 Program

In 1980, the Agency has allocated a total of $2,517,800 and 15 permanent workyears to this program, of which $803,300 is for the Salaries and Expenses appropriation and $1,714,500 is for extramural purposes under the Abatement, Control and Compliance appropriation.

During 1980, work is continuing on the quiet truck, internal combustion engine and tires technology demonstration studies. Technology demonstrations on general construction site and quiet propellers is being completed; three others ongoing in 1979 are continuing. Also, during 1980, the technology assessment will begin on advanced design engines and cooling systems.

In addition, a multiyear technology plan and technology assessment of government/industry construction equipment is being completed. The noise health effects program is continuing, with seven research reports expected to be completed. These reports will (1) improve methodology for assessing health and welfare impact of noise, (2) improve the definition of noise, (3) provide support for regulations development and reports to Congress; and (4) overall support for State and local programs.

Eight auditory/non-auditory health effects studies are in process with three completions anticipated. This includes completion of the 3rd year report of the University of Miami Primate Study. In addition, three national assessments of noise impacts are underway, with two completions expected. On-going support is being provided to other Federal agencies in establishing health and welfare impacts of noise. In addition, an updated report on Federal research in noise effects is being issued.

1980 Explanation of Change from Budget Estimate

The net decrease of $79,800 results from several actions. An increase of $33,000 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,400. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $111,400 to this activity.

1981 Plan

The Agency requests a total of $2,637,700 and 15 permanent workyears for this program, of which $667,200 is for the Salaries and Expenses appropriation and $1,970,500 is for the Abatement, Control and Compliance appropriation.

The quiet engine demonstration, heavy and medium truck demonstration, quiet tire demonstration, and a quiet cooling system demonstration will continue based on methods to quiet engines on vehicles as determined in the technology assessments. The following interagency demonstrations to determine techniques and technologies for abating noise will be completed: industrial machinery (with Navy); electric generating power plant noise (with TVA); and highway construction site (with FHWA).

The noise health effects research program for 1981 includes the completion of five studies on auditory and non-auditory health effects. The non-auditory effects of noise are not well understood (including the contribution to heart disease) and may have serious public health implications. The University of Miami primate study on the cardiovascular effects of noise will be completed and a retrospective epidemiological analysis will be initiated in 1981. Other animal studies will begin to examine cardiovascular dynamics and biomedical changes. A major sleep study will be started primarily to examine the health consequences due to noise disrupted sleep. Also, community survey data will be acquired to more accurately relate human response to construction site noise.

NOISE

Noise Program Strategies Implementation

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriaton					
Noise Control Implementation and Evaluation:					
Salaries and Expenses.....	$993	$4,392	$1,262	$1,032	-$230
Abatement, Control and Compliance.....	2,083	...	3,120	3,321	+201
Federal Agency Coordination:					
Salaries and Expenses.....	297	672	277	289	+12
Abatement, Control and Compliance.....	379	...	400	400	...
Noise Regional Program Implementation:					
Salaries and Expenses.....	513	548	649	638	-11
Abatement, Control and Compliance.....	78	175	53	53	...
Total:					
Salaries and Expenses.....	1,803	5,612	2,188	1,959	-229
Abatement, Control and Compliance.....	2,540	175	3,573	3,774	+201
Grand Total.....	4,343	5,787	5,761	5,733	-28
Permanent Positions					
Noise Control Implementation and Evaluation.....	20	16	25	22	-3
Federal Agency Coordination..	8	9	8	8	...
Noise Regional Program Implementation.....	13	14	14	13	-1
Total.....	41	39	47	43	-4
Full-time Equivalency					
Noise Control Implementation and Evaluation.....	31	52	53	37	-16
Federal Agency Coordination..	9	12	8	8	...
Noise Regional Program Implementation.....	18	23	23	21	-2
Total.....	58	87	84	66	-18

Budget Request

The Agency requests a total of $6,733,600 and 43 permanent workyears for 1981, a decrease of $28,300 and 4 permanent workyears from 1980. Included in this total is $1,959,600 for Salaries and Expenses and $3,773,900 for Abatement, Control and Compliance with a decrease of $229,000 and an increase of $200,700, respectively The net decrease results from a decrease in salaries and expenses attributable to a reduction of 16 workyears and a partially compensating increase in abatement, control and compliance resources. The program addresses the mandate of the Quiet Communities Act of 1978 and will encourage State and local governments to develop or improve their noise control programs.

Program Description

This program provides technical and financial assistance to States and localities in the development and implementation of noise control programs. Effective State and local noise control programs are essential if the Nation is to reduce noise to levels commensurate with the protection of public health and welfare. In recognition of this need, the Noise Control Act, as amended by the Quiet Communities Act, calls for EPA to conduct technical and financial assistance programs to State and local governments. The objective of the assistance program is to substantially increase the number of communities having effective noise control programs with special emphasis on lessening the impact of noise from motor vehicles (motorcycles, trucks, autos). Assistance is also provided in the areas of stationary source control (fence line standards), construction site noise control, noise abatement planning (zoning, land use planning, airport planning), and public information.

This program also includes the implementation of regulatory requirements for which the Federal Government has primary responsibility (i.e., the control of noise emissions at Federal facilities and review of EIS's for noise implications, and the overall coordination of all Federal programs for noise abatement and control. The objective of this program is to bring the major noise authorities of other Federal agencies to bear on the noise problem in a total national effort. Included are such agencies as the Federal Highway Administration, the Federal Aviation Administration, the Urban Mass Transit Administration, the Department of Housing and Urban Development, and the Department of Defense.

Noise Control Implementation and Evaluation

The Noise Control Act, as amended by the Quiet Communities Act of 1978, directs the Environmental Protection Agency to deliver assistance to States and localities in order to encourage the development of effective noise control, including encouragement of State and local actions to complement EPA's noise emission regulations. One of the objectives of this program is to have in place, by 1985, at least 400 active local noise control programs covering 72 million people and 40 active State programs. The local programs may cover one or all of the noise program components identified above depending on local need. The goal of 400 operational noise programs is targeted to cities with populations over 25,000 since noise problems tend to be greater in more highly populated areas. However, smaller cities that are part of larger urban aggregations are also included in some instances since they share "urban" characteristics. In addition, some smaller communities may have particular problems which will require regulatory actions and EPA assistance. EPA has an additional goal of insuring that 300 of these programs have components to control motor vehicles noise. Effective State and local programs are needed to complement EPA regulations for major sources of noise. This will include State and local enforcement of in-use controls which supplement EPA's manufacturing controls, and assistance in enforcement of the Federal anti-tampering provision.

This program provides funding for limited financial assistance through cooperative agreements to States and localities and the design and administration of assistance programs for State and local use. Special emphasis is placed on helping States initiate programs to assist local communities start noise control programs and to strengthen existing local programs. Other EPA assistance includes the Each Community Helps Others (ECHO) program, development of State and local program "tools", e.g., model laws and codes, administration of the noise control demonstration and assistance program, and technical assistance centers located at ten universities.

Federal Agency Coordination

The activities of this program are directed toward assuring that Federal Government responsibilities for noise control are met. Such activities include assisting other Federal agencies to consider and include where appropriate, noise abatement and control practices in their programs and comply with Federal, State, interstate, and local requirements; coordinating noise control programs carried out by Federal agencies; monitoring the progress of other Federal facilities' noise abatement activities; and reviewing Federal environmental impact statement insofar as their noise impacts are concerned. Particular attention is given to carrying out the President's Urban Noise Initiative.

In the aviation area, the EPA will continue to review Federal Aviation Agency actions and make further recommendations concerning aviation noise. This includes tracking FAA follow-up to regulations previously recommended by EPA. Special emphasis will be placed on more stringent standards for new design aircraft and on airport planning and compatible land use.

Noise Regional Implementation

The regional offices occupy a key role in the development of effective State and local programs.

Specifically, regional offices provide the focal point for interaction with State and local governments, and the development of State and local government capabilities to implement noise abatement activities. As such, they provide general technical support, as well as regional coordination and support of national public awareness programs, demonstration projects and regulations development. In addition, the regions will have a larger role in administering the financial assistance program for State and local noise control.

NOISE CONTROL IMPLEMENTATION AND EVALUATION

1979 Accomplishments

1979 resources included $2,083,400 in extramural support. These funds were used for the development and delivery of both technical and financial assistance (cooperative agreements) to State and localities and for demonstration projects with other Federal agencies.

During 1979, EPA continued to deliver technical assistance to State and localities in developing noise control programs. Delivery mechanisms included the ECHO program (a volunteer program where local noise control experts assist other communities one or two days a month with EPA paying out of pocket expenses); State assignees, temporary government employees serving in State governments to assist in the development of noise control programs; LISTEN-a computer program service which processes attitudinal/physical survey data for States and localities; Senior Environmental Employee Program; and community noise counselors. Other activities included the continuation of the Quiet Communities Program (QCP). In Allentown, Pa., the first QCP, an ordinance was passed and is currently being enforced. Also, during 1979, two new QCP's were started in Spokane, Washington; and Kansas City, Missouri. The QCP program is a research experiment and is designed to develop and demonstrate the best available techniques for noise control in various type of communities.

Additional efforts included the development and implementation of general public information and education programs concerning noise abatement and control, as well as support of airport noise abatement planning programs in communities. The Philadelphia airport study was begun (a joint EPA/FAA airport study required by Section 8 of the Quiet Communities Act of 1978).

A major accomplishment during 1979 was the development of an implementation plan for the award of several types of grants: State and local start-up, transportion planning, demonstration and Technical Assistance Centers, as mandated by the Quiet Communities Act of 1978. In implementation of this plan, during 1979, 38 cooperative agreements were awarded (including State ECHO) to States and localities and 10 to universities (for the establishment of Technical Assistance Centers).

It is anticipated that these cooperative agreements will greatly enhance EPA's ability to meet its goal of at least 400 active local programs covering 72 million people and 40 active State noise control programs in place by 1985.

1980 Program

In 1980, the Agency has allocated a total of $4,382,700 and 25 permanent workyears to this program, of which $1,262,400 is for the Salaries and Expenses appropriation and $3,120,300 is for extramural purposes under the Abatement, Control and Compliance appropriation.

In 1980 the cooperative agreement program begun in 1979 is continuing with funding generally comparable to that available in 1979. This program includes financial assistance to States and localities for program starts; urban demonstrations as addressed in the President's Urban Noise Initiatives Program, surface transportaion noise control demonstrations; and support for the Regional Noise Technical Assistance Centers. Assistance to airports for noise control planning will continue and the study of the Philadelphia International Airport, as mandated by the Quiet Communities Act, will be completed.

In 1980, the EPA-run ECHO program is being maintained, and States are being assisted in initiating ECHO programs of their own. The QCP program will be continued in Spokane and Kansas City and a reassessment of Allentown (the first QCP city) will be undertaken.

Also, a manual on vehicles noise enforcement will be started. Projects to mitigate aviation noise through assistance to airports in noise control planning and operations will be carried out.

Also, in 1980, the Senior Environmental Employee program, LISTEN, the State assignee program, and the noise counselor program will continue. In addition, general public information and education programs will be developed, and training of State and local noise control officers will be carried out.

The monitoring phase of the National Noise Assessment, a requirement of the Quiet Communities Act of 1978, will begin..

1980 Explanation of Change from Budget Estimate

The net decrease of $9,100 results from several actions. An increase of $52,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,400. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $21,400 to this activity.

A reprogramming of $74,000 was made to the media to air emission testing, analysis and data support preproduction compliance to support the fuel economy program. A reprogramming of $35,000 was made from the Management and Support media to reflect the transfer of an employee from the Management Information and Data Systems Division.

1981 Plan

The Agency requests a total of $4,353,100 and 22 permanent workyears for this program, of which $1,032,100 is for the Salaries and Expenses appropriation and $3,321,000 for the Abatement, Control and Compliance appropriation.

In 1981, continuing attention will be given to State and local program development with emphasis on State programs which will provide assistance to local communities, and to the provision of technical support through the Technical Assistance Centers, ECHO programs, and demonstration programs. Sixteen (16) States are expected to have assumed responsibility for running the ECHO Program by the end of the fiscal year. Demonstrations will focus on (1) testing control techniques in the area of motor vehicle, highway noise, and construction site noise for use by States and localities in noise program development; and (2) urban initiative demonstrations, (e.g., neighborhood self help program and soundproofing and weatherization program). The financial assistance program to States, localities and Technical Assistance Centers will be funded at a level comparable to 1980.

The QCP Program in Spokane and Kansas City, Senior Environmental Employee program, community noise counselors, and LISTEN (computer program) will also continue. 1981 will also see the development of general public information and education programs and training of State and local noise control officials. A manual on vehicle noise enforcement, begun in 1980, will be completed. Airport noise abatement projects will be continued.

The National Noise Assessment begun in 1980 will continue. This assessment, a requirement of the Quiet Communities Act of 1978, is critical to establish a noise baseline against which to measure the problem in the future. It will also provide input into the definition of the extent of control needed through EPA regulations and State and local efforts.

FEDERAL AGENCY COORDINATION

1979 Accomplishments

1979 resources included $378,700 in contract support. These funds were used to support interagency agreements with other Federal agencies. The purpose of this activity is to carry out noise control demonstration and test techniques, and incorporate the results of these demonstrations into the appropriate program of Federal agencies. Another benefit of this activity is that EPA funds are enhanced by contributions from other participating agencies. During 1979, this type of activity included the following demonstrations: off-road vehicles, highway noise mitigation; Bus Retrofit, Bus Transit Mall planning and design (planning and design phase completed); hearing conservation (model hearing conservation program).

1980 Program

In 1980, the Agency has allocated a total of $677,400 and 8 permanent workyears to this program, of which $277,400 is for the Salaries and Expenses appropriation and $400,000 is for extramural purposes under the Abatement, Control and Compliance appropriation. These resources will be used to continue and complete funding for interagency agreements begun in earlier years to carry out noise abatement demonstrations.

Five projects (all begun earlier) to demonstrate non-vehicular methods of noise mitigation which can be incorporated into highway and bufferzone design and construction through other Federal agencies will be carried out. These are: off-road vehicles; highway noise mitigation; Bus Transit Mall planning and design; Bus retrofit; and hearing conservation. Reports are being issued in 1980 on off-road vehicles, and Bus Transit Mall planning and design. These reports describe the control techniques and results obtained. The EPA and the agencies involved will work together to insure that successful techniques will be applied elsewhere in the Federal and private sectors as a results of this documentation. EPA also intends to integrate these demonstration efforts into its interagency urban noise control program which was begun in 1979. The EPA has set up an interagency task force to insure that noise control is an integral part of the Administration's urban initiative. Also, in 1980, EPA will develop data on noise of road surface materials (tire/road interaction) with Federal Highway Administration.

EPA will also continue to review FAA activities concerning aviation noise abatement.

1980 Explanation of Change from Budget Estimate

The net increase of $5,400 results from several actions. An increase of $11,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $700. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $5,000 to this activity.

1981 Plan

The Agency requests a total of $689,100 and 8 permanent workyears for this program, of which $289,100 is for the Salaries and Expenses appropriation and $400,000 for the Abatement, Control and Compliance appropriation. In 1981, special emphasis will be placed on the development of information and potential recommendation to the FAA of more stringent standards for new design aircraft and on airport planning and compatible land use. Also, updated reports from the Interagency noise R&D panels will be published: Surface Transportation, Machinery and Construction Equipment, Aviation, and a listing of current government research. A variety of technology demonstrations will be underway including a quiet house demonstration, Transit Mall Planning and design, highway noise, tire/road interaction study, and reports on diagnostic inspection programs and joint-use airports.

NOISE REGIONAL PROGRAM IMPLEMENTATION

1979 Accomplishments

In 1979, a total of $591,400 was obligated, of which $78,000 was for extramural purposes. Regional accomplishments in 1979 included major involvement in the implementation of the various cooperative agreements with State and local governments and the establishment of Technical Assistance Centers. Also, in 1979, the regions provided oversight of the Quiet Communities Program (one in Allentown, Pa., and two additional ones added in 1979 - Spokane, Washington, and Kansas City, Missouri). Other activities carried out included the review of EIS's, the holding of noise abatement workshops for State and local officials, equipment loans, the providing of direct technical assistance to local communities and public education on noise abatement and control. Regional review of Federal facilities, to assure compliance with noise regulations was also provided. In addition, the regions acted as project managers for the ECHO and State assignee programs in their specific regions.

1980 Program

In 1980, the Agency has allocated a total of $701,700 and 14 permanent workyears to this program, for which $648,800 is for the Salaries and Expenses appropriation and $52,900 is for extramural purposes under the Abatement, Control and Compliance appropriation.

In 1980, the regions will expand their responsibilities in the management of the cooperative agreement program. This will also include detailed post-award follow-up with key State and local agencies. The regions will also continue to administer the technical assistance program to State and local governments with emphasis on the development of the Technical Assistance Centers and State-run ECHO programs so that these programs can serve as the technical assistance delivery mechanism to States and localities. They will also continue to manage QCP experiments in two communities (Spokane and Kansas City), continue to manage the ECHO program, and will assist some States in taking over the EPA ECHO program in their states. The equipment loan program and EIS reviews will be continued as will noise control workshops and on-site visits.

1980 Explanation of Change from Budget Estimate

The net decrease of $21,500 results from several actions. An increase of $22,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $17,300 to this activity.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfer to water quality municipal waste treatment construction ($5,300); to pesticides use management ($6,000); to Management and Support personnel management ($400); to drinking water underground injection control program ($1,300); to air quality management implementation ($56,400); to radiation program implementation ($6,000); and from solid waste hazardous waste management regulatory stratospheric implementation ($18,200).

1981 Plan

The Agency requests a total of $691,300 and 13 permanent workyears for this program, of which $638,400 is for the Salaries and Expenses appropriation and $52,900 is for the Abatement, Control and Compliance appropriation.

1981 will see a continuation of 1980 activities, with emphasis on the development and strengthening of the Technical Assistance Centers and a projected 16 State-run ECHO programs so that these programs can more rapidly serve as the mechanisms for providing technical assistance.

The regions will also be responsible for administering the cooperative agreement program. They will manage the QCP program (2 cities), review EIS's, run the equipment loan program and conduct noise control workshops.

NOISE

Noise Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses.....	$680	$1,004	$918	$716	-$202
Abatement, Control and Compliance...	280	...	302	225	-77
Total.....	960	1,004	1,220	941	-279
Permanent Positions	19	23	21	19	-2
Full-time Equivalency	25	39	39	35	-4

Budget Request

The Agency requests a total of $941,200 for 1981, a decrease of $279,000 from 1980. Included in this total is $716,100 and 19 permanent workyears for Salaries and Expenses and $225,100 for Abatement, Control and Compliance, with a decrease of $202,000 and $77,000, respectively.

Program Description

The long-range goals and major objectives of the noise enforcement program are to assure that manufacturers distribute products in commerce that comply with Sections 6 and 8 (new product noise emission standards and information labeling requirements respectively) of the Noise Control Act of 1972. Additionally, assistance is given to State/local governments in the development of effective noise enforcement program. The program works to integrate Federal, State, and local noise enforcement activities into a coordinated national program to reduce levels of environmental noise and to ensure in-use compliance of regulated products subject to an applicable standard under Section 6 or 8 of the Act.

1979 Accomplishments

The 1979 resources included $279,500 for contracts which were used to conduct surveillance testing of in-use regulated portable air compressors and trucks; technical support for the manufacture, distribution, and operation of both compressors and trucks; and for State and local enforcement guidance.

In 1979, the primary emphasis of the noise enforcement program was enforcement of the standards for portable air compressors and medium and heavy-duty trucks. Records of 18 major truck and compressor manufacturers were inspected. Enforcement actions were initiated against two manufacturers for producing portable air compressors that did not comply with the noise emission standards.

Enforcement activities that were conducted in 1979 included the review of 1,065 production verification reports, the monitoring of eight production verification tests and 11 selective enforcement audits, the conducting of six test site comparison studies, and the conducting of 1,056 surveillance tests. Enforcement assistance and guidance was provided to 30 state and local noise enforcement programs and one State/local enforcement procedures package was developed. Enforcement sections of the general labeling provisions and of the labeling

requirement for hearing protectors were promulgated in 1979. In addition, six technical studies and six special investigations were conducted.

FY 1980 Plan

In 1980, the Agency has allocated a total of $1,220,200 to this program, of which $918,100 is for the Salaries and Expenses appropriation and $302,100 is for extramural purposes under the Abatement, Control and Compliance appropriation. Extramural funds will be used to support the State/local noise enforcement effort; evaluate and summarize production verification reports; acquire products for investigative testing; provide for engineering and technical support services; continue surveillance testing of in-use regulated compressors and trucks; and initiate surveillance testing of hearing protectors.

Current operations of the noise enforcement program include continued enforcement of Section 6 new product noise emission standards for portable air compressors and medium and heavy duty trucks; initiate enforcement of Section 8 labeling requirements for hearing protectors; continued assistance and guidance to State and local noise enforcement programs; and continued development of enforcement strategies for additional Section 6 standards and Section 8 labeling requirements.

Planned noise enforcement activities include: review of 880 production verification reports; monitor and conduct 27 production verification and 20 selective enforcement audit tests; inspection of 39 compressor and truck manufacturers' records and facilities; develop a guidance manual for State/local prosecutors for use in enforcement of noise control ordinances; provide assistance to 30 State/local noise enforcement programs; conduct 1,000 surveillance tests; conduct 10 site comparison tests; and conduct nine special investigations and seven technical studies.

1980 Explanation of Changes from Budget Estimate

The net increase of $216,400 results from several actions. An increase of $34,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $14,800. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $196,300 to this activity.

1981 Plan

The Agency requests a total of $941,200 for this program, of which $716,100 is for the Salaries and Expenses appropriation and $225,100 for the Abatement, Control and Compliance appropriation. Extramural funds will be used to provide assistance and guidance to State and local noise enforcement programs. Additionally, funds will be used to continue the surveillance testing of in-use compressors and trucks and will be initiated for buses.

These resources will allow the Agency to review 1,244 manufacturers' noise production verification reports, to monitor and conduct 74 production verification tests and 37 selective enforcement audits, and to conduct 122 investigations of manufacturers' records to insure that only complying products are distributed in commerce. A program to ensure compliance with the Section 8 labeling requirements for hearing protectors is continued. Also, as necessary, EPA will conduct investigations of alleged noncompliance, prepare administrative hearings. EPA will correlate manufacturers' noise testing facilities with its facility located at Sandusky, Ohio. The development of enforcement strategies and attendant regulations will continue in accordance with the schedule of controlled products developed by the Office of Noise Abatement and Control.

Assistance and guidance to State and local noise enforcement programs will be provided in two ways: (1) to individual programs that request assistance and guidance on specific issues and problems, and (2) by the development of training and guidance for State and local noise enforcement. Additionally, guidance on field enforcement of the Federal labeling requirements will be prepared and distributed to State and local noise enforcement programs to ensure that the national Federal labeling program is successful in providing consumers with the noise-generating or noise reducing properties of the products labeled under the Noise Control Act.

During 1981, the major activities of the noise enforcement program will be to:

- Review 1244 production verification reports;
- Monitor 62 production verification tests;
- Conduct 12 production verification tests;
- Monitor 37 selective enforcement audits;
- Conduct 3 selective enforcement audits;
- Conduct 122 inspections of manufacturers' records;
- Conduct 19 site comparison tests;
- Develop 4 State/local enforcement procedures;
- Provide 3 State/local enforcement guidance packages;
- Assist 12 State/local noise enforcement programs;
- Conduct 8 special investigations;
- Prepare 8 technical studies;
- Review 210 labeling verification reports;
- Monitor 10 labeling verification tests; and
- Monitor 6 compliance audit tests.

INTERDISCIPLINARY

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Salaries and Expenses	$9,247	$16,763	$13,957	$11,875	-$2,002	
Research and Development	12,812	9,939	11,012	13,816	+2,804	
Abatement, Control and Compliance	3,186	1,400	1,372	1,550	+178	
Total	$25,245	$28,102	$26,341	$27,241	+$900	
Permanent Workyears	219	266	260	250	-10	
Full-time Equivalency	279	383	366	353	-13	
Outlays	20,124	44,200	22,000	23,200	+1,200	
Authorization Levels	46,285	*	*	*		

* Authorizations are contained within amounts authorized for the Federal Water Pollution Control Act, Clean Air Act, Solid Waste Disposal Act, Federal Insecticide, Fungicide, and Rodenticide Act, Safe Drinking Water Act, as well as certain portions by virtue of the Appropriation Act. In 1980 and 1981, authorizations have been proposed for the Research and Development activities.

PROGRAM HIGHLIGHTS

Health and Ecological Effects:						I-7
Salaries and Expenses	1,739	3,370	3,654	3,118	-536	
Research and Development	5,295	1,729	1,462	2,114	+652	
Anticipatory Research:						I-11
Salaries and Expenses	3,143	9,425	5,189	3,433	-1,756	
Research and Development	6,014	7,458	9,550	11,312	+1,762	
Monitoring and Technical Support:						I-20
Salaries and Expenses	2,032	1,815	2,858	2,478	-380	
Research and Development	1,503	752	...	390	+390	
Total:						
Salaries and Expenses	6,914	14,610	11,701	9,029	-2,672	
Research and Development	12,812	9,939	11,012	13,816	+2,804	
Total, Research and Development Program	19,726	24,549	22,713	22,844	+131	
Environmental Impact Statements:						I-25
Salaries and Expenses	2,332	2,153	2,256	2,152	-104	
Abatement, Control and Compliance	3,186	1,400	1,372	1,400	+28	

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Energy Review and Permitting:						I-30
Salaries and Expenses...	...	...	...	694	+694	
Abatement, Control and Compliance.....	...	...	...	150	+150	
Total:						
Salaries and Expenses...	2,332	2,153	2,256	2,846	+590	
Abatement, Control and Compliance...	3,186	1,400	1,372	1,550	+178	
Total, Abatement and Control Program	5,518	3,553	3,628	4,396	+768	
Permanent Positions						
Health and Ecological Effects.....	36	59	66	66	...	I-7
Anticipatory Research	69	85	78	58	-20	I-11
Monitoring and Technical Support.....	40	24	38	36	-2	I-20
Total, Research and Development....	145	168	182	160	-22	
Environmental Impact Statements.....	72	76	77	77	...	I-25
Energy Review and Permitting.....	...	...	...	13	+13	I-30
Total, Abatement and Control Program	72	76	77	90	+13	
Full-time Equivalency						
Health and Ecological Effects.....	46	120	106	106	...	I-7
Anticipatory Research.	89	118	114	81	-33	I-11
Monitoring and Technical Support.....	59	58	63	61	-2	I-20
Total, Research and Development....	194	296	283	248	-35	
Environmental Impact Statesments.....	85	87	82	79	-3	I-25
Energy Review and Permitting.....	...	...	...	26	+26	I-30
Total, Abatement and Control Program	85	87	82	105	+23	

OVERVIEW AND STRATEGY

Many environmental problems can be approached directly through specific media programs, but effective management sometimes requires cutting across the usual media lines. Often the problem, skill, or technique involved is not readily assignable to a specific media, and an interdisciplinary approach is required. This interdisciplinary approach is consistent with the original concerns of the Agency: the need for an integrated organization to regulate pollution in all media and to assure that control measures applied to one media do not adversely impact other media. EPA employs this intermedia approach is several research and development programs where the problems, tools, and results are multidisciplinary in nature and must be coalesced into an integrated program. This concept is also applied to those areas of the environmental impact statement program where the identification of cross-cutting impacts is important. The workforce development program has been included due to its role in promoting the development of a national multidisciplinary environmental workforce. Similarly, a program of energy review and permitting has been included due to the need for a flexible multidisciplinary approach in assuring that the rapid development of new energy facilities is accomplished in an environmentally sound manner.

Research and Development

Anticipatory Research -- This program was first identified as a separate effort in 1978 to (1) identify and characterize emerging environmental problems before crises arise, (2) provide a commitment of support to important long-term studies which may require several years to complete, and (3) support the development of new knowledge about fundamental environmental principles and concepts. The results of these programs are intended to provide the scientific foundation for future applied work and to provide the scientific information necessary for future regulatory actions. The program has been divided into three functional components: (1) Innovative Research--to provide opportunities for scientists with unique ideas, (2) Center Support Research--to manage and provide long-term support for basic studies in key mission research areas (e.g., epidemiology, intermedia transport studies, and ground water research), and (3) Special Programs--to investigate emerging interdisciplinary problems. Included in this third activity are programs dealing with acid rain, carcinogens, environmental benefits, biological monitoring and integrated assessment of emerging or latent environmental problems.

Scientific Assessment -- This program can be functionally divided into two major components: comprehensive criteria development/effects assessment and special health risk analysis. Under the health risk component are the reproductive, carcinogenic, and exposure activities. The reproductive assessment activity was initiated to develop and refine methodology for the evaluation of mutagenic risk, which is an emerging health effect of increasing concern to the Agency. The mutagenic emphasis is part of a comprehensive plan to strengther the Agency's assessment capability in reproductive effects. The exposure assessment activity, likewise, develops and refines methodology and guidelines for conducting exposure analyses; exposure data is often a key factor influencing the outcome of the Agency's risk assessments and selection of subsequent regulatory options. The responsibility for developing Agencywide guidelines for health risk analysis has been placed in this program to assure that consistent approaches are developed for assessing pollutant impacts across all media and pollutants.

The criteria development/effects assessment program integrates experimental results, across all media lines, to produce comprehensive evaluations of pollutants' effects on human health. This information represents the end-point of the R&D process and is used as scientific criteria for the Agency's regulatory decision making. This program represents a significant commitment by the Agency to assure that research results are used in a timely fashion within the regulatory development process.

60-531 O - 80 - 41

Technical Information -- The objectives of the program are twofold. Its principal activity is to provide central quality control to assure that the products of ORD's research are documented, packaged and disseminated in a cost-effective manner to environmental officials and others who need the information both within and outside of EPA. The technical information program also provides ORD with the information systems necessary to effectively plan and manage EPA's research program. These systems provide ORD and EPA management with timely and accurate data on the status of ORD's 3,000 - plus active research projects.

Environmental Workforce Development Program -- This program provides agency-wide coordination and review of environmental workforce activities. It assures the development of a stable workforce of trained personnel to perform environmental management and protection functions, and uses EPA resources in conjunction with training programs of other Federal agencies.

Environmental Impact Statements -- The National Environmental Policy Act 1969 requires Federal agencies to prepare environmental impact statement (EISs) on major actions significantly affecting the quality of the human environment. This EIS requirement applies to new source discharge permits issued by EPA. Section 309 of the Clean Air Act requires that EPA review proposed actions of other Federal agencies to assure that they do not adversely affect the quality of the environment.

Energy Review and Permitting -- The Agency has developed this program to support the President's plan for accelerated energy development. The intent of this program is to ensure that the development of new energy facilities proceeds without unnecessary delay and without damage to the environment. Most new energy facilities will require EPA issued permits or an environmental review from EPA. The Agency is committed to processing applications from critical energy facilities as expeditiously as possible. The already increasing number of new energy facilities, along with the compressed time schedules imposed by the Energy Mobilization Board, will require increased effort from EPA's regional offices for environmental impact statement preparation and review, permitting, and related modelling and monitoring. Because of the many uncertainties connected with the energy development program, it is impossible to predict which offices in which regions will best be able to use these resources. For this reason, the Agency has grouped these activities together in the interdisciplinary media.

SUMMARY OF INCREASES AND DECREASES	(in thousands of dollars)
1980 Interdisciplinary Program.....	$26,341
Salaries and Expenses.....	-2,082
This net decrease reflects a shift of funds for extramural purposes from scientific assessments, technical information, and anticipatory research, within the Research and Development program. An increase is provided for the energy review and permitting program.	
Research and Development.....	+2,804
The net increase in extramural funds is primarily due to the transfers from salaries and expenses as reflected above.	

	(in thousands of dollars)
Abatement, Control and Compliance.....	+178
The increase is for extramural funding related to the energy review and permitting program, with a slight increase requested for NEPA compliance/EIS preparation.	
1981 Interdisciplinary Program.....	27,241

SUMMARY OF BUDGET ESTIMATE

1. Summary of Budget Request

An appropriation of $27,240,600 is requested for 1981. This request, by appropriation, is as follows:

Salaries and Expenses.....	$11,874,400
Research and Development.....	13,816,200
Abatement, Control and Compliance..	1,550,000

This represents an increase of $899,800 over the 1980 interdisciplinary program. An increase of $844,200 is requested for the energy review and permitting program in order to provide additional resources to the Agency's regional offices to be used for the preparation and review of environmental impact statements and the issuance of permits for new energy facilities. The regions will also use these resources for related monitoring and modelling activities. A net increase of $55,600 results from minimal changes to each of subactivities within this media: monitoring and technical support (+$9,900); anticipatory research (+$5,800); health and ecological effects (+$115,600); and EIS statements (-$75,700).

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$53,102
Congressional changes:	
Travel.....	-28
ADP.....	-6
Supplies and expenses.....	-2
Anticipatory research.....	-2,000
Integrated environmental assistance...	-25,000
Reprogramming for authorized workyears..	-227
Miscellaneous reprogrammings.....	+104
Proposed pay raise supplemental.....	+398
Current 1980 estimate.....	26,341

The Congress made several reductions which resulted in decreases to this media: a reduction of $2 million each to travel and to supplies and expenses resulted in a decrease of $28,000 and $2,000, respectively. A reduction of $1 million to ADP costs decreased this media by $6,000. The anticipatory research program was reduced by $2 million. The integrated environmental assistance program was not funded, with a decrease of $25 million.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $227,000 to this media. The proposed supplemental to partially fund the October 1979 pay raise increases the intermedia by $398,000.

Miscellaneous reprogrammings were made to the Pesticides media ($50,000); to the toxic substances media ($5,600); from the drinking water media ($5,600); to the water quality media ($20,700); to the air media ($87,400); and from the management and support media ($261,200).

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$25,244	$26,601
Congressional changes	-404	...
Effect of reprogrammings	-123	...
Pay raise supplemental	+398	...
Change in amount of carryover funds available	-1,514	-260
Program increase	+3,000	+900
Total estimated obligations	26,601	27,241
(From new obligation authority)	(26,341)	(27,241)
(From prior year funds)	(260)	...

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The congressional changes discussed in the previous section, with the exception of integrated environmental assistance grants, result in a decrease of $404,000 to obligations. Since the integrated grant program was new, there would be no adjustment to make to prior year obligations. The reprogrammings and pay raise supplemental result in a change in obligations of -$123,000 and +$398,000, respectively.

The amount of carryover funds to be obligated in 1980 is $260,000, a decrease of $1,514,000 from the 1979 level. In 1981, no obligations are estimated in carryover funds, a decrease of $260,000 from the 1980 level.

The increase is budget authority in 1980 was previously estimated at $3 million; in 1981, it is estimated that the program change will increase obligations by $900,000.

INTERDISCIPLINARY

Health and Ecological Effects

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Scientific Assessment:					
Salaries and Expenses..	$1,739	$3,370	$3,654	$3,118	-$536
Research and Development.....	5,295	1,729	1,462	2,114	+652
Total.....	7,034	5,099	5,116	5,232	+116
Permanent Positions Scientific Assessment....	36	59	66	66	...
Full-time Equivalency Scientific Assessment....	46	120	106	106	...

Budget Request

The 1981 budget request for the scientific assessment program is $5,231,600 and 66 permanent workyears. Included in this total is $3,117,400 for the Salaries and Expenses appropriation and $2,114,200 for extramural purposes under the Research and Development appropriation; a decrease of $536,400 and an increase of $652,000 respectively. This request represents a net increase of $115,600 which will be used to expand reproductive effects assessment efforts.

Program Description

The scientific assessment program provides the Agency's regulatory programs with a centralized capability for evaluating information on health and ecological effects from exposure to pollutants and estimating the level of health risk involved. The program reviews, upon request, known information about pollutant effects, interpreting this information and producing scientific data summaries for subsequent risk assessment or other regulatory decision making. The hazard assessment portion of the program will be responsible for maintaining consistency and quality among the risk assessments prepared throughout the Agency. The program establishes, as needed, agencywide guidelines for health and risk analysis. The program will also conduct risk assessments and prepare health and environmental effect criteria documents for Agency regulatory activities in addition to reviewing completed assessments from other offices within EPA for conformance to Agency guidelines. Typical outputs from the scientific assessment program include: reviews, guidelines, health criteria documents, aquatic effects criteria documents, health assessments, reports on special health/exposure situations and both preliminary and full risk assessments dealing with the carcinogenic potential, as well as mutagenic toxicity.

1979 Accomplishments

During 1979, obligations totaled $7,033,700. This included $1,739,000 for in-house expenses and $5,294,700 for extramural expenses.

In April of 1979, the Agency established the Office of Health and Environmental Assessment (OHEA) to expand its health-related scientific assessment capability. OHEA combined the previously existing Criteria and Effects Assessment Program for Air Quality and the Carcinogen Assessment Group (CAG) with new programs in criteria and effects assessment for water quality, reproductive effects risk assessment and exposure assessment.

The Carcinogen Assessment Group conducted risk assessments on potential carcinogens for the major Agency regulatory offices. Included were assessments for 2,4,5-Triclorophenol, cresols, lindane, etc. The risk assessments for 2,4,5-T and lindane led respectively, to an emergency suspension and limited usage restrictions. The Group has also reviewed assessments for other Agency program offices and acted in a health policy advisory capacity to the Agency.

The Reproductive Effects Assessment Group drafted and circulated within EPA an initial set of guidelines and procedures for conducting risk analysis of mutagenic toxicity. After review and possible revision these guidelines will be adopted for agencywide usage.

An agencywide work group was convened to assist in the development of guidelines and methodologies for exposure assessment to coincide with the establishment of the Exposure Assessment Group. The development of these guidelines for agencywide use serves as a quality control mechanism for the Agency and will enhance uniformity and consistency in the application of scientific information for exposure analysis.

The Environmental Criteria and Assessment Office which supports the Agency's air regulatory program issued an air quality criteria document on carbon monoxide. This report is required under Section 109 of the Clean Air Act.

The Environmental Criteria and Assessment Office supporting the water and hazardous materials regulatory program issued draft water quality criteria for the 65 NRDC consent decree water pollutants. The office also started the evaluation of public comments on these criteria.

1980 Program

In 1980, the Agency has allocated a total of $5,116,000 to this program, of which $3,653,800 is for salaries and expenses and $1,462,200 is for extramural purposes.

The Carcinogen Assessment Group will provide assistance to virtually every regulatory office within the Agency. It will perform a combination review or new risk analysis for the pesticides program for 18 potential carcinogens and testify at the Science Advisory Panel public hearings on those pesticides reviewed. The Group will provide the air program with 45 preliminary risk assessments and eight full summary risk assessments and will review five oncogenic risk evaluations for the maximum contaminant level program in the drinking water program. The Carcinogen Assessment Group will also review for the Toxic Substances Office three premanufacturing risk assessments and two assessments for existing chemicals. Two special assessments will be developed to address pressing carcinogenic issues for the regions and/or Office of General Counsel. The specific pollutants to be evaluated will be provided by the program offices to address their most pressing needs.

The Reproductive Effects Assessment Group will finalize the develoment of Agency guidelines and procedures for conducting risk analyses of mutagenic toxicity which was initiated in 1979 and will also review 8 mutagenicity evaluations prepared by regulatory offices within the Agency.

The Exposure Assessment Group will continue the development of guidelines for conducting exposure analyses as well as review up to three exposure situations which have been proposed by the regulatory offices.

The Environmental Criteria and Assessment Office (air) will complete two air criterion reports on sulfur oxides and nitrogen oxides, eight health assessments documents on arsenic, asbestos, methylene chloride, fluorocarbon 113, trichloroethylene, methyl chloroform, acrylonitrile and vinylidene chloride, and one special report on acid rain.

The Environmental Criteria and Assessment Office (water) will complete the final criteria documents for the 65 water pollutants which were in public comment phase in 1979. They will also prepare 113 summary health effects reports in support of the unexpected needs of the Agency's solid waste program. Health summaries will also be prepared for 11 301g pollutants to address Agency enforcement needs in developing scientific criteria for waste permit waivers. Activity will be initiated to develop water quality criteria for eight new pollutants.

1980 Explanation of Change from Budget Estimate

The net increase of $17,000 results from several actions. An increase of $100,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and resulted in a decrease of $7,100. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $76,400 to this activity.

1981 Plan

The Agency requests a total of $5,231,600 and 66 permanent workyears for development of scientific criteria and the assessment of health effects. Approximately $2,114,200 is for extramural purposes and $3,117,400 for the Salaries and Expenses appropriation. These figures represent an increase of $652,000 and a decrease of $536,400, respectively. The net increase of $115,600 will be used to provide additional funds for the expansion of reproductive effects assessment acitivities.

The Carcinogen Assessment Group will operate at a level similar to 1980 with a moderate shift in emphasis from performing risk assessments to the review and oversight of assessments performed elsewhere in the Agency. At the request of the pesticides program, the Group will perform a combination review or new risk analysis for eight potential carcinogens, perform pre-Rebuttable Presumption Against Registration (pre-RPAR) and rebuttal reviews for five potential carcinogens, and prepare pathological slide reviews for three. The Group will provide the air program with 45 Type I assessments for eight potential carcinogens, develop summary risk assessments for eight water pollutants identified by the water office, and review five oncogenic risk evaluations for the maximum contaminant level drinking water program. Three premanufacturing risk assessments and two assessments for existing chemicals will be reviewed for the toxic substances office. Two special assessments will be developed for the Regions and/or Office of General Counsel.

The Reproductive Effects Assessment Group will continue to develop and refine methodology and policy for the evaluation of mutagenic risk, initially drafted in the latter part of 1979. The Group will perform eight mutagenicity evaluations: three for pesticide programs, three for air programs, and two for the water quality criteria program. The Group will also initiate the development of guidelines for teratogenicity.

The Exposure Assessment Group will develop second generation methodology and guidelines for conducting exposure analyses. Since the use of exposure data is often a key factor in influencing the outcome of the Agency's risk assessments and subsequent regulatory decisions, the first programmatic goal is to achieve a uniform approach to exposure analysis through the development of agencywide guidelines. In addition to developing these guidelines and providing technical consultation to the program offices, the Exposure Assessment Group will review two to three exposure situations which have been prepared by the regulatory offices.

The Environmental Criteria and Assessment Office (air) will operate at a level similar to that of 1980, completing two health assessments and three hazardous pollutant assessments begun in 1980. Work will be initiated on five new hazardous pollutant assessments, two new criteria reports, and two special reports on background issues concerning air quality problems.

The Environmental Criteria and Assessment Office (water) will complete the revision of eight water quality criteria documents begun in 1980 and begin development of water quality criteria for eight new pollutants. These documents will include assessments of both human health effects and aquatic effects. The office also expects to prepare health summaries to support program needs in the hazardous meterials program.

INTERDISCIPLINARY

Anticipatory Research

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Salaries and Expenses...	$3,143	$9,425	$5,189	$3,433	-$1,756
Research and Development.....	6,014	7,458	9,550	11,312	+1,762
Total.....	9,157	16,883	14,739	14,745	+6
Permanent Positions.....	69	85	78	58	-20
Full-time Equivalency...	89	118	114	81	-33

Budget Request

The Agency requests a total of $14,745,200 and 58 permanent workyears for 1981, an increase of $5,800 and a decrease of 20 permanent workyears from 1980. Included in this total is $3,433,200 for the Salaries and Expenses appropriation and $11,312,000 for extramural purposes under the Research and Development appropriation, with a decrease of $1,756,100, and a $1,761,900 increase respectively. The decrease in the Salaries and Expenses appropriation reflects the transfer of 20 permanent workyears from anticipatory research to other Agency programs. As a result, some freshwater fate studies, marine science and cancer research will be conducted extramurally; this change is reflected by the increase in the Research and Development appropriation.

Program Description

The National Academy of Sciences and the Office of Technology Assessment have previously expressed concern over the lack of long-term fundamental and anticipatory research in EPA. In addition, Public Law 95-155, Section 6(b) of the Research and Development Act of 1978 contains a congressional request for EPA to examine alternative approaches for conducting long-term environmental research, recognizing the need to insulate such activities from the Agency's day-to-day regulatory pressures. The anticipatory research program was initiated as the key mechanism by which the Agency addresses these concerns and takes action. The program is designed to give EPA an opportunity both to get ahead of problems and to improve the basic quality of environmental science. To achieve these ends, the program was organized in 1979 into three components with the following purposes:

The Center Support Research Program provides long-term support for exploratory research in key areas in regard to EPA's mission. Centers and their programs will have a multimedia orientation to supplement EPA's research capability, and will serve as a resource to all EPA laboratories whose activities are related to the Center objectives. The intent of EPA in employing the Center mechanism is to integrate and build upon the expertise and resources of existing institutions. Support for only moderate increases in staff facilities and equipment is provided.

The Innovative Research Program provides opportunities to individual scientists within EPA and the academic community to propose relevant research with long-range impacts or applicability. This component of the program facilitates a "bottom-up" planning approach for identifying fundamental and long-term research needs as related to EPA's overall mission.

The Strategic Assessment and Special Studies provides research and development planning information on future environmental trends and problems. Activities include: (1) Producing an annual Environmental Outlook report intended to provide a comprehensive overview of the environmental future; (2) Conducting small-scale mini-assessments of future environmental concerns to determine whether they are likely to become problems in the future; and (3) Developing a system of environmental indicators and indices for detecting and measuring changes in environmental quality and establishing outreach mechanisms for tapping both expert knowledge and public perceptions.

In addition, special studies are conducted (a) on problems that have been identified, but which require further exploratory research and (b) in order to produce information on the environmental futures of a particular region, industry, economic sector, or resource. Current activities of this component are aimed at: (1) understanding the contribution of environmental carcinogens in all media to the incidence of cancer in the general population; (2) conducting a national assessment of the problems associated with acid rain; (3) developing methodologies for assessing environmental benefits of pollution control activities; and (4) exploring the utility of bioindicators as a forecasting tool in the monitoring of pollution trends.

1979 Accomplishments

During 1979, obligations totaled $9,156,800. Included in this total are $3,142,700 for salaries and expenses and $6,014,100 for extramural research activities. Specific accomplishments include the following:

Center Support Research Program--Three institutional centers were established to conduct long-term exploratory research. Their activities are detailed below:

- Epidemiology Research Center - Located at the University of Pittsburgh, the center is responsible for fundamental research to develop new methodologies and improved statistical techniques. The Center also explores potential correlations between environmental pollutants and diseases such as cancer, emphysema, and hypertension. The center is intended to enhance EPA's capability to analyze the increasingly complex data and long-term problems of pollution impacts on man.

- Advanced Control Technology Research Center - Located at the University of Illinois, Urbana, this Center will focus on developing an understanding of the basic chemical, biological, and physical processes which limit our ability to improve our treatment techniques. This center provides stable support for the long-term exploratory research necessary to produce basic knowledge to improve the effectiveness of future treatment technologies.

- Groundwater Research Center - This center was established at a consortium of universities: the University of Oklahoma State University, and Rice University. This center will support fundamental and long-term research on ground water characteristics in soils and subsoils profiles. The center works in conjunction with EPA's Robert S. Kerr Environmental Research Laboratory to examine the Garber-Wellington aquifer in Oklahoma.

Innovative Research Program -- The inhouse innovative research program was initiated in 1979. The program allowed for the funding of six unique, exploratory research projects including a study to measure the mobilization of soil components by acid precipitation and an effort to develop a new infrared spectroscopic method for analysis of trace hazardous air pollutants. Participation in the highly competitive project selection process included eleven of the Agency's research laboratories.

Strategic Assessment and Special Studies -- Prepared the Environmental Outlook forecast and assessment of the environmental outlook from the present to the year 2000. The Environmental Outlook was used to support preparation of the Research Outlook 1980 report. In addition, special studies were conducted in the following areas:

Acid Rain: The anticipatory research acid rain program served as an integral component of the President's acid rain program. During 1979, the program:

- Expanded studies of the environmental effects of acid rain on aquatic and terrestrial ecosystems in the northeast United States; the effects of acid rain on the growth yield and quality of 21 economically important crops were studied under both laboratory and field conditions.

- Initiated an exploratory study of the impact of acid rain on the lakes of the Boundary Water Canoe Area.

- Established management system of storage and retrieval of acid deposition data for all Federal monitoring networks.

- Completed analysis of available EPA/National Oceanic and Atmospheric Administration/World Meterological Organization monitoring data which have contributed to recently initiated efforts to assess the global impacts of acid rain.

- Applied Euromap transport model to the study of sulfate deposition in the eastern United States and Canada.

Biomonitoring: Mussel Watch, a program to monitor chemical residues in the biota of the Nation's coastal waters:

- Completed data collection for two additional years; analysis of the data will be completed in early 1980.

- Completed facilities for storing environmental specimens at the National Bureau of Standards for a pilot specimen banking research effort.

Cancer:

- Developed a county level data base containing air quality information cancer mortality and morbidity rates, socio-economic, demographic, meterologic, and migration information for the continental United States, for the analysis of the associations between cancer incidence and environmental quality.

- Completed a study which compares the cancer mortality rates in counties where production of certain organic chemicals occurs with the rates found in counties where such production does not exist.

- Identified a geographical site where intensive field study could result in furthering our understanding of the relationship between cancer incidence in the general population and exposures to environmental carcinogens.

- Developed methods for utilizing certain species of fish to monitor, biologically, the presence of carcinogens in the marine environment by actual observation of cellular proliferation disorders in these species.

Environmental Benefits:

- Produced an interim report on the national health benefits of reduced air pollution and the overall benefits of such reductions in the Los Angeles Basin. This report suggests (1) that the health quantifiable benefits resulting from cleaning up air pollution particles are greater than the costs of controlling all air pollutants from stationary sources, (2) that the likely economic benefits of air quality improvements are much greater than previously thought, (3) that many such economic benefits previously thought non-measureable can be measured, and (4) that aesthetic benefits, such as improved visibility, and reduced illness dominate other air pollution economic control benefits as opposed to previous emphasis on reduced mortality.

1980 Program

In 1980, the Agency has allocated a total of $14,739,400 to this program, of which $5,189,300 is for the Salaries and Expenses appropriation and $9,550,100 for extramural purposes under the Research and Development appropriation.

Center Support Program: In 1980 four additional Centers will be established in the following areas:

- Ultimate Waste Elimination Research Center - Present control methods result in generation of solid or liquid wastes which are disposed of by land application, burial, or well injection. These practices provide only temporary storage with great potential for future contamination of air and water. This center will focus on process changes leading to clean technologies and innovative recycle-reuse methods.

- Intermedia Transport Research Center - This center will focus on defining the chemical and physical processes which govern the exchange of pollutants at the air-land and air-water interfaces. Emphasis will be on the movement of toxic chemicals and trace elements which are little understood, and on determining how temperature, humidity, vegetation growth, and other factors influence the pollutant deposition processes; and on determining whether chemicals purposefully placed on the land by man are entrained into the atmosphere.

- Ecosystems Research Center -- Decisions on protecting the environment have have been based largely upon data from individual biological species or individual physical/chemical processes. Usually, little or no pertinent information has been available from the level of the biological community or ecosystem. Among the key questions to be addressed are: (a) Are there systems level functions which are critical to the maintenance of desirable ecosystems or communities? (b) Can an ecosystem's "condition" be usefully estimated by describing only its physical and chemical characteristics? (c) Are there inherently stable or unstable states for ecosystems relating to their value for man?

- Marine Sciences Research Center - This center will address effective measurement and assessment of the health of marine ecosystems and the significant sources, pathways and processes which influence exposure of man or marine ecosystems to toxic substances. Two of the key questions which the center will address are: (1) How can we effectively measure and assess the state of health of marine ecosystems that we believe are under stress? (2) What are the significant sources, pathways and processes influencing exposure of man or marine ecosystems to toxic substances?

Innovative Research -- The 1980 program will initiate four unique research projects including an effort to develop an innovative means for complete reuse of the paper industry process water, and a study of the physical-chemical properties of estuaries which affect the distribution of suspended matter. Proposals have been received from ten of the Agency's research laboratories for consideration in the highly competitive selection process. In 1980, the program will:

- Continue the development and testing of microcosms for the freshwater and marine environments. New efforts will be initiated to test the utility of deployable sensors for freshwater and marine environmental monitoring.

- Initiate the extramural component of the innovative program. Several areas of research have been selected as themes for this first year's effort, including efforts to explore the effects of pollution on terrestrial wildlife, studies of the impact of pollution on the aged, and investigation of the potential environmental risk of the rapidly developing biotechnology industry. A workshop of key experts will be sponsored in 1980 to develop the research agenda necessary to begin elucidating the environmental hazards posed by potential applications of applied genetic technology.

Strategic Assessment and Special Studies: In 1980, the program will:

- Complete a survey of the current state-of-the-art for environmental forecasting. This survey will provide a framework for improvement of such capabilities.

- Complete a major review and revision of current environmental data and assessment tools to improve environmental outlook reports.

- Conduct 10-12 mini-assessments of selected future environmental concerns such as biotechnologies, latent problems (i.e., hidden problems such as Love Canal), natural hazards, and materials substitution to determine if further research is warranted;

- Complete projects initiated in 1979 by the National Academy of Sciences and Citizens Futures Groups in Iowa and Illinois to provide EPA expert advice and citizen perceptions about future environmental problems.

- Complete an integrated environmental assessment of Regions IV and VI.

Acid Rain: An integrated 5-year research plan for EPA's acid rain program will be published. Other 1980 activities include:

- Available methods for analyzing dry deposition will be compared, protocols for strict quality assurance will be developed for the networks involved with the historical water supply study, and studies of deposition will be expanded to other parts of the country;

- The Euromap transport model will be expanded to examine new energy scenarios with emphasis placed on nitric acid.

- Maps of sensitive areas will be expanded and improved, the Boundary Waters Canoe Area Study to include the Wisconsin area, the scope of acid rain upon the drinking water systems and impacts of nitric acid on important crops.

Biomonitoring:

- The Mussel Watch Program will monitor a limited number of geographical sites identified as being "hotspot areas", to fully characterize seasonal monthly variations. In addition, pilot biomonitoring efforts will be initiated on a limited geographical basis for both the fresh-water and the terrestrial media.

Cancer:

- An extensive integrated exposure assessment study will be conducted within a geographic area known to exhibit a high incidence of cancer mortality. This stage of the cancer field program will be aimed at determining and defining the existence of potential exposure gradients to environmental carcinogens within the area. A second field effort will be continued in the Houston area and will study cancer incidence and the possible associations with the area's chronic air pollution problem.

Dry Scrubbers:

- A complete 30-day evaluation of coal-limestone pellets will be undertaken. The pellets could substantially reduce the environmental control costs associated with industrial coal usage. The spray dryer sulphur dioxide control process, at pilot and full scale, will be evaluated. This process offers a near term technology to lower the sulphur dioxide control technology costs. Finally, small scale testing of simultaneous dry sulfur dioxide and nitrogen oxides control based upon simultaneous coal-limestone combustion will be initiated.

Environmental Benefits:

- Publication of the final results of a 3-year study of air pollution benefits is planned. This study will include a comparison of the economic costs and benefits of air pollution control in the Los Angeles Basin and the results of further research using a microepidemiological approach, to determine the economic benefits of reducing illness due to air pollution.

- Major reports are expected on the economic benefits of water pollution control, improved visibility in the Western National Parks, and on improved air quality in San Francisco.

1980 Explanation of Change from Budget Estimate

The net decrease of $2,143,600 results from several actions. An increase of $145,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs, $1 million ADP costs and anticipatory research resulted in a decrease of $5,500; $6,300 and $2 million, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $197,300 to this activity.

A transfer of $50,000 was made to the pesticides media and $30,000 to the toxic substances media to cover personnel reassignments of individuals with special capabilities as a result of the abolishment of the Criteria Development and Special Studies Division.

1981 Plan

The Agency requests a total of $14,745,200 and 58 permanent workyears for this program, of which $3,433,200 is for the Salaries and Expenses appropriation and $11,312,000 for extramural purposes under the Research and Development appropriation. The net increase of $5,800 reflects the transfer of 20 permanent workyears to other programs and the shift of their related dollars to the extramural component of the anticipatory program. Expected activities in 1981 include:

Research Center Support Program

- The program will continue to support the seven research centers established in 1979 and 1980. No new centers are planned. Research will stress stable exploratory projects and the mutually beneficial exchange of EPA and academic, scientific and technical personnel.

- The Groundwater Center will shift its research activities from a regional emphasis, i.e. the Garber-Wellington Aquifer in Oklahoma, to the generic concerns for groundwater resources across the country.

- The Epidemiology Center will initiate long-term cohort studies of chronic disease development and the Advance Control Technology Center will be applying fundamental knowledge gained in the laboratory to the more difficult and persistent pollution control problems, such as removal of low molecular weight organic toxicants from drinking water.

- The Waste Elimination Research Center will begin scaled-up demonstrations of exploratory production, recycle, and reuse process.

- The Intermedia Transport Research Center will continue efforts initiated in 1980 to further understand air/land and air/water interface interactions.

- The Integrated Ecosystem Research Center will be field testing exploratory, simplified ecosystems models.

Innovative Research Program

- In-house and extramural efforts will be expanded to support unique ideas for addressing long-term problems. This program is designed to take advantage of the vast number of talented researchers, both within the Agency and in the academic community. Results of previous projects and workshops conducted in 1980 to define exploratory research areas will be employed to determine specific projects to be undertaken. Current interests for exploratory projects are: (1) spearheading efforts to identify and quantify behavioral toxic effects; (2) assessing the effect of toxic chemicals on our Nation's soils; and (3) investigating the potential environmental problems of disposing of the sulfur extracted by coal cleaning processes and coal-burning scrubbers.

Strategic Assessment and Special Studies:

- Efforts to develop a system of environmental indicators and indices for projecting and evaluating future environmental changes will be continued.

- An Environmental Outlook 1981 report to provide information on the environmental future will be produced.

- Mini-assessment problem identification and definition reports will be produced.

- Mini-assessments of toxics identified by the environmental outlook activity will be initiated.

- Outreach activities for obtaining expert opinions and citizens perceptions about future environmental problems will be continued.

In addition, special studies will continue in:

Acid Rain

- The 1981 program will place emphasis on the effects of both the nitric and sulfuric components of acid rain on important crops.

- The northeastern section of the United States will be subjected to extensive study as a highly sensitive and impacted area. Here, studies will investigate the effects of acid rain on this region's aquatic, forest, and agricultural ecosystems.

Biomonitoring

- A fourth nationwide collection and analysis effort will be conducted in the Mussel Watch Program. This fourth collection effort will be aimed at discovering any trends in the marine concentrations of compounds found during quantitative analysis. The pilot freshwater and terrestrial biomonitoring efforts will be extended to nationwide coverage, thus providing a means for "hotspots" identification in these media.

Cancer

- The cancer field program will enter a phase in which studies will be conducted to assess the exposure of individuals in a community to environmental carcinogens. This objective will be achieved by the use of personal atmospheric monitors, household tap water monitoring, personal activities modeling, body burdens analyses and other exploratory individual exposure assessment techniques. A comprehensive epidemiology case study will also be conducted in the area; due to the latency in the expression of the cancerous disease state, a retrospective exposure model will be employed to assess historical exposures of the population to carcinogens. Existing methods to monitor subtle health and biological changes resulting from environmental carcinogens will also be field tested.

Dry Scrubbers

- The spray dryer sulfur dioxide control program will conduct a test using high sulfur coals. This technology could be a low-cost alternative to conventional wet flue gas desulfurization processes.

Environmental Benefits

- The program will continue to emphasize the development and demonstration of new methodologies and data for determining the economic benefits of controlling air and water pollution. These methodologies and data will be used for both benefit-cost analysis of individual EPA regulatory decisions and comparisons of relative program level benefits. Particular emphasis will be placed on better methodologies and data for recreational and option value benefits for water pollution control.

60-531 O - 80 - 42

INTERDISCIPLINARY

Monitoring and Technical Support

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Technical Information:					
Salaries and Expenses	$1,766	$1,815	$2,590	$2,266	-324
Research and Development	1,501	752	...	390	+390
Environmental Work Force and Development:					
Salaries and Expenses	267	...	268	212	-56
Research and Development	2	...	...	...	...
Total:					
Salaries and Expenses	2,033	1,815	2,858	2,478	-380
Research and Development	1,503	752	...	390	+390
Grand Total	3,536	2,567	2,858	2,868	+10
Permanent Positions					
Technical Information	32	24	30	30	...
Environmental Work Force and Development	8	...	8	6	-2
Total	40	24	38	36	-2
Full-time Equivalency					
Technical Information	50	59	54	54	...
Environmental Work Force and Development	9	...	9	7	-2
Total	59	59	63	61	-2

Budget Request

The Agency requests a total of $2,867,300 and 36 permanent workyears for 1981, of which $2,477,300 is for the Salaries and Expenses appropriation and $390,000 for extramural purposes under the Research and Development appropriation. This is a decrease of $380,100 and a increase of $390,000, respectively. Included in the net increase of $9,900 is a decrease of $55,700 and 2 permanent workyears that will reduce activities in the environmental workforce program.

Program Description

The monitoring and technical support program is comprised of two components: the technical infomation program and the national workforce development program.

The technical information/technology transfer program provides the means by which information developed by EPA's research efforts is made available, in usable form, to those who need it both within the Agency and throughout the public and private sectors. This program manages and provides quality control over the publication and distribution of scientific, technical and executive summary documents. This program also provides a central source of information on EPA's research, and responds to information requests. Specialized publications and symposia are produced, at the request of the EPA Regions and program offices, and targeted at those audiences which must have this information in order to implement environmental regulations. The program also supports the congressionally-mandated Small Wastewater Flows Information Clearinghouse and the annual EPA Research Outlook (5-year plan) and Research Highlights reports. Finally, this program provides the management information systems and data control functions necessary to track EPA's 2,500 active research projects.

The national workforce development program provides/agencywide coordination and management overview of the Agency's environmental workforce development policies, program and activities with other Federal agencies (Department of Labor, Department of Education, National Science Foundation and the Tennessee Valley Authority). Training and educational assistance programs have been developed to aid State and local environmental agencies in meeting their workforce needs.

TECHNICAL INFORMATION

1979 Accomplishments

During 1979, obligations totaled $3,267,200. Included in this total was $1,765,700 for salaries and expenses and $1,501,500 for extramural activities. Specific accomplishments include the following.

In 1979, in response to Section 1040 of the Clean Water Act Amendments of 1977, a major new research grant was awarded to create and support the Small Wastewater Flows Information Clearinghouse. The Clearinghouse provides information on pollution control alternatives for rural areas. In addition, a system was established to collect, provide quality control for, and allow the automated retrieval of, detailed information on EPA's thousands of active research projects. This system, together with links between it and the EPA's other systems and links with EPA's 15 field laboratories, is building bridges between ORD's various operating units and assuring the timely and accurate flow of information. During 1979, this system has significantly improved the Agency's ability to respond to the rapidly changing information needs of the regulatory process.

The technical information program produced more tnar 20 specially tailored publications and manuals for its user community. More than 100,000 publication requests were fulfilled. Centralized tracking was imposed to control all conference and symposia funded by the Office of Research and Development. The Research Highlights, Research Outlook, Program Guide and Publications Bibliography were also produced, along with a manual on sludge control. Symposia on innovative/alternative municipal wastewater treatment and on industrial waste water pretreatment were conducted.

1980 Program

In 1980, the Agency has allocated a total of $2,589,400 to this program, all of which is for Salaries and Expenses.

In 1980, a major change will be implemented in the way EPA research information is managed. Under the new policy, the technical information program will function as a centralized technical communications service organization. Most of the products of EPA's research - from journal articles to executive summaries - will be available through one location. Quality control over, and distribution of, research information will be functions of the technical information program. Most of the specialized communications packages to be produced will be done at the request of, and funded by, EPA regulatory program offices, the Regions, and other user groups. A centralized capability will be maintained to assure the quality and cost-effectiveness of the design manuals, symposia, summary reports and other technology transfer activities used to communicate the latest technological information to State and local officials, environmental managers and the design/engineering community.

In addition to fulfilling such congressionally-mandated requirements as the Small Wastewater Flows Information Clearinghouse, the EPA Research Outlook (5-year plan) and Research Highlights, the Technical Information Program will produce a publications bibliography, a program guide, and several other reports and Research Summaries which will provide information on a wide range of EPA research activities in a succinct and useful format. Most of these activities will be supported by the Research Committees and program offices.

The ability of EPA to provide timely information on the status of its 2,500 active research projects will be further improved through closer linkages between the project tracking system and EPA's 15 research laboratories nationwide. An experiment will determine the feasibility of automated direct input of updated information into this system.

1980 Explanation of Change from Budget Estimate

The net increase of $22,400 results from several actions. An increase of $51,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $5,500. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $23,200 to this activity.

1981 Plan

The Agency requests a total of $2,655,000 and 30 permanent workyears for this program, of which $2,265,000 is for the Salaries and Expenses appropriation and $390,000 is for extramural activities under the Research and Development appropriation.

This program will continue to act as a service to the Agency's research and program offices, providing professional communications services on request and being reimbursed by the client offices for any extramural costs incurred. The technical information program assures the quality of, access to, and control over the research information produced by EPA.

The technical information program will continue to support the congressionally-mandated Small Wastewater Flows Information Clearinghouse and the EPA Research Outlook (5-year plan), Research Highlights, Program Guide and other overview documents. The program will build upon 1980 experience and complete efforts to link all of EPA's research facilities into a central research project status reporting system. Such a linkage will mark the final step in creating a mature project tracking system - an effort initiated in 1977. The system tracks resource status and program progress for EPA management and the ORD Research Committees.

ENVIRONMENTAL WORK FORCE DEVELOPMENT

1979 Accomplishments

During 1979, obligations totaled $268,200. Included in this total was $266,600 for salaries and expenses and $1,600 for extramural purposes. Specific accomplishments include the following:

- Completion of the National Environmental/Energy Workforce Assessment.
- Negotiation and implementation of seven interagency agreements designed to support employment and training programs for Senior Americans; Indians; disadvantaged and unemployed individuals.
- Chairing and providing staff support for the EPA Environmental Workforce Coordinating Committee.

1980 Program

In 1980, the Agency has allocated a total of $268,000 to this program, all for salaries and expenses. Specific outputs will include:

- Expansion of the Senior Environmental Employment Corps to 25 States.
- Completion of the Environmental State Agency Resource Guidebook.
- Establishment of a multiprogram center for environmental learning at a university.
- Completion of a community waste water treatment demonstration training project.
- Development of a program of Research Apprenticeships for Minority High School students.

1980 Explanation of Change from Budget Estimate

The net increase of $268,000 results from several actions. An increase of $10,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $700. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $4,700 to this activity.

A reprogramming of $262,700 was made due to the reorganization of the Environmental Workforce Coordination.

1981 Plan

The Agency requests a total of $212,300 and six permanent workyears, all under the Salaries and Expenses appropriation. This represents a decrease of $55,700 and two permanent workyears as a result of decreased emphasis on the assessment of Agency needs in certification for environmental occupations in radiation, hazardous waste management, noise and integrated pest management.

Major activities and outputs in 1981 will include:

- Providing Agency overview and a report on environmental workforce development activities.
- Providing staff support to the Assistant Administrator for Research and Development on environmental workforce issues and activities.
- Maintaining liaison with other Federal agencies on environmental training activities.
- Developing standardized methods to project future environmental workforce needs.
- Providing technical guidance to program and regional offices on external workforce resources, e.g., Senior Environmental Employment Corps.
- Conducting a national conference on Senior Environmental Employment Corps.
- Concluding interagency agreements with selected Federal agencies for training environmental workers.

INTERDISCIPLINARY

Environmental Impact Statements

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
EIS Review (Air):					
Salaries and Expenses...	$615	$453	$475	$504	+$29
EIS Review (Water):					
Salaries and Expenses...	1,301	1,364	1,430	1,330	-100
New Source EIS Preparation:					
Salaries and Expenses...	416	336	351	318	-33
Abatement, Control and Compliance.....	3,186	1,400	1,372	1,400	+28
Total:					
Salaries and Expenses...	2,332	2,153	2,256	2,152	-104
Abatement, Control and Compliance.....	3,186	1,400	1,372	1,400	+28
Grand Total.....	5,518	3,553	3,628	3,552	-76
Permanent Positions					
EIS Review (Air).....	18	17	18	18	...
EIS Review (Water).....	41	47	47	47	...
New Source EIS Preparation	13	12	12	12	...
Total.....	72	76	77	77	...
Full-time Equivalency					
EIS Review (Air).....	21	22	18	19	+1
EIS Review (Water).....	49	53	52	48	-4
New Source EIS Preparation	15	12	12	12	...
Total.....	85	87	82	79	-3

Budget Request

The Agency requests a total of $3,552,300 for 1981, a decrease of $75,700 from 1980. Included in this total is $2,152,300 for Salaries and Expenses and $1,400,000 for Abatement, Control and Compliance, representing a decrease of $104,100 and an increase of $28,400 respectively, from 1980. During 1981, program activities will focus on the review of other Federal agency environmental impact statements (EISs), regulations and other proposed actions, and the preparation of new source EISs and findings of no significant impact.

Program Description

Section 309 of the Clean Air Act requires the Agency to review and comment in writing on the environmental impact of any matter contained in any legislation, proposed regulation, or EIS of other Federal agencies. The review activity of EPA consists of reviews of other Federal agency EISs and actions, pre-EIS liaison, draft EIS review, draft EIS follow-up, final EISs review, final EIS follow-up, technical assistance, and referrals to the Council on Environmental Quality.

The National Environmental Policy Act (NEPA) requires that all agencies of the Federal Government prepare detailed EISs on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. The new source NEPA compliance activity at EPA includes complete environmental reviews, preparation of either an EIS or finding of no significant impact, evaluation of alternatives to proposed actions, and mitigation measures to prevent adverse environmental impacts.

EIS REVIEW (AIR)

1979 Accomplishments

Increased efforts were directed toward improving the effectiveness and timeliness of reviews. Major emphasis was placed on EPA assistance to other Federal agencies in order to integrate effective environmental planning with basic programmatic decision-making processes and prevent costly and avoidable error in the planning and execution of public projects. Emphasis was also placed on predraft impact statement liaison (scoping) as required by the new Council on Environmental Quality regulations. EIS review guidelines for nuclear power plants and forest and coastal zone management plans were drafted. Approximately 1,500 draft and final EISs as well as 100 proposed Federal agency regulations and other proposed Federal actions, were reviewed for impacts on all media.

1980 Program

In 1980, the Agency has allocated a total of $475,300 to this program, all of which is for Salaries and Expenses.

No significant change in the EIS review activity from the current year is anticipated. The major emphasis will be on scoping for early identification of significant environmental issues. It is anticipated that approximately the same number of EISs, proposed Federal agency regulations, and other proposed Federal actions will be reviewed in 1980 as in 1979. EPA's EIS/309 review manual will be revised to conform to the new Council on Environmental Quality's (CEQ) regulations. Work will begin on revising the draft EIS review guidelines on nuclear power plants to conform to the new CEQ regulations and Nuclear Regulatory Commission's NEPA regulations. Work will also begin on revising EIS review guidelines for forest and coastal zone management plans and preparing a staff educational program on these guidelines.

1980 Explanation of Changes from Budget Estimate

The net increase of $22,000 results from several actions. An increase of $18,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,500 to this activity. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $34,000 to this activity.

Regional office reprogrammings resulted in transfers between media with a net increase to this activity of $76,300; the media contributing to this net increase are drinking water ($5,600); water quality ($41,700), toxic substances ($11,500), interdisciplinary ($20,200), and air (-$2,700). Finally, a transfer was made within the regions to air stationary source enforcement, $104,700, to reflect the transfer of the Federal facilities monitoring and compliance function which is more appropriately identified with enforcement activities.

1981 Plan

The Agency requests a total of $504,300 for this program, an increase of $29,000, all of which is for Salaries and Expenses.

The major emphasis will continue to be the reviews and scoping. Technical guidelines on nuclear power plants will be finalized.

EIS REVIEW (WATER)

1979 Accomplishments

Increased efforts were directed toward improving the effectiveness and timeliness of reviews. Major emphasis was placed on EPA assistance to other Federal agencies in order to integrate effective environmental planning with basic programmatic decision-making processes and prevent costly and avoidable error in the planning and execution of public projects. Emphasis was also placed on predraft impact statement liaison (scoping) as required by the new Council on Environmental Quality regulations. EIS review guidelines for nuclear power plants, and forest and coastal zone management plans were drafted. Approximately 1,500 draft and final EISs, as well as 100 proposed Federal agency regulations and other proposed Federal actions, were reviewed for impacts on all media.

1980 Program

In 1980, the Agency has allocated a total of $1,429,700 to this program, all of which is for Salaries and Expenses.

No significant change in the EIS review activity from 1979 is anticipated. The major emphasis will be on scoping for early identification of significant environmental issues. It is anticipated that approximately the same number of EISs, proposed Federal agency regulations, and other proposed Federal actions will be reviewed as in 1979. EPA's EIS/309 review manual will be revised to conform to the new Council on Environmental Quality's (CEQ) regulations. Work will begin on revising the draft EIS review guidelines on nuclear power plants to conform to the new CEQ regulations and Nuclear Regulatory Commission's NEPA regulations. Work will also begin on revising EIS review guidelines for forest and coastal zone management plans and preparing a staff educational program on these guidelines.

1980 Explanation of Changes from Budget Estimate

The net increase of $65,700 results from several actions. An increase of $58,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $5,600 and $100, respectively. An overall reprogramming throught the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $63,500 to this activity.

Regional office reprogrammings resulted in transfers between media with a net increase to this activity of $32,100; the media contributing to this net increase are air ($20,000), water quality ($20,000), toxic substances ($10,100), interdisciplinary (-$16,500), and management and support (-$1,500). Finally, a transfer was made within the regions to water quality enforcement to reflect the transfer of the Federal facilities monitoring and compliance function which is more appropriately identified with enforcement activities, $82,700.

1981 Plan

The Agency requests a total of $1,330,000 for this program, a decrease of $99,700, all of which is for Salaries and Expenses.

The major emphasis will continue to be the reviews and scoping. Technical guidelines on nuclear power plants will be finalized.

NEW SOURCE EIS PREPARATION

1979 Accomplishments

Almost $3.2 million of the 1979 resources was used for extramural funding. A total of 16 EISs and environmental studies was initiated on new source water projects. Technical guidelines on four industries were finalized and two industrial guidelines were drafted. EPA's new National Environmental Policy Act (NEPA) regulations implementing the new Council on Environmental Quality's (CEQ) regulations were proposed in the Federal Register in June 1979. Two areawide studies on coal mining and energy-related industries were completed. Seven areawide studies on surface coal mining were initiated to determine the need for either site specific EISs or special National Pollutant Discharge System (NPDES) permits as outlined under the proposed memorandum of understanding between EPA and the Department of Interior, Office of Surface Mining.

1980 Program

In 1980, the Agency has allocated a total of $1,723,000 to this program, of which $351,400 is for Salaries and Expenses and $1,371,600 is for extramural purposes under the Abatement, Control and Compliance appropriation.

One or two States may assume the NPDES program; however, they are not expected to be States with any significant new source construction activity. Technical guidelines on six industries will be finalized and five other drafted. The memorandum of understanding between EPA and Department of Interior, Office of Surface Mining, determining whether site specific or areawide NPDES permits may be issued on surface coal mining will be signed. Technical guidelines for assessing induced growth of new source industries will be drafted. Approximately 12 EISs and environmental studies are expected to be initiated in 1980.

1980 Explanation of Changes from Budget Estimate

The net decrease of $13,000 results from several actions. An increase of $13,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $1,400 and $1,600, respectively. An overall reprogramming throughout the Agency to provide sufficent workyears resulted in a decrease of $22,600 to this activity.

Regional office reprogrammings resulted in transfers between media with a net decrease of $600 to this activity; the media contributing to this net decrease are air (-$3,700), water quality ($300), and toxic substances ($2,800).

1981 Plan

The Agency requests a total of $1,718,000 for this program, of which $318,000 is for the Salaries and Expenses appropriation and $1,400,000 for the Abatement, Control and Compliance appropriation.

Approximately the same number of EISs and environmental studies are expected to be initiated as in 1980. Technical guidelines on five industries will be finalized. Technical guidelines for assessing induced growth of new source industries will be finalized.

INTERDISCIPLINARY

Energy Permitting and Review

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Energy Review and Permitting:					
Salaries and Expenses..	...	...	...	$694	+$694
Abatement, Control and Compliance.....	...	...	...	150	+150
Grand Total.....	...	...	...	844	+844
Permanent Positions.....	...	...	...	13	+13
Full-time Equivalency....	...	...	...	26	+26

Budget Request

The Agency requests $844,200 and 13 permanent work-years for the new budget subactivity of energy-related environmental review and permitting. Included in this total are $694,200 for Salaries and Expenses and $150,000 for Abatement, Control and Compliance.

Program Description

EPA has developed the energy review and permitting program in response to the President's plan for accelerated energy development. The Agency's regional offices have already reported an increase in the number of smaller energy-related facilities, such as coal mines and power plants. Any of these new energy facilities may require EPA issued permits governing air emissions or effluent discharges, with accompanying modelling and monitoring requirements. The Agency may also be required to prepare or review an environmental impact statement for any of these new facilities.

The Agency expects the rate of energy development to further accelerate in the next several years, as synthetic fuels are commercialized. Not only will EPA have to process more permit applications, but it will have to comply with the accelerated time-schedules imposed by the Energy Mobilization Board. EPA's job will be complicated by the fact that environmental effects of synthetic fuels are not well known.

The Agency's regional offices will use the resources in this program element for various energy-related activities. The Agency will use some of the resources in this program element to fund an increase in permit issuance for PSD, NPDES, and RCRA, and related activities such as making best available control technology determinations and reviewing monitoring systems.

Some of the resources will be devoted to preparation and review of EISs. In order to expedite the environmental review process, the Agency intends to participate in the early stages of the preparation of environmental impact statements by other agencies. EPA's cooperative role should aid in early identification and resolution of problems that could otherwise delay permit issuance.

Currently, resources for these kinds of activities are included in several program elements. However, the Agency cannot predict at this time which offices in which regions will require additional resources for energy review and permitting. Therefore, in order to provide EPA management maximum flexibility, these activities have been grouped together in this new program element.

1979 Accomplishments

During 1979, the Agency began work on consolidating the various permitting and environmental review requirements applicable to energy facilities. No resources were specifically identified in this activity.

1980 Program

In 1980, the Agency will continue to examine ways in which to expedite environmental review and permitting for energy projects. Special priority will be placed on processing energy project permit applications. No resources are specifically identified in this activity.

1981 Plan

In 1981, the Agency expects to handle energy project permits and environmental reviews in accordance with the requirements of the Energy Mobilization Board. The Agency will probably have the lead role in preparing and following up on EISs for five critical energy facilities, and have a cooperating role in the preparation of 35 EISs. The cooperative role taken by EPA to expedite the environmental review process is expected to account for a majority of the resources requested in this program element. Additionally, the regional offices will provide assistance in the scoping phase of any energy EIS to expedite issue identification and resolution.

Because of the many uncertainties connected with the accelerated energy development, the Agency cannot specify at this time how the regions will best be able to use these resources to expedite permit issuances. The resources in this program element may be used for reviewing monitoring systems, making best available technology determinations, assessing the impact of emissions and effluents, or providing technical assistance to State and local governments.

A major feature of EPA's permitting strategy for synthetic fuels will be the formation of a special technical assistance team. This team will consist of experts from relevant disciplines (e.g., engineers, modelling specialists) drawn as necessary from any EPA office, to supplement the limited synthetic fuels expertise available in most EPA regional offices. This specialized team is expected to increase the quality of work performed on each project and yield economies of operation to the Agency.

TOXIC SUBSTANCES

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Salaries and Expenses.....	$18,376	$33,501	$29,553	$33,570	+$4,017	
Research and Development..	12,848	24,650	19,892	26,216	+6,324	
Abatement, Control and Compliance.....	30,307	45,165	45,201	46,216	+1,015	
Total.....	$61,531	$103,316	$94,646	$106,002	+$11,356	
Permanent Workyears.....	377	723	657	743	+86	
Full-time Equivalency.....	474	769	765	854	+89	
Outlays.....	$47,278	$70,400	$79,200	$90,200	+$11,000	
Authorization Levels.....	30,482	*	*	*		

* Authorization pending.

PROGRAM HIGHLIGHTS

Health and Ecological Effects:						TS-9
Salaries and Expenses...	$2,504	$7,305	$6,475	$8,371	+$1,896	
Research and Development	11,542	22,092	17,138	23,505	+6,367	
Industrial Processes:						TS-25
Salaries and Expenses...	260	642	414	614	+200	
Research and Development	200	1,100	1,234	1,158	-76	
Monitoring and Technical Support:						TS-28
Salaries and Expenses...	1,210	1,380	1,168	1,694	+526	
Research and Development	1,106	1,450	1,520	1,553	+33	
Total:						
Salaries and Expenses...	3,974	9,327	8,057	10,679	+2,622	
Research and Development	12,848	24,650	19,892	26,216	+6,324	
Total, Research and Development Program.....	16,822	33,977	27,949	36,895	+8,946	
Toxic Substances Strategies						TS-34
Salaries and Expenses...	12,148	21,403	19,041	20,180	+1,139	
Abatement, Control and Compliance.....	29,302	44,140	43,712	43,735	+23	
Total, Abatement and Control Program.....	41,450	65,543	62,753	63,915	+1,162	

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Toxic Substances Enforcement:						TS-46
salaries and Expenses...	2,254	2,771	2,455	2,711	+256	
Abatement, Control and Compliance.....	1,005	1,025	1,489	2,481	+992	
Total, Enforcement Program	3,259	3,796	3,944	5,192	+1,248	
Permanent Positions						
Health and Ecological Effects.....	45	59	65	118	+53	TS-9
Industrial Processes.....	8	12	11	11	...	TS-25
Monitoring and Technical Support.....	19	21	22	26	+4	TS-28
Total, Research and Development Program.....	72	92	98	155	+57	
Toxic Substances Strategies, Total Abatement and Control Program.....	313	553	486	502	+16	TS-34
Toxic Substances Enforcement, Total Enforcement Program	48	78	73	86	+13	TS-46
Full-time Equivalency						
Health and Ecological Effects.....	58	94	85	137	+52	TS-9
Industrial Processes.....	7	14	14	14	...	TS-25
Monitoring and Technical Support.....	30	29	29	33	+4	TS-28
Total, Research and Development Program.....	95	137	128	184	+56	
Toxic Substances Strategies, Total Abatement and Control Program.....	309	550	555	575	+20	TS-34
Toxic Substances Enforcement, Total Enforcement Program	70	82	82	95	+13	TS-46

OVERVIEW AND STRATEGY

The Toxic Substances Control Act (TSCA) establishes a program with the objectives of insuring that adequate data are developed with respect to the effects of chemical substances and mixtures on health and the environment and that those chemicals which present an unreasonable risk of injury to health or the environment are regulated to reduce that risk. The Act's coverage is broad, encompassing nearly 47,000 chemicals currently in commerce, with several hundred additional new chemicals introduced each year. About 115,000 manufacturers and processors are subject to the Act.

The major programs EPA must develop and implement to carry out the provisions of the Act are those to: (a) require testing of chemicals and submission of reports of existing information by industry and review these and other data to determine chemical hazards; (b) review and act on new chemical and significant new use notifications by industry and control the manufacturing, processing, distribution, use, and disposal of existing chemicals that pose unreasonable risks to health and the environment; (c) enforce these statutory and regulatory programs; and (d) conduct research and development to support the implementation of the law.

There was a limited organizational and conceptual base upon which to build the toxic substances program when the law was first enacted. Consequently, the first years of implementation have had the foundation development for program operation as a major accomplishment. We have established and continued staffing the organization to carry out the program. At the same time we have arrived at the initial approaches to many basic program functions and have taken selected actions where warranted.

Some of the major base programs put in place include a hierarchical scheme of test standards and its use for chemical test regulations; a multi-stage assessment process for reviewing suspect chemicals to determine potential risks; the first control regulations on chemicals posing unreasonable risks; the premanufacture review program with the initial regulations, forms and other supporting documents; basic data management facilities and operations; approaches for using reporting requirements for information gathering; and mechanisms for setting priorities for action, enforcement policies and procedures for inspections, hearings, penalties, emergency actions, and imports; reorientation of existing research to toxic substances; and a basic plan for toxic substances research.

Significant program accomplishments over the last year specifically include the first proposed test standards--oncogenicity and other chronic effects as well as a standard for good laboratory practices concerning health effects testing, and additional standards for acute and subchronic toxicity, mutagenicity, teratogenicity, reproductive effects and metabolism studies; assessments at various stages for approximately 45 chemicals including two indepth assessments and one regulatory assessment for asbestos; final PCB ban regulations, a program for voluntary control of asbestos in school ceilings and a development plan for a possible asbestos regulatory action; proposed rules and interim policies and procedures for premanufacture notification, review of the first 11 new chemicals, and a discussion paper on premanufacture testing policy; the initial TSCA chemical inventory publication; nearly 300 substantial risk notice reviews; industry assistance to 1,300 calls and 4,000 requests for documents per month; public participation grants in three regions; and cooperative agreements with five states. Inspections for compliance with existing PCB and chlorofluorocarbon regulations have been conducted and enforcement actions taken on violations. A research program designed to meet the needs of the regulatory program has been established and is now being implemented.

The 1980 and 1981 toxic substances programs reflect increasing program activities and accomplishments. Many aspects of foundation-building will continue at least into 1980, but more experience and more extensive implementation will cause an appreciable increase in associated program outputs. Output levels in program areas begun in 1979 will continue to grow and accomplishments will expand into additional areas such as test rules, reporting and recordkeeping requirements, and significant new use rules.

In 1980, the Agency will make program operations more comprehensive. Because many elements of the toxic substances program are interrelated, their implementation must be carefully balanced and staged. In order for the overall program to continue operation in future years, we must start now to implement certain long lead time activities. The time required successively to implement testing requirements, have industry develop the data, evaluate the potential hazards, and take appropriate control action for particular chemicals may extend over several years. In addition, the program has been operating on an established information base carried over from previous years. This backlog of

information is being rapidly used up and must be replenished. For these reasons, in 1980 the activities continuing to receive greater emphasis are those that establish an adequate information and assessment base upon which to take actions now and in the future under TSCA and other toxics-related programs. The Agency will emphasize development of rules to obtain testing data upon which to make chemical assessments in support of regulatory and other actions. Additionally, EPA will stress development of reporting and record-keeping rules to obtain existing information to support these actions. Also, priority will be placed on making the premanufacture review program fully operational, in order to obtain and review information on new chemicals and take action on those that may be hazardous prior to their release into the environment. The Agency will begin to increase the emphasis on control of existing chemicals which are identified as hazardous through our assessment process. The Agency will conduct health and environmental effects assessments, monitoring, information management, economic impact analyses, and other activities to support these high priority programs.

In 1981, EPA will emphasize full operation of all major program components. There will be a balanced emphasis on regulation of new and existing chemicals based upon the information base established in 1979 and 1980. We will continue to place high priority on full operation of the premanufacture review program. Development of additional control actions for existing chemicals will also have high priority, and nonregulatory approaches, such as information dissemination and informal discussion, will be used when appropriate to effect protection from potential risks. Developing testing rules and information requirements to obtain data to support assessment and regulation will continue. Other support activities will be conducted as required to accomplish these high priority programs. As the Act requires, the program will rely extensively on other programs and agencies to take action when appropriate, and to establish coordinated approaches to problems.

The toxic substances enforcement program, operating in partnership with the Agency's toxic substances regulatory program, seeks to protect public health and the environment from unreasonable risks posed by chemical substances through the enforcement of the Toxic Substances Control Act and its established regulations. More specifically, the enforcement program concentrates its efforts on the enforcement of those regulatory provisions which (1) prevent or abate public health and environmental threats from chemical contamination, particularly in emergency situations; (2) assure that data used to make regulatory judgments are accurate, comprehensive, and timely; and (3) monitor compliance with existing standards to determine that regulated chemicals are manufactured, handled, and used in accordance with the law.

The enforcement program, moreover, establishes distinct but complementary roles for both the headquarters and regional components of the program. The headquarters function includes the responsibilities to: coordinate enforcement response to emergency situations; provide enforcement representation in and support to the TSCA regulatory development process; design, implement, and oversee inspection, compliance monitoring, and enforcement policies, strategies and procedures; develop, implement, and exercise enforcement remedies upon the detection of violations; assist and support regional personnel in case development and prosecution, conduct inspection, and compliance monitoring. The regional function is to: carry out enforcement response in emergency situations; conduct inspection and compliance monitoring activities in support of all established rules and regulations; and impose appropriate enforcement remedies in all instances of violation through the initiation and prosecution of enforcement actions. As the universe of enforceable rules and regulations expands, the regional office role will grow in size and importance.

60-531 O - 80 - 43

EPA's research program in support of TSCA will focus on developing improved rapid, reliable, and cost-effective techniques to be used for predicting transport, transformation, exposure concentration and adverse deleterious effects on human health and the environment resulting from exposure to toxic substances. In 1981, EPA will be accelerating the development and validation of new and promising research techniques for screening toxic substances. Further research will be done in predicting, measuring and determining the significance of exposure to commercial chemicals, with the ultimate goal of preventing or reducing adverse human health effects.

EPA research will provide techniques for evaluating the environmental hazards of toxic substances in support of Sections 4, 5 and 10 of TSCA. This research program consists of four major components: (1) a comprehensive program to develop methodologies for measuring environmental parameters for transport and transformation of toxic chemicals to be used in developing models for exposure assessment, protocols for testing and rapid screening of toxic compounds; (2) an extensive field program to determine actual exposures and provide an extensive data base for the validation and/or improvement of predictive models; (3) a concentrated effort to develop microcosms/laboratory ecosystems as tools in improving our ability to predict the movement of chemicals through the environment; and (4) a set of targeted research efforts to determine biotic exposure to toxic chemicals in the environment.

Research will also be focused on developing advanced, cost-effective methodologies for defining the transport, transformation and bioaccumulation of toxic chemicals in the food chain system. These methodologies, in turn will result in testing protocols for toxic substances and procedures for estimating toxic exposure concentrations as needed to implement Sections 4 and 5 of TSCA. During 1981, the major focus will be on validation of models for exposure assessment, standardization of testing protocols and development of predictive techniques for screening toxic chemicals.

Necessary research will be conducted to develop measurement methods for identification and quantification of trace level toxic substances in the environment. Present measurement techniques for toxics in the environment are not adequate. Also, research will be expanded to develop methods for measuring toxic chemicals in sediments, marine plants and in the air. These methods are needed in measuring exposure concentration, monitoring chemicals, designing control techniques and in enforcing regulations.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Toxic Substances Program.....	$94,646
Salaries and Expenses.....	+4,017
The net increase will allow expanded development of testing requirements and conduct of assessments; ongoing control regulation development; enforcement of new TSCA regulations; continuation in implementing an integrated approach to assessing total human exposure to and adverse health effects from toxics substances.	
Research and Development.....	+6,324
The increase will provide for the continuation of obtaining scientific data, evaluation, and lab work on effects, exposure, and test methods in support of the development of test standards and the conduct of risk assessments.	

	(in thousands of dollars)
Abatement, Control and Compliance.....	+1,015
The increase will provide primarily for the establishment of a pilot State cooperative enforcement grant program.	
1981 Toxic Substances Program.....	106,002

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $106,002,400 is requested in 1981. This request, by appropriation account, is as follows:

Salaries and Expenses.....	$33,571,200
Research and Development.....	26,215,600
Abatement, Control and Compliance....	46,215,600

This request represents an increase of $11,356,300 over the 1980 level.

Under the Salaries and Expenses appropriation, an increase of $1.1 million will allow expanded development of testing requirements and conduct of assessments to provide an adequate information base needed for present and future action. An increase of $.5 million will permit ongoing control regulation development and allow for the program review of andaction on new chemical notification to be fully operational. An increase of $.3 million reflects support for the enforcement of new TSCA regulations anticipated in 1981. An increase of $2.6 million will provide for the continuation in implementing an integrated approach to assessing total human exposure to and adverse health effects from toxic substances. The data will provide support to the Office of Pesticides and Toxic Substances in developing test standards, testing rules, and conducting risk assessments. An offsetting decrease of $.3 million represents a reduction in printing costs associated with reproducing a supplemental manufacturers and a processors inventory list rather than fully reprinting the original five volumes. An additional decrease of $.3 million reflects a decrease in regional responsibility and subsequent activities.

An increase of $1 million is for the establishment of a pilot State cooperative enforcement grant program under the Abatement, Control and Compliance appropriation.

An increase of $6.3 million to the Research and Development appropriation will provide for the continuation of obtaining scientific data, evaluation and laboratory work on effects, exposure and test methods in support of the development of test standards and the conduct of risk assessments. This increase will: (1) permit greater emphasis on the development of chemical testing protocols for absorbed-dose determination methods and risk assessment methods, as well as a method for extrapolating effects observed in animals to humans; (2) initiate a major ecological research program on aquatic toxicology as it relates to the development of assays at the cellular and community levels; (3) expand the development of monitoring methods for estimating human exposure to ambient toxics present in the environment; (4) expand development and validation of multi-media mathematical models for toxic chemicals; (5) expand efforts to define rate parameters for transformation processes of toxic chemicals; (6) expand development of microcosms for screening validation of models; and (7) expand efforts to predict the concentration of toxic chemicals in the food chain models.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate	$103,316
Congressional decreases:	
Salary costs	-2,000
ADP	-65
Travel	-138
Supplies and expenses	-12
Health and ecological effects	-5,000
Reprogramming for salary costs	-2,569
Proposed pay raise supplemental	+811
Miscellaneous reprogramming	+303
Current 1980 estimate	94,646

The Congress reduced Agency travel costs by $2 million, of which $138,000 is applicable to the toxic substances media. ADP costs were reduced by $1 million, resulting in a $65,000 decrease. Supplies and expenses were reduced by $2 million, of which $12,000 is within this media. A reduction of $5 million was made to the health and ecological effects activity. Finally, salary costs projected for 1980 were reduced by the Congress by $2 million.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $2,569,000 to the toxic substances media.

A supplemental appropriation is proposed to partially fund costs of the October 1979 pay raise, of which $811,000 is for the toxic substances media. Miscellaneous reprogrammings to this media resulted in a net increase of $303,000.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$61,531	$93,398
Effect of congressional changes	-4,231	...
Effect of pay raise supplemental	+811	...
Effect of reprogrammings	-2,266	...
Change in amount of carryover funds available	-4,447	+437
Program increase	+42,000	+10,856
Total estimated obligations	93,398	104,691
(From new obligation authority)	(88,379)	(99,235)
(From prior year funds)	(5,019)	(5,456)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The congressional changes discussed in the previous section are expected to result in a decrease of $4,231,000 to obligations. The proposed pay raise supplemental to partially fund the October 1979 pay raise will increase obligations by $811,000. The reprogrammings to fund authorized workyears will decrease obligations by $2,569,000; miscellaneous reprogrammings will increase obligations by $303,000.

The amount of carryover funds to be obligated in 1980 is $5,019,000, a decrease of $4,447,000 from the 1979 level. In 1981, it is estimated that $5,456,000 of carryover funds will be obligated, an increase of $437,000 over the 1980 level.

Program increase obligations were previously estimated at $42 million in 1980; in 1981, the increase in budget authority will result in an increase to obligations of $10.8 million.

TOXIC SUBSTANCES

PROGRAM LEVELS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Test Standards Initiated, proposed, Final	9	37	21	27	+6
Testing Rules Proposed	...	9	3	3	...
Detailed Evaluation of New Chemicals	1	...	15	16	+1
Preliminary Assessments of Existing Chemicals	310	375	333	333	...
Final Risk Assessments of Existing Chemicals	1	10	2	4	+2
Control Actions on Existing Chemicals proposed	...	6	3	4	+1
New Chemicals Processed	11	400	400	400	...
Actions Taken on New Chemicals	...	9	15	16	+1
Recordkeeping and Reporting Rules Proposed	...	...	13	9	-4
Recordkeeping and Reporting Rules Promulgated	...	...	9	11	+2
Major Literature Searches, Monitoring and Computer Support Contracts in Place	5	...	7	8	+1
Regional Public Participation Programs Supported	3	...	3	...	-3
Inspections Under Section 4	...	...	...	134	+134
Inspections Under Section 5	...	5	...	188	+188
Inspections Under Section 6	679	594	594	952	+358
Inspections Under Section 8	...	43	50	55	+5
Inspections Under Section 12	...	...	...	60	+60
Inspections Under Section 13	...	...	...	260	+260

TOXIC SUBSTANCES

Health and Ecological Effects

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Health Effects:					
Salaries and Expenses....	$1,309	$2,879	$3,319	$3,675	+$356
Research and Development.	8,522	12,146	9,189	12,473	+3,284
Ecological Effects:					
Salaries and Expenses....	382	3,179	2,131	3,141	+1,010
Research and Development.	779	7,223	5,224	8,158	+2,934
Transport and Fate:					
Salaries and Expenses....	590	883	879	1,362	+483
Research and Development.	1,323	1,683	1,464	1,655	+191
Stratospheric Modification - Health/Ecological Effects:					
Salaries and Expenses....	223	364	146	193	+47
Research and Development.	918	1,040	1,261	1,219	-42
Total:					
Salaries and Expenses....	2,504	7,305	6,475	8,371	+1,896
Research and Development.	11,542	22,092	17,138	23,505	+6,367
Grand Total.....	14,046	29,397	23,613	31,876	+8,263
Permanent Positions					
Health Effects.....	28	26	24	46	+22
Ecological Effects.....	7	20	25	44	+19
Transport and Fate.....	10	13	13	25	+12
Stratospheric Modification, Health Effects.....	1	...	3	3	...
Total.....	46	59	65	118	+53
Full-time Equivalency					
Health Effects.....	28	48	30	52	+22
Ecological Effects.....	10	24	28	46	+18
Transport and Fate.....	14	18	24	36	+12
Stratospheric Modification, Health Effects.....	5	3	3	3	...
Stratospheric Modification, Ecological Effects.....	1	1	...	...	...
Total.....	58	94	85	137	+52

Purpose

The toxic research and development program is designed to: (1) develop first generation testing rules and regulations pertaining to screening techniques for health and ecological effects; (2) provide analyses for transport and fate of ambient pollutants; (3) determine the ambient presence of selected toxic substances; (4) recommend alternative manufacturing process options for the processing and/or production of potentially hazardous or toxic materials; (5) provide a broad spectrum of technical expertise and specialized equipment to Agency operating programs.

Most of the 1980 research activities to support the Toxic Substances Control Act (TSCA) will continue into the future. Increases in 1980 expanded base programs, and provided for the Agency's Public Health Initiative (PHI), the first toxic substances research program that assesses the environmental pathways of toxics and integrated this data with human exposure and adverse health effects.

Budget Request

The Agency requests a total of $31,876,600 and 118 permanent workyears for 1981, an increase of $8,263,400 and 53 permanent workyears, of which $8,371,600 is for the Salaries and Expenses appropriation and $23,505,000 is for extramural purposes under the Research and Development appropriation; an increase of $1,896,100 and $6,367,300, respectively. The net change combines several significant increases. They are: $3,640,300 and 22 permanent workyears to increase development of chemical testing protocols to develop absorbed-dose determination methods, risk assessment methods, and a method for extrapolating effects observed in animals to humans; $940,000 and 19 permanent workyears to initiate a major ecological research program on aquatic toxicology as it relates to the development of assays at the cellular and community level; $500,000 to expand work on the development of monitoring methods for estimating human exposure to ambient toxics present in the environment; $1,000,000 to expand efforts on multimedia mathematical models for toxic chemicals; $1,000,000 for the development of microcosms for screening and validation of models; and $500,000 to accelerate investigations of food chain models. Additionally, $673,300 and 12 permanent workyears will be utilized to expand activities pertaining to defining rate parameters for transformation processess of toxic chemicals.

Program Description

The toxic substances health program will focus primarily on the development of screening techniques and protocols to predict nervous system damage, reproductive effects and birth defects; predictive methods for determining the extent of human exposures to toxic substances; and evaluate methods for determining the impact of exposure to toxic chemicals on human. The program has long-term goal of developing new and improved techniques for rapid, reliable, and economical screening of toxic substances. These screening techniques will provide less expensive methods to be used by manufacturers to predict the carcinogenic, mutagenic, teratogenic, and other deleterious effects on humans resulting from exposure to chemical substances. Considerable emphasis will be placed on completing promising testing protocols for immediate use while searching for life systems which may provide new and more senitive biological indicators.

The ecological effects program is designed to develop cost-effective and reliable test methods and protocols for defining adverse effects of toxic chemicals to animals and ecosystems. A major component, initiated in 1980, developed methodologies for defining human exposure to toxic chemicals. The information generated in this program is needed in defining exposure and adverse effects of toxic chemicals to humans and the environment. Exposure and effects data are used in hazard risk assessment under Sections 4 and 5 of TSCA.

The transport and fate program is designed to develop improved methodologies for predicting transport and transformation of toxic chemicals in the environment. One of the major goals of this program is to develop cost-effective test methods and predictive models for defining exposure concentration of toxic chemicals. Transport and fate research is especially designed to aid in implementing Section 4 and 5 of TSCA.

HEALTH EFFECTS

1979 Accomplishments

The 1979 obligations were $9,830,600, of which $1,308,900 was for salaries and exposures and $8,521,700 was for extramural activities. Accomplishments under this program include:

- Completion of studies which demonstrated the feasibility of using a new hemoglobin binding procedure to analyze blood for the presence and level of toxic substances to determine the human absorbed dose of an offending chemical.
- Completion of test protocols for determining how cancer is induced and promoted in liver cells.
- Demonstration of the SENCAR (Sensitive to Carcinoma) mouse as a sensitive test systems for use in short-term carcinogenesis assay.
- Development of a modified mouse lymphoma bioassay system which more adequately quantifies cellular mutational events.
- Development of a computerized system for storage of microbial mutagenesis data which is readily available for use in risk assessment.

1980 Program

In 1980, the Agency has allocated a total of $12,508,000 to health effects research of which $3,319,300 is for the Salaries and Expenses appropriation and $9,188,700 is for extramural purposes under the Research and Development appropriation.

The 1980 program focuses on developing specific research data needed in the development of guidelines and standards required under the Toxic Substances Control Act (TSCA). This focus is directed toward selecting and validating known techniques for screening broad ranges of chemical types and large numbers of individual chemical substances so that functional testing protocols can be developed. There is emphasis on accelerating development of the most promising techniques from the research and development state to practical utility and on new initiatives in research designed to protect public health. Approximately one-third of the toxic health research program relates to the public health initiative (PHI) which will develop new methodology in neurotoxicology and behavioral short-term screening, evaluate human exposure through development of tests for absorbed dose, and develop bioassay methods which will assist in improving the understanding of human risk assessment. The first three of the following items describe the major elements of the PHI.

- Neurotoxicology and behavioral effects programs will develop short-term testing methods using identification of specific biological change to screen for the effects of toxicants upon the functional and structural integrity of the nervous system.
- Development and validation of methods, including absorbed-dose determinations, to assess chemical exposure levels in human groups and individuals.
- Development of bioassay systems (for use in assessing human risk from chemical substances) will provide rapid, inexpensive methods for predictive evaluations of those specific quantifiable biological changes which can be easily observed and described.

- Epidemiological research will assess the impact of manufactured chemicals in industrial areas and other chemical use situations. Emphasis will include human reproductive effects.

- Reproduction and teratology research will define screening methodology to determine potential perinatal and early prenatal adverse responsiveness to manufactured chemicals by offspring which occur during pregnancy and early infancy.

- Carcinogenesis, mutagenesis and other toxicological assessment and methodology development and validation. This will include research on fibrous amphiboles, toxic metabolic interaction of chemicals, genotoxicity indicators, and the SENCAR laboratory mouse for use in risk assessments.

- Risk assessment research will include use of information on biological action and activity of chemical substances and a study of the relative importance of uneven numbers of chromosomes in genetically mediated disease.

- Technical assistance will provide scientific support on TSCA regulatory activities to the Office of Testing and Evaluation under the Office of Pesticides and Toxic Substances, and other Agency organizations.

- Long-term, low dose toxicity studies performed for EPA by the National Center for Toxicological Research. The center will assist in the development of toxicological procedures applicable to chemical testing. This program includes a rotenone carcinogenesis bioassay, the development of the protocol for an additive risk evaluation of four carcinogens in drinking water, an aromatic amine evaluation program, a study using lindane as a model compound to obtain information pertaining to species selection in conducting carcinogenesis bioassays, and technical support for cancellation hearings for the pesticide Silvex.

1980 Explanation of Change from Budget Estimate

The net decrease of $2,517,000 resultes from several actions. An increase of $26,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $2,000 and $2,000, respectively. The Congress also reduced toxic substances health and ecological effect activities by $5 million, which resulted in a decrease of $2 million to this activity. An overall reduction to salary costs resulted in a decrease of $381,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $188,600 to this activity.

A transfer of $30,000 was made from the interdisciplinary media from anticipatory research and development to cover personnel reassignment of individuals with special capabilities as a result of the abolishment of the Criteria Development and Special Studies Division.

1981 Plan

The Agency requests a total of $16,148,300 and 46 permanent workyears for this program, of which $3,675,300 is for Salaries and Expenses and $12,473,000 is for extramural activities under the Research and Development appropriation, an increase of $356,000 and 22 permanent workyears and $3,284,300, respectively. These expanded resources will permit still greater emphasis on development of chemical testing protocols for absorbed-dose determination methods, risk assessment methods, as well as a method for extrapolating effects observed in animals to human. The increase also reflects a redirection within the Agency of certain resources (formerly carried in the pesticides research account) relating to development of testing methodologies which may apply to toxic substances other than pesticides. For example, the same analytical techniques and equipment used to evaluate pesticide levels in the environment have been recently used to evaluate levels of PCBs in the environment. The increased concern about toxic chemical effects on the nervous system results in the need to accelerate the development of verified neurotoxicological protocols. Recent experience relating to increased abortion rates and children with birth defects have provided the impetus for increased research relating to reproductive and teratological effects.

Adequate testing of chemical substances requires that a battery of different tests be derived to assess the potential effects of a given substance on all of the biological systems important to human health. For this reason, the program will continue to emphasize faster, more accurate, and less expensive techniques.

This program, much of which had its origin in the 1980 Public Health Initiative, will include the following efforts:

- The neurotoxicology program will define the effects of toxicants on the integrity of the nervous system using a variety of measurable biological changes to indicate that a toxic effect has occured. Short-term testing procedures will be developed, defined, and validated to provide rapid screening procedures for complex neurobiological interactions. One benefit of this program will be the generation of a data base sufficient to ascertain the validity of short-term testing procedures. This research will include such things as evaluation of electrophysiological procedures, development of automated analysis for nerve tissue, correlation of reproductive behavior with reproductive development, measurement of alterations in other specific behaviors, development of a reliable technique for determination of electrical potentials emitted from nerves, development of techniques in the use of test tube cell culture taking tissue derived from the nervous system for a bioassay of neurotoxic responses, determination of effects on neuroendocrine function and development, and evaluation of effects on sensory thresholds.

- Human exposure research will provide development and validation of human exposure assessment methods to enable a closer, quantitative correlation between the environmental levels and the effects of toxic chemicals. This research will include development and validation of methodology for determining presence and internal-dose of a chemical using hemoglobin alkylation, development of DNA damage in human lymphocytes as indicators of carcinogen exposure, and identification of populations exposured to chemical carcinogens which could be observed to validate internal dose indicators.

- A risk assessment program will evaluate relationship and usefulness of short-term predictive bioassay procedures to quantitatively assess hazards of human exposure toxicants. Development of protocols for risk assessment from short and long-term studies is the defined goal. Research will include determination of the relationship between potency in short-term and long-term bioassays, calibration of test tube human cell systems for the prediction of genetic damage in the human, evaluation of the SENCAR mouse as a rapid quantitative carcinogensis risk assessment method, and detection and quantitation of chemicals in cells of the reproductive system.

- Reproduction-teratology programs are designed to define potential adverse heritable effects of toxicants on man. The assessment of exposure of an offspring during pregnancy and early infancy to toxicants will permit a better understanding of adverse effects and will provide an adequate data base upon which short-term testing procedures may be built. This research will include determination of effects of fetal development, assessment of perinatal toxicity in mammalian species, development of teratology bioassays in the test tube and in laboratory animals and studies to determine the susceptibility of spermatogenesis to environmental insult.

- Epidemiological research will assess the impact of manufactured chemicals in industrial areas and other chemical use situations such as the home and public places. Research will include investigation of reproductive dysfunction in human populations, epidemiological studies of selected communities, development and standardization of screening tests for use in epidemiologic studies, and evaluation of the feasibility of cellular genetics studies of spontaneously aborted fetuses as population monitoring systems.

- Bioassay will be developed and validated to address short-term testing procedures useful for predictive evaluations of specific biological changes, such as mutagenesis, carcinogenesis, reproduction effects, teratogenesis and general toxicological effects. Short-term testing of chemicals for known and unknown biological activity will serve as a validation of the procedures, as well as an addition to the data base. This research will include development and validation of several cell culture systems, a short-term assessment of cardiovascular toxicity, human cell interactions, and an evaluation of batteries of tests for mutagenesis and presumptive carcinogenesis. The research will also include development of improved statistical procedures for the analysis of various microbial test systems, methods to assess the effects of toxic substances of the immune system including surveillance against tumor cells, and developmental research on several new and more sensitive screening assays. This effort and the two following account for the remaining 1981 increase.

- Carcinogenesis and mutagenesis research will identify a broad range of test tube and laboratory animal tests to address certain aspects of carcinogenic and mutagenic transformation. These longer term carcinogenesis and mutagenesis programs are designed primarily to provide a firm data base upon which validated short-term bioassays can be based. This longer range and more intensive research employs a variety of disciplines for the broad scientific questions involved. Research will include determination of biochemical indicators of genotoxicity, data validation using computerized information sources and statistical systems for genetic toxicology bioassay, development of potential screening tests for the effects of inhaled toxic substances on enzyme and immune-complex activity, and development and validation assays for serum components associated with altered levels of serum lipids and lipoproteins as indicators of toxicity

- General toxicology programs address a varied array of biological toxic effects to which humans have been shown to be sensitive. These responses to toxicants need definition. The laboratory animal projects include a variety of routes of administration of toxicants as well as systems upon which they may act (e.g., immune, tissue, cardiopulmonary). An ultimate goal of these and other studies defined below is to determine mechanisms of toxic action from which short-term bioassay procedures may be ultimately derived and from which controls may be addressed to limit exposure. This research will include an evaluation of effects on host defense mechanisms through application of a study of influence on infections, study of developmental toxicity of metabolic patterns in major organs, evaluation of the use of clinical biochemical chemistries to assess effects, and evaluation of the toxicity of fibrous amphiboles in the form of non-commercial asbestos silicates to which people are exposed as a result of environmental contamination from mining and quarrying.

- All toxic substance health research programs will provide technical assistance and support to the Office of Toxic Subtances, the regional offices, and the Office of Enforcement in proposing and evaluating testing standards, evaluating testing data, and in developing symposia and workshops.

- The National Center for Toxicology Research, jointly funded with the Food and Drug Administration, will perform long-term, low-dose toxicity studies on chemical substances of interest to the EPA and will assist in developing methods applicable to a system of chemical screening. Long-term studies of rotenone, lindane, aromatic amines, and the interactive risk of two or more carcinogens in drinking water will continue.

ECOLOGICAL EFFECTS

1979 Accomplishments

During 1979, $1,161,100 was expended on the ecological effects program, which $779,300 was for extramural activities and $381,800 for salaries and expenses. Program accomplishments included the following:

- Round-robin validation of algal assay tests using silver, zinc and pentachlorophenol and fish Daphnia tests for defining accute toxicity of toxic chemicals were completed. The validation was carried out by performing these tests in EPA and non-EPA laboratories. These tests will provide industries with guidance for generating data to support the premarket evaluation of data on new chemicals.

- The work on soil core microcosm for investigating fate and effects of chemicals in soil community was completed. These microcosms will provide data on persistence and movement of toxic chemicals in terrestrial environments and will be used in the development of exposure assessment models.

- A provisional protocol to define the effects of toxic chemicals on seed germination and root elongation and standard testing procedures for embryos and larvae of the Atlantic silverside, Menidia have been developed. These tests are being used in generating data for defining potential hazards associated with toxic chemicals to ecosystems.

1980 Program

In 1980, the Agency has allocated a total of $7,355,100 to this program, of which $5,224,300 is for extramural activities under the Research and Development appropriaton and $2,130,800 is for the Salaries and Expenses Appropriation.

The long range goal of the 1980 program is to develop improved, cost-effective and validated methods for defining hazards associated with toxic chemicals to environmental species and the ecosystem. This program includes the public health initiative which is concerned with defining methodologies for assessing exposure of humans to toxic chemicals. Exposure methodologies are needed in order to define exposure levels for use in risk assessment process under Sections 4 and 5 of TSCA. This work will also aid the implementation of the Federal Insecticide, Fungicide and Rodenticide Act, Clean Water Act, Resources Conservation and Recovery Act.

Technical assistance will be provided to the Office of Pesticides and Toxic Substances on complex problems associated with defining ecological effects of toxic chemicals, critical review of Section 4 and Section 5 document of TSCA, participation in work groups, and preparation of support documents for TSCA rules and review of data on controversial new chemicals.

Work on the validation of acute toxicity tests via round-robin testing will be completed. Round-robin testing involves calibration of tests in two EPA laboratories and in four contractor laboratories. Round-robin testing of chronic and life cycle tests will be accelerated. These tests will include: Midge chronic, Daphnia life cycle, fathead minnow life cycle, Daphnia flow thru life cycle, life cycle for myside shrimp, embryo/larva test with fathead minnow, chronic test with midge tanytarsus, life cycle tests for fish, polchaetes, and crustaceous. These tests, upon completion, will be incorporated into Section 5 of TSCA test guidelines and will provide guidance to industries performing tests in new chemicals.

The general objective of the public health initiative-environment research program is to develop methodologies for estimating exposure concentration of toxic chemicals to humans and the environment. This program was initiated October 1, 1979. The program consists of the following major components:

- Mathematical models are being developed to predict concentrations of toxic chemicals in air, freshwater, and terrestrial environments. First generation freshwater and air models have been developed for a few chemicals and these models are being validated. The work on model development for terrestrials is being initiated.

- Models are also being developed to predict the toxicity of toxic chemicals based on the structure of the chemical. During the phase of structuring the model, activity development, data on toxicity and physical-chemical constants are being collected. Work is also being initiated to develop the structure-activity concept for predicting environmental persistence (microbial degradation, hydrolysis) of chemicals.

- Laboratory model ecosystems and microcosms are being developed to predict transport and transformation of toxic chemicals in freshwater, marine and terrestrial environments. The microcosms are also being used to validate transport, fate and exposure models.

- Work is being initiated to predict the concentration of toxic chemicals in the food chain. The specific projects include (1) survey of actual field situations in order to determine key species or processes where toxic chemicals have been identified in the food chain, (2) development of a bioaccumulation model for estimating concentration of toxic chemicals in terrestrial plants, birds and animals, and (3) determination of transport parameters for the major aquatic food chain.

- A human exposure monitoring capability within EPA is being established to develop and test methodologies for determining human exposure to toxic chemicals. Plans to develop an integrated program for determining concentration of toxic chemicals in air, water, and food chain systems have been completed. Criteria for selecting toxic chemicals and monitoring locations have been developed and chemicals and locations will be selected shortly.

1980 Explanation of Changes from Budget Estimates

The net decrease of $3,046,900 results from several actions. An increase of $36,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 millin to Agency travel costs and $1 million to ADP costs resulted in a decrease of $1,000 and $2,800, respectively. The Congress also reduced toxic substances health and ecological effect activities by $5 million, which resulted in a decrease of $3 million to this activity. An overall reduction of salary funds resulted in a decrease of $211,100. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $124,200 to this activity.

A transfer of $281,500 was made from other media within the Office of Research and Development as a result of the reorganization of the programmatic functions of the Corvallis and Las Vegas labs after a 1979 RIF. A transfer of $24,000 was made to management and support to lab support for lab maintenance costs due in part to increasing costs of energy. Finally, a reprogramming of $2,000 was made to transport and fate within the toxic substances media to help cover the cost of a symposium on the state of the act of the use of lab rate data in predicting environmental fate of new chemicals.

1981 Plan

The Agency requests a total of $11,299,500 and 44 permanent workyears for this program, of which $3,141,400 is for the Salaries and Expenses appropriation and $8,158,100 is for extramural activities under the Research and Development appropriation. This is an increase of $3,944,400 and 19 permanent workyears over the current level. Several important initiatives are planned in 1981: $944,400 and 19 permanent workyears will initiate a major ecological research program on aquatic toxicology as it relates to the development of assays at the cellular and community level; $500,000 will expand ongoing work on the development of monitoring methods for estimating human exposure to ambient toxics present in the environment; $1,000,000 will expand our efforts to develop and to validate multimedia mathematical models for toxic chemicals; $1,000,000 will develop microcosms for screening and validation of models; and $500,000 will expand our efforts to predict the concentration of toxic chemicals in the food chain.

The goals of the 1981 program are to develop test methods for defining toxic effects of chemicals on organisms in the environment and ecosystem and to develop predictive tools and evaluate models for defining exposure concentration of chemicals which are toxic to humans and the environment. Emphasis will be placed on the validation of test methods and models, development of multmedia models, food chain and exposure estimation, and structure-activity concept development for screening of toxic chemicals. The validation of models will be carried out in laboratory microcosms and model ecosystems as well as by field measurements. This research will provide critical methodologies for defining hazard and exposure data for use in the implementation of Section 4 and Section 5 of TSCA. The program also includes the initiation of a major program on aquatic toxicology with the objective of gaining a better understanding of the effect of toxic chemicals on ecosystem species and processes. Specific research is described as follows:

- Continued technical assistance on complex problems associated with defining exposure and ecological effects of toxic chemicals on ecosystem organisms and on ecosystems will be provided to OPTS.

- Round-robin validation of chronic and life cycle toxicity tests will be completed and will be transferred to OPTS for incorporation into TSCA Section 5 and Section 4 guidelines.

- Work on the development of exposure assessment methodology to humans under the public health initiative will continue. Mathematical models developed in 1980 for predicting exposure concentrations in air, freshwater and terrestrial environments will be validated. Attempts will be made to integrate such models for the development of a multimedia model. Work will be initiated on models for marine environments. Validation of models in laboratory microcosms and model ecosystems will be carried out. Methodologies for predicting the effects of toxic chemicals based on structure for one series of chemicals containing different substituents will be developed for predicting acute toxicity to one organism. Structure-activity concept predicting microbial degradation and oxidation/reduction will also continue.

- Investigations of food chain models for predicting concentrations of toxics initiated in 1980 will be accelerated. It is expected that a food chain model for one class of toxic chemicals will be completed. The food chain model will also assist in defining body burden. Work on bioaccumulation model development for toxics in aquatic plants and terrestrial species will be continued. Emphasis will be placed on defining transport, uptake and elimination characteristics of toxics and the development of the food chain model.

- Work on measuring ambient concentration of selected toxic chemicals in air, water, soil-sediment and food samples at a selected location will be carried out. Ambient exposure concentration data will be collected to assess the human exposure problem of the toxic chemical. Exposure data will also be analyzed in the light of socio-economic habits of the population group and population at risk estimates will be made. Exposure data will be utilized to validate mathematical models developed under this program for predicting exposure concentration of toxic chemicals.

- Work will be carried out to define criteria and tests to measure ecosystem stress and the capability of the ecosystem to either resist or recover from natural and/or toxic chemical effects.

- Work will be carried out on the research on the development of multiple assays. The work will involve the development of plant assays; development of insect bioassays; development of bioassays dependent upon toxic effects on mycorrhiza-root symbiosis; development of bioassays relating to plant-herbivore and host-parasite interactions; research to determine effects of toxics on predator-prey interactions; and development of bioassays using nematodes. Ecosystem process research will determine key species in a given ecosystem succession scheme and assess toxic impacts on succession sequence and rates; adapt bioassays for nitrogen cycle compounds to multivariate assays for critical terrestrial and aquatic ecosystems.

- Research will be initiated on a major program concerning aquatic toxicology. The research will cover a wide range of aquatic species in a search for unique sensitive end-point response to toxics other than death (e.g., swimming rate, sensitivity to light, etc.) and will include studies on the role of natural variation to chemical response in evaluating end-point phenomena. Toxics of particular interest are organics and petroleum. Research will also be done on the development of in vivo and in situ assays for cytogentic damage and to determine and repair mechanisms at the cellular level. Research will be initiated to develop marine microcosms and simulation models to determine community altering effects of persistent toxic contaminants, toxic transformation products and metabolities on commonly used food organisms. Research will also continue to provide characterization and determination of toxic effects of compounds giving carcinogenic responses of several concentrations of toxicants in aquatic animals through a geographic area.

TRANSPORT AND FATE

1979 Accomplishments

During 1979, obligations were $1,913,000, of which $1,322,800 was for extramural activities and $590,200 was for in-house costs. During the year:

- The Exposure Assessment Modeling System (EXAMS) was tested in laboratory ecosytems for the pesticide chemical parathion. The EXAMS model is used to estimate ambient concentration of toxic chemicals in aquatic environments. In addition, a user's manual for this model was developed.

- Test protocols were developed for hydrolysis and adsorption of toxic chemicals.

- A workshop was convened at Norfolk, Virginia, to identify research needs in the area of transport and transformation of toxic chemicals in the environment. The participants of the workshop included scientists from EPA, other Federal agencies, industries, and academia. The workshop resulted in a comprehensive document containing research needs in the area of tranport and fate of toxic chemicals which is being used by the EPA to plan future research in this area.

1980 Program

The 1980 resources for transport and fate are $2,343,400. The resources include $1,463,900 for extramural activities under the Research and Development appropriation and $879,500 for the Salaries and Expenses appropriation. These resources are assigned to develop methodologies for predicting transport, transformation, bioaccumulation and exposure of toxic chemicals in air, water, marine, soil, sediments and biota.

The main research objective in 1980 is to develop exposure assessment models for toxic chemicals in multimedia environments and to develop improved protocols for the testing of toxic chemicals. The research involves the characterization of environmental processes; measurement of rate parameters; development of quantitative expressions for environmental process description; determination of persistence of chemicals and identification and quantification of degradation products of toxic chemicals. The environmental process work will be validated in laboratory model ecosystems. The information obtained from the environmental processes work will be used in the development of exposure assessment techniques to be used in the evaluation of the risk which toxic chemicals may produce in humans or the environment. It is anticipated that the above work will also lead to the development of improved testing protocols to be used by the OPTS in the screening of toxic chemicals. Toxic substances and other environmentally significant chemicals to be studied will include priority chemicals identified by the Office of Pesticides and Toxic Substances. Specific research in 1980 includes the following:

- Technical assistance will be provided to the Office of Pesticides and Toxic Substances on complex problems associated with fate, testing, exposure assessment and in the development of test rules for Section 4 and Section 5 of TSCA. This technical assistance will include preparation of support documents for exposure analysis, critical review of Section 4 and Section 5 test rules and review of technical data on Section 5 chemicals.

- Exposure analysis modeling systems (EXAMS) will be refined and validated and a users manual will be prepared. The refined EXAMS will be tested for five chemicals. EXAMS will provide exposure data on toxics to be used in risk assessment under TSCA.

- Methodologies will be developed to define environmental transport and transformation processes including anaerobic degradation, sediment sorption, leaching and photochemical processes. These methodologies will provide rate coeffecient data to be used in exposure analysis and testing protocols for screening of toxic chemicals.

- Improved cost-effective and standard methods for the measurement of octanol/water partition coefficients of selected toxic chemicals will be developed. Partition coefficient data provide information on the bioaccumulation potential of toxic chemicals.

- Research will be conducted to develop validated reproducible actual media test systems and protocols for determining the routes, rate and fate of toxic chemicals in estuarine environments. Models will also be modified in order to predict concentration of toxic chemicals in marine animals. These models will provide exposure concentration of toxic chemicals in food chain systems.

- Research on defining the activities and persistence of toxic chemicals in air will be conducted. These studies will provide transfer coefficients to be used in exposure assessment models as well as in models for defining stratospheric ozone depletion.

- Models will be developed to predict fate and behavior or toxic chemicals based on structure and classes of toxic chemicals. This will include the development of a structure-activity relationship for predicting oxidation reduction of toxic chemicals and the validation of the benchmark approach for defining transport and transformation of toxic chemcials. These models will be used in the screening of candidate toxic chemicals for pre-market notification testing under Section 5 of TSCA.

- A good laboratory practice (GLP) document for carrying out certain transport and fate tests will be developed. This document will provide guidance to industries in carrying out the testing of new chemicals. Test data generated using the GLP documents will enable the Agency to assess the reliability of the data, which in turn means that the Agency would not have to spend resources to verify data generated by industries on new and existing toxic chemicals.

1980 Explanation of Changes from Budget Estimates

The net decrease of $222,200 results from several actions. An increase of $17,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency salary costs resulted in a decrease of $105,100. An overall reprogramming thoughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $113,800 to this activity.

A transfer of $41,000 was made to the management and support media to lab support for lab maintenance costs due in part to increasing costs of energy. A reprogramming of $20,000 from pesticides-ecological effects ($5,000), toxic substances-ecological effects ($2,000), toxic-substances-characterization and measurement methods development ($1,000), transport fate and effects of energy related pollutants ($6,000), and atmospheric transportation and transformation of energy related pollutants ($6,000), to help cover the cost of a symposium on the state of the art of the use of lab rate data in predicting environmental fate of new chemicals.

1981 Plan

The Agency requests a total of $3,016,700 and 25 permanent workyears for this program, of which $1,361,900 is for the Salaries and Expenses appropriation and $1,654,800 is for extramural purposes under the Research and Development appropriation. The increase of $673,300 and 12 permanent workyears will be used to: (1) expand efforts to define rate parameters for transformation processes of toxic chemicals; (2) develop improved methodologies for describing quantitatively the transport and transformation of toxic chemicals in the environment; (3) develop advanced structure-activity concepts for predicting bioaccumulation and toxicity of chemicals to aquatic animals; (4) develop exposure assessment methodologies and testing protocols to be used in defining risk and hazard associated with toxic substances; and (5) develop the exposure assessment methodology that responds to the need for a precise knowledge of the transport and transformation of toxic substances.

The main research objective in 1981 is to develop standard and improved methodologies for estimating transport and transformation of toxic chemicals in air, water soil, sediments, and biota. The work will involve the investigation of rate parameters of environmental processes, identification of transformation products and the development of quantitative expressions for the description of environmental processes. This information will be used in developing exposure assessment models for toxic chemicals in multimedia environments. After standardization of these methodologies they will be incorporated as protocols in the TSCA testing guidelines for Section 4 and Section 5 rules. Work will also focus on the development of improved structure-activity concepts for predicting transport, fate and toxicity of toxic chemicals to be used in screening premanufacturing data on new chemicals. The information developed under this program will aid the implementation of TSCA directly and other EPA legislations including Federal Insecticide, Fungicide and Rodenticide Act, Clean Water Act, Clean Air Act and Resources Conservation and Recovery Act. Technical assistance to the Office of Pesticides and Toxic Substances will be provided in the preparation of support documents for assessment and testing schemes for use in environmental fate and risk evaluation of chemicals and chemical mixtures; critical reviews of technical documents including chemical evaluation reports, Section 5 testing guidelines and Section 4 tests, standard rules for accuracy, science, logic and technical validity; and the development of methodologies for the risk assessment of toxic chemicals.

60-531 O - 80 - 44

A user's manual will be developed for various transport, fate and exposure assessment models to be used by the Office of Pesticides and Toxic Substances in evaluating data on new and existing chemicals.

Soil and sediments from locations of the U.S. will be characterized in terms of organic contents, clay content, exchange capability, etc. The soil and sediment will be tested for adsorption, degradation and leaching. Methods will be developed to predict adsorption on the basis of sediment/soil characteristics.

Work on leaching of toxic chemicals in soil systems will be carried out in order to develop protocols for possible incorporation into testing guidelines. A model ecosystem will be developed to define movement of toxics in a soil matrix. Data will be used to develop mathematical models for defining exposure concentration of toxic chemicals in soils. This model will take into account the soil type, properties of the chemicals and environmental characteristics.

Anaerobic biodegradation of toxic chemicals in aquatic environments will be studied. Emphasis will be placed on defining quantitative expressions for evaluating parameters for environmental transport and transformation processes of toxic chemicals. The lifetime of various chemicals as a function of the nature of the aquatic environment will be calculated and utilized in the development of exposure models. The methodology will be validated for the development of standard protocols to be used in testing guidelines.

Reactivity of toxic chemicals in air will be measured for three toxic chemicals. Reactions will include photolysis and reactions with ozone and nitrogen oxides. Rate constants for the reactions will be measured and will be used in the development of air exposure assessment models. Emphasis will be placed on standardizing the methodology in order to develop cost-effective testing protocols for use in defining persistence under TSCA.

Support documents will be developed for transport and fate tests under TSCA Section 5 testing guidelines. These documents will include limitations on the applicability of the test methods as a function of chemical structure, cost-effectiveness of the test method, and defined boundary conditions. At present, support documents are not available for transport and fate tests.

Work on the development of a good laboratory practice document for certain transport and fate and ecological effects tests will continue. These documents will enable the Agency to provide guidance to industries in obtaining reliable test data on chemicals.

Work on the investigation of kinetics of environmental transport and transformation processes will be expanded. Transport and transformation processes will include microbial degradation, chemical water sediment exchange, chemical reduction in bottom sediments, free radical oxidation, photolysis, plant uptake, bioaccumulation and adsorption/desorption. Emphasis will be placed on defining quantitative expressions for transformation processes and studying the influence of environmental factors on rate processes. It is anticipated that these methods will lead to the development of cost-effective tests for defining the persistence of chemicals for possible use in food-chain models. The models will be validated in watersheds, lakes and wetlands for the Office of Pesticides and Toxic Substances designated toxic chemical.

Work will be expanded to develop advanced and quantitative structure-activity concepts for predicting bioaccumulation and toxicity of chemicals in aquatic animals. The work will involve the application of the Hansch approach and Free-Wilson type structure-activity concepts for screening toxic chemicals. Parameters to be incorporated will include toxic effects (chronic, acute, bioaccumulation), partition coefficients, structural characteristics and environmental processes parameters. Attempts will also be made to test the feasibility of predicting fate and behavior of certain chemicals by comparing their characteristics with those of other chemicals that have structural similarities. The methodology developed under this work will reduce the time required for evaluating data on new chemicals under TSCA.

STRATOSPHERIC MODIFICATION - HEALTH AND ECOLOGICAL EFFECTS

1979 Accomplishments

During 1979, obligations totaled $1,141,100. Included in this total are $222,800 for salaries and expenses and $918,300 for extramural research activities. Specific accomplishments include the following:

- The National Academy of Sciences' state-of-knowledge studies on causes, effects, and alternate controls of stratospheric ozone protection were completed (mandated by PL 95-95). Reports are being prepared for publication.

- The Interagency Committee on Stratospheric Ozone Protection met and coordinated Federal research on stratospheric ozone depletion and identified research priorities. Priority areas are atmospheric science (including instrumentation), health effects, biological effects, and ecological effects.

- Epidemiological studies being conducted throughout the U.S. by the National Cancer Institute on the correlation of non-melanoma skin cancer, ultiviolet-B radiation and life styles, were completed. Preliminary analysis indicates that each one percent decrease in stratospheric ozone results in about a two percent increase in damaging ultraviolet radiation.

- Personal dosimeters were developed for use in studies to correlate exposure to ultraviolet radiation with skin cancer incidence.

- Continuing research provided updated data for use by the National Academy of Sciences and other organizations engaged in making improved integrated assessments of causes, effects, and controls of stratospheric ozone depletion.

- Computer modeling studies were initiated to determine whether ultraviolet-B radiation increases (such as those caused by decreased stratospheric ozone) may augment the generation of photochemical smog; thereby, affecting human health.

- Field experiments were conducted on crop yield and photorepair (an enzymatic mechanism that repairs cell mutations) effects for sensitive crops under varying ultiviolet-B levels. Laboratory experiments examining the effects of ultraviolet-B on photosynthesis were continued.

- Ultraviolet-B marine and freshwater penetration studies were expanded. The specific goal is to determine the effects of increased ultraviolet-B penetration on plankton organisms, northern anchovy and Pacific mackeral, as well as on shrimp and crab larvae in natural waters.

- A ultraviolet-B radiometry calbration and measurement technique was developed in cooperation with the National Bureau of Standards.

1980 Program

In 1980, the Agency has allocated a total of $1,406,700 to this program, of which $145,900 is for the Salaries and Expenses appropriation and $1,260,800 is for extramural purposes under the Research and Development appropriation.

The 1980 program focuses on improving our knowledge of the relationship of ultraviolet-B radiation to both melanoma and non-melanoma skin cancers; improving measures of the economic and social costs of skin cancers; and continuing to provide updated state-of-the-art knowledge for integrated assessments of causes, effects, and control of stratospheric ozone depletion. These are ongoing research efforts which are planned to extend beyond 1980 and through 1981. To enhance our understanding of the relationship between ultraviolet-B and skin cancer:

- Studies on melanoma (the more fatal type of skin cancer) will be given increased attention.
- Personal dosimeters produced in 1979 will be used in a pilot program to correlate exposure to ultraviolet radiation with skin cancer incidence.
- Ultraviolet-B radiation flux at epidemiological survey sites will be measured and correlated with cloudiness, turbidity, and ozone levels (the radiation reaching the earth's surface induces damage).

In addition:

- Initial model calculations on the connection between ultraviolet-B radiation and photochemical smog will be made based on the previously developed computer model.
- Sensitivity analyses of health damages will continue and economic and social measures of skin cancer costs will be tested. The result of these analyses and related data will be combined to make an integrated assessment of causes, effects, and alternate controls of ozone depletion.
- The Interagency Committee on Stratospheric Ozone Protection will continue to coordinate Federal research on ozone depletion.
- The National Academy of Sciences will publish reports entitled: "Stratospheric Ozone Depletion by Halocarbons Chemistry and Transport" and "Protection Against Depletion of Stratospheric Ozone by Chlorofluorocarbons."
- The second biennial report to Congress on research concerning causes and effects of stratospheric ozone depletion will be completed.

The 1980 program will also include the following projects which focus on improving understanding of the ecological effects of ozone depletion:

- Research to study the role and effects of ultraviolet-B radiation in the photosynthesis process will be initiated.
- Research on the adaptability of plants under field conditions to enhanced ultraviolet-B radiation will be conducted in order to understand why plants are affected to a greater degree in control chambers than in the field.
- Ongoing studies of effects of increased ultiviolet-B radiation on plankton organisms will be completed including an evaluation of the results and their possible value for estimating effects on other marine organisms.
- Final results of studies of ultraviolet-B radiation effects on shrimp and crab larval and on northern Pacific mackerel will be available.
- Reseach in the role and effects of critical molecular targets of ultraviolet-B radiation will be coninued. The results of this research will enhance our ability to predict effects on a range of marine organisms.

1980 Explanation of Change from Budget Structure

The net increase of $2,700 results from several actions. An increase of $5,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $400. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $2,600 to this activity.

1981 Plan

The Agency requests a total of $1,412,100 and 3 permanent workyears for this program, of which $193,000 is for the Salaries and Expenses appropriation and $1,219,100 is for extramural purposed under the Research and Development Appropriation.

Much of the research conducted by this program is ongoing in nature, taking several years to complete. For this reason, the 1981 research plan is similar to that for 1980. However, each year the projects are carefully monitored and the exact direction is modified. Most of the projects will produce interim results, while the scientific community in general produces new relevant data. This input is combined with changes made in the general thrust of the program and is used to appropriately define the individual projects from one year to the next.

In 1981 the program will:

- Continue to develop accurate measures of the economic and social costs of skin cancer. As this research continues the data base will improve qualitatively and quantitatively.

- Continue to provide the most recent state-of-the-art knowledge on causes, effects, and control of stratospheric ozone depletion to those conducting integrated assessments and to policy and decision-making officials.

- Continue the pilot study using personal dosimeters to test the relationship of ultraviolet-B and skin cancer.

- Continues ongoing studies on ultraviolet-B radiation flux measurements at epidemiological survey sites; data correlation with cloudiness, turbidity, and ozone levels, and development of a forecasting model to project skin cancer incidence and its relationship to ultraviolet-B enhancement.

- Report initial theoretical analyses of the interaction of ultraviolet-B radiation and photochemical smog and initiate smog chamber studies if the theoretical studies so warrant.

- Continue federal research coordination by the Interagency Committee on Stratospheric Ozone Protection.

- Continue studies of the role and effects of ultraviolet-B on photosynthesis with the details of the study being changed based on results obtained in 1980.

- Initiate new studies of ultraviolet-B effects on key marine life forms. The specific target populations and methodologies used in these studies will be based in part on the results of the studies completed in 1980 on plankton organisms, shrimp and crab larval, and mackerel.

- Complete the study on the role and effects of critical molecular targets of ultraviolet-B radiation.

- Prepare the third biennial research report to the Congress in January 1982.

- Prepare a comprehensive assessment of the state of knowledge and research needs, based on new knowledge obtained in 1980 and 1981.

TOXIC SUBSTANCES

Industrial Processes

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Industrial Processes:					
Salaries and Expenses..	$260	$642	$414	$614	+$200
Research and Development.....	200	1,100	1,234	1,158	-76
Grand Total.....	460	1,742	1,648	1,772	+124
Permanent Positions.....	8	12	11	11	...
Full-time Equivalency....	7	14	14	14	...

Budget Request

The Agency requests a total of $1,771,700 and 11 permanent workyears for 1981, an increase of $123,900 over 1980. Included in this total is $614,200 for the Salaries and Expenses appropriation and $1,157,500 for extramural purposes under the Research and Development appropriation; an increase of $200,200 and a decrease of $76,300, respectively.

Program Description

The toxics industrial research program is being conducted to directly support the current needs of the Office of Pesticides and Toxic Substances (OPTS). Major objectives of the program include: (1) providing technical assistance relating to toxic identification and quantification for industrial processes and products; (2) evaluating process alternatives in terms of environmental acceptability based on toxic pollutant criteria; (3) defining the occurrence of toxic substances as impurities in commercially available chemicals from a knowledge of process chemistry and waste composition; (4) providing technical assistance in terms of participation in working groups, review of reports, documents, and for the development of expert testimony as required by OPTS; (5) providing perspectives on the occurrence and use of high priority TSCA chemicals for industrial processes; (6) providing information on the availability of substitute chemicals to replace chemicals for which TSCA has mandated a decrease in manufacturing, including information on the economics of substitution; and (7) providing in-plant manufacturing process quality control assessments.

1979 Accomplishments

The 1979 obligations for this program were $459,900, of which $259,800 was for in-house costs and $200,100 was for extramural activities. Specific accomplishments included the following efforts:

- Provision of technical assistance to OTS. For example, chemical substances used as solvents in industry were characterized and ranked according to production and general population exposure. An assessment of exposure to asbestos was conducted to develop techniques for sealing friable sprayed-on asbestos coatings in structures, high-vacuum removal of asbestos from building construction sites, and training of local personnel to use asbestos particulate detection methods. The destruction of PCB's (polychlorinated biphenols) in high-efficiency utility boilers was tested and the preparation of protocols and guidelines for this method of destruction was initiated. A related effort was also started to evaluate a catalytic ultraviolet ozonation process of PCB and trichlorobenzene destruction.

- Developed process alternatives. Surveys were conducted on chemical manufacturing process technologies to identify pollutant sources of generic unit processes and to begin developing a basis for comparison of pollutant discharges of alternate processes. The Office of Pesticides and Toxic Substances will utilize this methodology when it is fully developed for premarked notification reviews under TSCA Section 5 and for regulatory options assessment under Section 6.

- Identified toxic product contaminants. As part of the generic unit process technology assessment described above, toxic pollutants that might become product contaminants were identified for use in TSCA Sections 5 and 6 regulatory reviews.

- Participated in working groups/task force. The laboratories and headquarters staff participated in the EPA Dioxin Task Force and prepared reference manuals that define dioxin sources and destruction methods.

- Evaluated chemical uses/substitutions/processes. The generic unit process technology and pollutant assessment work indicated above provided data for the establishment of a predictive model which will lead to identification of potential uses and the associated risks and substitutes and manufacturing processes for new and existing chemicals to be regulated by the Office of Pesticides and Toxic Substances under TSCA Sections 5 and 6 respectively.

1980 Program

In 1980, the Agency has allocated a total of $1,647,800 to this program, of which $414,000 is for the Salaries and Expenses appropriation and $1,233,800 is for extramural activities under the Research and Development appropriation. In 1980, the industrial processes toxics program will:

- Provide technical assistance to identify and assess specified toxic pollutants resulting from industrial processes (i.e., dioxins from chlorophenols production).

- Continue support to the Office of Pesticides and Toxic Substances for specific problems related to asbestos and PCB's regulation.

- Continue development of the chemical manufacturing processes pollutant prediction model. This model identifies predicated pollutants and validates them for 12 generic (unit) manufacturing processes. This model will be used to predict possible toxic pollutants that can be generated by altering the manufacturing process conditions.

- Define alternative processing routes and modifications to minimize public exposure to toxic substances that result from the manufacture of specific high volume halogenated hydrocarbons (e.g., pentachlorophenol). The potential for environmental contamination from these halogenated hydrocarbons is high due to the manufacturing process.

1980 Explanation of Changes from Budget Estimate

The net decrease of $94,200 results from several actions. An increase of $11,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency salary costs resulted in a decrease of $104,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $1,900 to this activity.

1981 Plan

The Agency requests a total of 11 permanent workyears and $1,771,700 for this program, of which $614,200 is for the Salaries and Expenses appropriation and $1,157,500 is for extramural purposes under the Research and Development appropriation.

The 1981 program will continue to emphasize the "new chemical" manufacture pollution predictive model. This model is based on the unit process approach and will provide EPA with a source of industrial information concerning chemicals. For a specific chemical the model will contain information such as the manufacturing process, distribution and use patterns, waste disposal methods, and control options. This information, together with a viable analytical model, will predict human risk as the chemical product moves through commerce. In addition, the program will:

- Expand toxic pollutant identification analyses to include three to seven additional unit processes covering the feedstocks, intermediates and product contaminants.

- Expand "new chemical" manufacture pollution predictive model to identify: (a) anticipated processes involved in manufacture, commercial and consumer use, transportation, and disposal; (b) expected releases associated with the individual processes; (c) quality and quantity of these releases; (d) recommended control methods; and (e) risk analyses relative to feedstocks, by-products, impurities, and degradation products.

- Expand regional technical support to include toxic chemical spills and emergency response techniques.

TOXIC SUBSTANCES

Monitoring and Technical Support

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Characterization and Measurement Methods Development:					
Salaries and Expenses	$152	$200	$183	$381	+$198
Research and Development	445	437	420	574	+154
Technical Support:					
Salaries and Expenses	1,058	1,180	985	1,313	+328
Research and Development	661	1,021	1,100	979	-121
Total:					
Salaries and Expenses	1,210	1,380	1,168	1,694	+526
Research and Development	1,106	1,458	1,520	1,553	+33
Grand Total	2,316	2,838	2,688	3,247	+559
Permanent Positions					
Characterization and Measurement Methods Development	2	3	4	8	+4
Technical Support	17	18	18	18	...
Total	19	21	22	26	+4
Full-time Equivalency					
Characterization and Measurement Methods Development	10	6	6	10	+4
Technical Support	20	23	23	23	...
Total	30	29	29	33	+4

Budget Request

The Agency requests a total of $3,246,700 and 26 permanent workyears for 1981, an increase of $558,900 and 4 permanent workyears from 1980. Included in this total is $1,693,600 for the Salaries and Expenses appropriation and $1,553,100 for extramural purposes under the Research and Development appropriation; an increase of $525,800 and

$33,100, respectively. Of this increase, $357,600 will support the development of a comprehensive program for separation, identification and quantification of toxic chemicals bound to sediments; the development of techniques for measuring exposure levels of toxics in marine animals; and the development of methodologies to identify and measure toxic chemicals in plants. In addition, $201,300 will be used to augment field validation activities within the technical support program.

Program Description

The characterization and measurement methods development program is designed to provide improved methods for collection, separation, identification and quantification of toxic substances in the environment. The program scope includes air, water, sediment, plants, and marine animals. The 1981 program will expand the work on characterization of toxics in sediments and will initiate activities pertaining to characterization and measurement of toxics in plants and marine animals. These methods are needed in carrying out monitoring, fate, effects, and exposure measurement of toxic chemicals in the environment.

The technical support program assists the Agency's operating programs in meeting the information mandates of the TSCA. Research is conducted to develop and validate field collection and analytical methodologies needed to: (1) fill in gaps in the data base on existing chemicals; (2) assist in the development of appropriate testing protocols and environmental and exposure assessment models; and (3) develop suitable guidelines for the validation and verification of predictive models. The program also provides analytical methods required to enforce existing and planned TSCA regulations; and supporting research to assure that appropriate quality assurance guidelines and protocols are developed and implemented for all TSCA monitoring activities.

CHARACTERIZATION AND MEASUREMENT METHODS DEVELOPMENT

1979 Accomplishments

During 1979, resources totaled $597,100. Included in this total is $151,900 for salaries and expenses and $445,200 for extramural purposes. The accomplishments include:

- Analysis of toxic organic vapors in the Love Canal area. The results have provided an estimate of exposure concentration of toxic chemicals near the Niagara Falls area. Exposure data is needed for risk estimations.

- Evaluation of sampling methods for gaseous atmospheric samples. This has led to the development of an improved automatic gas sampling system.

- Development of a technique based on the application of liquid chromatography/ Raman spectometry for identification of toxic chemicals in water. The technique provides a capability to measure non-volatile organics in surface waters. Non-volatile organics which contribute 80 percent of organic compounds in water are difficult to analyze.

1980 Program

In 1980, the Agency has allocated a total $602,600 to this program, of which $183,000 is for the Salaries and Expenses appropriation and $419,600 is for extramural purposes under the Research and Development appropriation.

Emphasis in 1980 will be placed on (1) the development of improved collection devices for toxics in air; (2) improved separation techniques for analyzing toxics in air; (3) measurement of ambient concentration of toxics in air samples; (4) separation techniques for toxics bound to sediments; and (5) identification of trace level toxic impurities in commercial substances. Chemicals to be studied include priority toxics identified by the Office of Pesticides and Toxic Substances and other environmentally significant toxic chemicals. Specific research in 1980 is as follows:

- Efforts will continue to develop sampling and analysis methods for toxic organics in air. These methods involve the use of cartridges containing absorbent powders, separation of organic chemicals using columns containing polymer resins and analysis by gaschromatography mass-spectrometry. Various absorbent powders as well as various column and detector systems are being investigated. These methods will be used in the work to measure the exposure concentration of toxic chemicals in air near chemical manufacturing plants.

- Efforts will continue to develop solid polymeric devices for collection of polychlorinated biphenyls (PCBs) from atmospheric samples. The methodology involves the use of sorbents such as XA-D type resins. This method is being used to define exposure concentration of PCBs in the U.S. and be helpful in the regulation of PCBs under TSCA.

- Research is also underway to develop cost-effective detector systems for high pressure liquid chromatography. These detector systems will provide a rapid and inexpensive method for the analysis of new and existing toxic chemicals and will also be used for measuring the exposure concentration and defining the risk of toxics under Section 4 of TSCA.

- Studies to estimate the ambient concentration of asbestos and freon as a result of emission from automobiles are underway. These studies will aid in defining brake drum cleaning methods (such as the wet vacuum method) which control asbestos from worn brake linings. These studies will also aid in defining techniques to recover freon from the air conditioning systems of junked cars.

- Methodologies for the separation and identification of toxic chemicals in the sediment matrix will be developed since adequate methodologies are not presently available. The specific approach in the development of such methods and techniques will involve sampling, extraction of toxics from sediment, separation, identification and quantification using gas-chromatography mass-spectrometry. Initiating this work will develop an inhouse capability for analyzing toxics in sediments and will aid in defining the bio-availability of toxics in aquatic environments.

- In 1980, studies are also being initiated to develop methodologies for measuring toxic impurities of trace levels in commercial toxic substances. Initial work will focus on measuring PCB impurities in oils. These studies will provide methodologies to identify the occurrence of trace level toxic impurities in chemicals used in large quantities. The identification of such trace impurities will enable the Agency to define and reduce potential risk associated with toxics to humans.

1980 Explanation of Change from Budget Estimate

The net decrease of $34,900 results from several actions. An increase of $5,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency salary costs resulted in a decrease of $31,800. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $43,100 to this activity.

A transfer of $10,000 was made to management and support to lab support for lab maintenance costs due in part to increasing costs of energy. A reprogramming of $1,000 was made to toxic substances transport and fate to help cover the cost of a symposium on the state of the art of the use of lab rate data in predicting environmental fate of new chemicals. A transfer of $45,700 was made from the air media, from transport and fate to support a transfer of personnel effected in 1979.

1981 Plan

The Agency requests a total of $955,200 and 8 permanent workyears for this program, of which $381,100 is for the Salaries and Expenses appropriation and $574,100 for extramural purposes under the Research and Development appropriation. With the increase of $352,600 work will be expanded on the identification of toxics in sediments and initiate work on the characterization of toxics in plants and marine animals.

Work will be initiated on the development of separation, characterization, and quantification methodologies for toxics in air. Emphasis will be placed on the application of these methodologies in the determination of concentration and movement of toxic chemicals in air near chemical manufacturing plants. These studies will be expanded to include gases and toxics adsorbed in particulates. Current methodologies for analysis of toxics in particulates are inadequate. These methodologies will be used by the Office of Pesticides and Toxic Substances and the Office of Enforcement to measure and identify toxics in air, to generate data for model validation, to estimate exposure concentrations of toxics in air, and in developing monitoring networks.

Cost-effective detector systems capable of analyzing wide ranges of toxic chemicals in conjunction with high pressure liquid chromatography will be continued. Emphasis will be placed on the standardization of the detector system for individual toxic chemicals. The work on the separation and characterization of toxics bound to sediments will be expanded. The effect of the nature of sediment and the chemical structure in the development of methodology will be evaluated. Methodology will be standardized for one class of toxic chemicals.

Work on the development of methodologies for identification of PCBs in oils will be continued and oils identified by the Office of Pesticides and Toxic Substances will be examined for possible occurrence of PCBs. These methods will aid in the enforcement of PCB regulations.

Methodologies for determining asbestos concentrations in the air will be developed and will be applied in analyzing environmental samples. Such data will be used in the validation of exposure models and in defining the risk to humans from asbestos. These methods will also aid in the development of technologies to control asbestos in the environment.

Methodologies for separation, identification and quantification of toxic chemicals in plants and marine animals will be developed. These methods will define exposure concentration of toxics for use in the development of food chain models. Our current understanding of food chain toxicity is inadequate and this data is critical to the total human risk assessment of toxic chemicals.

TECHNICAL SUPPORT

1979 Accomplishments

During 1979, obligations totaled $1,718,900. Included in this total is $1,057,500 for salaries and expenses and $661,400 for extramural purposes. In 1979, the program:

- Developed field sampling methodologies and prepared techniques to extend the gas chromatograph and mass spectrometry organic screening capability. Data on 75 to 100 compounds were collected at Houston, Beaumont, Lake Charles, and at sites in New York and New Jersey.

- Concluded controlled laboratory and field studies on fate of the pollutant aryl phosphate. This compound was found to be present beyond the fenceline of industrial facilities.

- Expanded Mass Spectra Search Data Bank to include toxic compounds found in air and water.

- Characterized the environmental setting of Beaumont/Lake Charles area using aerial photography and map overlays in support of Region VI, Office of Enforcement, Office of Research and Development and the Industrial Pollutant Fate Study. This data will be used to help define the boundaries of the field study effort.

1980 Program

In 1980, the Agency has allocated a total of $2,085,200 of which $984,800 is for the Salaries and Expenses appropriation and $1,100,400 is for extramural purposes under the Research and Development appropriation. In 1980, the program will:

- Develop and apply field sampling methodology for organic pollutants associated with dye and pigment manufacturers and textile plants.

- Initiate an effort to develop field sampling protocols for the validation of stream models.

- Develop biological screening techniques for Dioxin.

- Develop quality assurance sampling protocol for bulk asbestos.

- Complete design work to streamline Gas Chromatograph/Fourier Transform Infra Red measurement capability in order to increase throughput and reduce costs.

1980 Explanation of Change from Budget Estimate

The net decrease of $115,300 results from several actions. An increase of $24,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and salary costs resulted in a decrease of $4,500 and $167,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $18,700 to this activity.

A transfer of $50,000 was made from water quality from technical support to provide additional support to the technical support program under the toxic substances activity.

1981 Plan

The Agency requests a total of $2,291,500 and 18 permanent workyears for this program, of which $1,312,500 is for the Salaries and Expenses appropriation and $979,000 for extramural purposes under the Research and Development appropriation. The increase of $206,300 will be used to augment field validation activities. In 1981, the program will:

- Continue fenceline monitoring studies to develop and apply both Gas Chromatograph and Mass Spectrometry organic screening techniques and non-Gas Chromatograph and Mass Spectrometry techniques.
- Continue field support for model validation, including completion of sampling protocols for validation of stream models.
- Adapt biological monitoring techniques for rapid screening of chemicals.
- Investigate non-reactive, multielement techniques to simplify routine measurement of large numbers of samples.
- Develop quality assurance protocols in support of specific TSCA regulations.
- Develop comprehensive sampling protocols for analyzing asbestos in various products.

TOXIC SUBSTANCES

Toxic Substances Strategies

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Testing and Evaluation:					
Salaries and Expenses..	$3,592	$10,387	$6,106	$7,241	+$1,135
Abatement, Control and Compliance.....	13,453	26,258	23,856	23,182	-674
Chemical Control:					
Salaries and Expenses..	2,275	5,773	4,618	5,151	+533
Abatement, Control and Compliance.....	4,406	6,358	6,736	6,733	-3
Information Integration:					
Salaries and Expenses..	5,214	4,023	7,165	6,879	-286
Abatement, Control and Compliance.....	11,437	11,524	13,040	13,740	+700
Toxic Management:					
Salaries and Expenses..	1,033	1,220	1,152	909	-243
Abatement, Control and Compliance.....	40	...	80	80	...
Total:					
Salaries and Expenses..	12,114	21,403	19,041	20,180	+1,139
Abatement, Control and Compliance.....	29,336	44,140	43,712	43,735	+23
Grand Total.....	41,450	65,543	62,753	63,915	+1,162
Permanent Positions					
Testing and Evaluation.	117	243	178	207	+29
Chemical Control.....	76	164	139	147	+8
Information Integration	87	103	128	130	+2
Toxics Management.....	33	43	41	18	-23
Total.....	313	553	486	502	+16
Full-time Equivalency					
Testing and Evaluation.	118	223	201	230	+29
Chemical Control.....	64	149	156	164	+8
Information Integration	89	131	151	153	+2
Toxics Management.....	38	47	47	28	-19
Total.....	309	550	555	575	+20

Budget Request

The Agency requests a total of $63,915,800 and 502 permanent workyears for 1981, an increase of $1,162,300 and over 16 permanent workyears for 1980. Included in this total is $20,181,000 for Salaries and Expenses and $43,734,800 for Abatement, Control and Compliance, with increases of $1,139,200 and $23,100, respectively. These resources will permit expanded development of testing requirements and conduct of assessments to provide an adequate information base for present and future action under the Toxic Substances Control Act (TSCA) and other toxics related programs. The program for review of and action on new chemical notifications will be fully operational. Control actions will be taken on selected chemicals identified as posing unreasonable risks. Required information gathering and management, monitoring, and economics support for these activities will be provided.

Program Description

The toxic substances strategies subactivity is comprised of the testing and evaluation, chemical control, information integration, and toxics management elements. These elements cover the Agency's testing, assessment, new chemical review, existing chemical control, economics, recordkeeping and reporting, data management, monitoring, toxic substances coordination, and industry assistance responsibilities under the Toxic Substances Control Act (TSCA).

Testing and Evaluation - The goals and objectives of the TSCA testing and evaluation program aim to increase efficiency and scientific credibility of toxic substances program assessments and regulations. They are: (1) develop a cost-effective testing scheme for determining experimentally the health and environmental effects of chemicals, related to this goal is the annual review of all test standards for revision as necessary to maintain an up-to-date and comprehensive scheme; (2) obtain test data where required for making evaluations of risk and to assure the quality of data; (3) develop a scientifically sound chemical assessment system; and (4) provide assessments of risk and exposure required to support toxic substances control actions.

A major feature of TSCA is the authority to require industry to test selected chemicals for their possible adverse effects on health and the environment. Adequate test data, currently unavailable for most chemicals, are a prerequisite to the evaluation of a chemical's risk. Such evaluations are needed to define and implement appropriate regulatory actions under TSCA and other statutes aimed at protecting health and the environment.

The testing authority of TSCA is implemented by promulgating rules specifying the chemicals to be tested and the "test standards" that are to be followed in performing the testing. The test standards, which TSCA requires to be reviewed and updated annually, specify the effects to be evaluated and the nature of the tests and test protocols to be followed in so doing. EPA will propose a structure of test standards to be referenced in adopting test rules for specific chemicals. These standards will first be based on existing validated test methods, and then expanded to cover other effects such as neurotoxicity and overall ecosystem impacts. Based upon the required annual review, these test standards will be refined and improved.

Promulgation of test rules applying the relevant test standards to specific chemicals will be done in response to the semiannual recommendations of the TSCA Interagency Testing Committee (ITC) established by Section 4(e) of TSCA, as well as for other chemicals whose needs for testing have been identified through the evaluation process described below. As TSCA requires, within 12 months of receiving recommendations from the ITC, EPA will either initiate rulemaking to require the recommended testing or publish its reasons for not so doing.

Evaluating the hazards associated with production, use, and disposal of chemicals to determine if such activities pose unreasonable risks is the cornerstone of the TSCA program. Certain evaluation efforts, such as evaluating "notices of substantial risk" submitted by industry as required by Section 8(e), evaluating citizen petitions submitted under Section 21, and evaluating notices submitted by industry prior to the manufacture of a new chemical as required by Section 5 are based upon outside input. Other evaluation activities, such as systematic identification and assessment of potentially high-risk existing or new chemicals, are initiated by EPA and are critical to the effective application of TSCA regulatory authorities.

Chemicals of concern identified through review of substantial risk notifications and other sources will be entered into a multistage hazard evaluation process, with a decision being made at the end of each stage whether to continue on to the next, more intensive stage of evaluation. Alternate decisions at a given stage include dropping current consideration because of apparent low hazard potential, subjecting the chemical to testing requirements to fill critical data gaps, or referring the chemical to another program or agency having authority to deal with any apparent hazards. Chemicals having completed all evaluation stages will have received a full evaluation of their sources, exposure potential, and adverse effects, as well as an investigation of their existing regulatory controls and identification of possible control options to reduce health and/or environmental risks associated with their production, use, and disposal. Such evaluations will provide a basis for initiating suitable regulatory actions under TSCA or other relevant authorities.

Chemical Control - The goal of the chemical control program is to protect human health and the environment by controlling new and existing chemical substances that present unreasonable risks of injury to health or the environment. This goal will be accomplished through implementation of the premanufacturing notification, control regulations, and imminent hazard regulatory provisions of TSCA. The major objectives are determination of unreasonable risk based upon evaluation of chemical substances on health, environmental, social, and economic factors; use of the least burdensome type of control (regulatory or nonregulatory) necessary to reduce or prevent unreasonable risk; and provision of all the economic analysis necessary to implement TSCA.

One of the major functions of the chemical control program is to review notices and information regarding the manufacture of new chemicals (i.e., those not listed in the inventory of existing chemicals) and the manufacture or processing of chemicals for significant new uses. This includes review of the notices for compliance with applicable rules and guidelines and for "newness," action on exemption requests, review of data in the notices and information gathered through data systems searches and reporting requirements, determination of unreasonable risks, and taking of appropriate control actions informally, and under TSCA or recommending referrals to other programs within EPA or other Federal, State, and local government entities. Significant new use rules will be established which require notification to EPA of new uses of new or existing chemicals determined to be significant based on exposure and other factors.

60-531 O - 80 - 45

Another function is to review information on the hazardous, social, and economic aspects of existing chemicals (those listed in the inventory) in order to determine unreasonable risk and to limit or control the manufacturing, processing, distribution, use, or disposal of chemicals which pose or may pose unreasonable risks to health or the environment. An additional function is to conduct economic studies to support these actions as well as testing and evaluation, reporting and recordkeeping and to prepare necessary special economic analyses.

Information Integration - The TSCA information integration program is charged with the responsibility to provide a comprehensive program for chemical information collection, storage and retrieval and a cohesive Federal approach to controlling unreasonable risks associated with chemicals. Having these capabilities, it is also charged with providing all information support to the risk assessment, premanufacturing notification review, chemical control and testing programs. Information integration support activities are crucial to promulgating timely and defensible chemical control regulations and testing rules. These objectives are met through programs that: (1) obtain chemical information from industry using recordkeeping and reporting rules promulgated under the authority of Section 8 of TSCA for the use of the toxic substances program and others in assessing and regulating chemical hazards; (2) establish and use information storage and retrieval systems and data bases to serve the information needs of toxic substances and other programs, while maintaining adequate control of chemical information and data to assure the security of confidential business information; (3) analyse and manipulate available chemical data bases to identify and order chemicals of concern to the toxic substances program; (4) provide environmental, human, animal, and biota monitoring and exposure data and analysis to support risk assessments, premanufacturing review, and chemical control activities; (5) provide mechanisms and analytic support for coordinating and integrating the toxic substances program policies and activities with those of other EPA programs, EPA regions, State and local governments, public interest groups, other Federal agencies, and other countries; (6) provide information to assist industry in complying with TSCA provisions and provide feed back from industry regarding TSCA implementation; (7) work toward developing internationally recognized testing protocols, good laboratory practices, and harmonized approaches to regulate toxic chemicals.

Toxics Management - The goals of the regional toxics management program are to implement selected TSCA objectives at the State and local levels, and to provide limited integration support to the Agency's regional implementation of intermedia toxic substances activities. The major objectives and functions to be accomplished are:

- Providing expertise to State and local governments as they implement the Voluntary School Asbestos Program.

- Ensuring the provision of adequate, timely, and responsive information and assistance to the public and industry within the region.

- Facilitating the use of TSCA-gathered and other chemical information by the public, State and local government, labor and industry.

- Providing support to activities aimed at promoting efficient and effective Federal toxic substances programs through cooperation with other Federal agencies at the regional level.

TESTING AND EVALUATION

1979 Accomplishments

In 1979, the Agency expended a total of $17,044,600 for this program, of which $3,591,700 was for Salaries and Expenses and $13,452,900 was for extramural purposes. During 1979, EPA made significant progress in implementing the TSCA Section 4 testing program. Two sets of health effects test standards were proposed, covering a wide range of effects (oncogenicity, chronic toxicity, combined oncogenicity/chronic toxicity, acute effects, subchronic effects, mutagenicity, teratogenicity, reproductive effects, and metabolism studies) and Good Laboratory Practices. The first Section 4 test rule was developed and will be proposed in early 1980. This rule will require toxicological health effects testing a number of chemicals recommended by the Interagency Testing Committee (ITC). While testing cannot be required categorically for all new chemicals under Section 4, manufacturers must submit to EPA all test data and other available information on a chemical before it is manufactured. In 1979, the Agency published in the Federal Register a discussion of the pertinent issues involved in developing testing guidelines for new chemicals and a compilation of reference test methods. Based on the comments received, proposed testing guidelines will be issued in 1980.

Multistage assessment processes have been implemented for new chemical and existing chemical evaluations. The premanufacture review program began in 1979, and the testing and evaluation program performed initial risk evaluations on each of the eleven new chemicals received. The existing chemical assessment program was fully operational. The number of Section 8(e) Notices of Substantial Risk received up through the end of 1979 totaled 310. All notices required evaluation and follow-up, with 20-25 percent requiring detailed follow-up. In 1979, eight chemicals reached the more detailed stages of review, with one, asbestos, the subject of a regulatory risk assessment, and another, nitrilotriacetic acid, the subject of a detailed risk assessment.

1980 Program

In 1980, the Agency has allocated a total of $29,962,400 to this program, of which $6,106,600 is for Salaries and Expenses and $23,855,800 is for extramural purposes under the Abatement, Control and Compliance appropriation. Continuing the development of the Section 4 testing program, we plan to propose three testing rules. The first will be the rule which was developed in 1979 for health effects testing. The second will require both health and environmental effects testing of chemicals, and the third will cover environmental effects testing for chemicals covered in the first two health effects testing rules. The Agency also plans to promulgate the first of these testing rules in 1980. The chemicals and categories in each of these testing rules will derive from the Interagency Testing Committee's (ITC) recommendations. We plan to promulgate the nine test standards proposed in 1979 in final form based on comments and public hearings held in October 1979, and to propose 12 additional test standards. Most of the latter will be environmental test standards, to be referenced in the second and third testing rules requiring environmental testing of chemicals in addition to health testing.

Testing and evaluation plans to provide risk assessment support to a fully operational premanufacture review program. Anticipating 400 new chemicals, the following assessments are planned: 392 Initial Reviews, 35 Intermediate Risk Assessments, and approximately 15 Full Risk Assessments in support of either Section 5(e) or Section 5(f) actions (new chemical control actions). We plan to perform 330 preliminary evaluations of existing chemicals, (including Section 8(e) Substantial Risk Notices) and 67 Chemical Hazard Information Profiles (CHIPs). In 1980, 17 chemicals are projected for the detailed review stages. Of these, four will be the subject of regulatory risk assessments, two of which will be the subject of actual proposed regulations in 1980.

1980 Explanation of Change from Budget Estimate

The net decrease of $6,682,600 results from several actions. An increase of $232,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and salary costs resulted in a decrease of $39,600 and $400,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $1,513,600 to this activity.

A reprogramming of $4,961,700 was made within the toxic substances media to information integration to correct the imbalance in resources and outputs between lead programs in testing, new chemical review and control, and existing chemical review and control and the support activities these programs require. These support activities include literature searching, monitoring, data processing and retrieval, document tracing, production and maintenance of the TSCA Inventory and industry assistance.

1981 Plan

The Agency requests a total of $30,423,600 and 207 permanent workyears for this program, of which $7,241,500 is for the Salaries and Expenses appropriation and $23,182,100 for the Abatement, Control and Compliance appropriation. In 1981, the Section 4 testing program will be close to fully operational. The Agency plans to promulgate the second and third testing rules proposed in 1980, and to propose three additional testing rules. These will require both health and environmental testing of chemicals and categories recommended by the Interagency Testing Committee (ITC). The nine test standards promulgated in 1980 will undergo annual review as mandated by TSCA; the 12 test standards proposed in 1980 will be promulgated; and 15 additional test standards will be proposed. This will allow for a comprehensive testing scheme aimed at cost-effectively evaluating a chemical's health and environmental effects. The test standards proposed in 1981 will include important health effects such as neurotoxicity and behavioral effects for which standards were not available initially. They will also include environmental test standards to be used in identifying the ecological effects and environmental fate of chemicals.

In the assessment area, the Agency plans strong programs both for new chemicals and existing chemicals. Anticipating 400 new chemicals, the plan is: 392 Initial Reviews, 26 Intermediate Risk Assessments, and approximately 16 Full Risk Assessments in support of Section 5(e) or Section 5(f) control actions. For existing chemicals, 330 Preliminary Evaluations (including Section 8(e) Substantial Risk Notices) and 67 Chemical Hazard Identification Profiles (CHIPs), 17 detailed reviews, and 4 in-depth risk assessments in support of control regulations will be conducted.

CHEMICAL CONTROL

1979 Accomplishments

In 1979, $6,681,300 was expended for this program. Of this, $2,275,100 was expended for salaries and expenses, and $4,406,200 for extramural purposes. The rules and forms were proposed for the implementation of the premanufacture notification program for new chemicals. Since this program is mandated by TSCA to be in effect 30 days after publication of the Initial Chemical Substances Inventory (published July 1, 1979), interim guidelines were published for operating the premanufacture notification program until final rules and forms are promulgated. In 1979, 11 "new" chemicals were reviewed for their potential health and environmental effects. In addition, during 1979 the roles of other EPA program offices' and Federal agencies' involvement in reviewing premanufacture notices were defined.

For existing chemicals (Section 6), the final rule banning the manufacturing, processing, distribution, and uses of polychlorinated biphenyls was promulgated. A technical assistance program was put in place to provide the technical information needed by school officials to assess and control the potential hazard from sprayed asbestos materials. The technical and economic feasibility of alternatives for the nonaerosol uses of chlorofluorocarbons was investigated. Work was begun on a generic labeling regulation for toxic and hazardous materials. Finally, three additional chemical investigations (asbestos use, dioxins, and benzidene dyes) were initiated.

Economic analysis was provided to support the regulatory activities listed above, to the rulemaking activities under Sections 8(a), 8(c), and 8(d) of TSCA, and to the testing rules under Section 4. A study on the economic costs for options under Section 13 regarding imports was completed and a 2-year study on the use of economic incentives to reduce nonaerosol emissions of chlorofluorocarbons was finished.

1980 Program

In 1980, the Agency has allocated a total of $11,353,800 to this program, of which $4,618,100 is for the Salaries and Expenses appropriation and $6,735,700 is for extramural purposes under the Abatement, Control and Compliance appropriation. These resources will be used for economic analysis, the development of existing chemical control rules, and for support of the new chemical review process.

The final rules and forms for implementing the new chemical review process will be promulgated. Four hundred (400) chemicals are expected to be received and they will be initially screened for hazard based on the notice data. Effects and exposure data will be screened and selected chemicals will be subjected to further assessment. Notices that do not comply with the rules or that have insufficient data will be subject to a prohibition or limitation order pending development of additional information. If an unreasonable risk is determined to exist, an injunction or administrative order banning or controlling the chemical (approximately 15) will be issued within the notice period. Chemicals that do not warrant immediate controls but might do so in the future (e.g., if exposure were to increase) will be the subject of significant new use rules. Arrangements will be made to provide to other offices or agencies information received in premanufacture notices that would be useful to implementing other statutes.

For existing chemicals, a generic labeling rule will be proposed in conjunction with OSHA. Two asbestos rules will be proposed in 1980; one, on the control of asbestos in school building and one, on asbestos use. A regulatory decision on the nonaerosol uses of chlorofluorocarbons will be made and implemented. The requests for exemptions to the PCB rules (mandated by TSCA) will be processed and a rule prohibiting PCBs in food processing plants will be proposed and made final in 1980. Several chemicals or classes of chemicals will be investigated for possible regulatory action in 1981, including 1, 2-dichloroethane and benzene.

Economic analysis will be provided for the premanufacture review program, the regulatory actions on existing chemicals, for the impact of testing regulations, and for information gathering rules under Section 8 of TSCA. Three major economic studies will be started in 1980. They are: (1) testing laboratory availability, (2) a risk-benefit study, and (3) a study on the overall impact of TSCA on the chemical industry.

1980 Explanation of Change from Budget Estimate

The net decrease of $777,600 results from several actions. An increase of $163,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and salary costs resulted in a decrease of $30,700 and $400,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $510,600 to this activity.

1981 Plan

The Agency requests a total of $11,884,000 and 147 permanent workyears for this program, of which $5,151,000 is for the Salaries and Expenses appropriation and $6,733,000 for the Abatement, Control and Compliance appropriation. About 400 new chemicals are expected to be reviewed. Data provided from the notice, as well as additional data received from literature searches and reporting, will be used to select chemicals for complete assessments. Of these, 16 may warrant regulatory action and other new chemicals will be subject to significant new use rules (SNURs) or to referrals to other EPA programs or other Agencies.

For existing chemicals, rulemaking will continue on those chemicals selected in 1980. Additional chemicals will be selected for control in conjunction with the risk assessment process and from referrals of additional chemicals which may present an unreasonable risk. The two asbestos rules and the labeling rule proposed in 1980 will be promulgated in 1981. Generic chemical classes will be studied for possible regulatory action including an investigation of solvents.

Economic analyses will be completed for existing chemicals that are being regulated. Analyses will also be conducted on regulations under Section 5, and to support other toxic substances program regulations, including testing guidelines and recordkeeping and reporting. The three studies started in 1980 will be completed and published.

INFORMATION INTEGRATION

1979 Accomplishments

In 1979, the Agency expended a total of $16,650,600 for this program, of which $5,214,000 was for salaries and expenses and $11,436,600 was for extramural purposes. Programs established in 1978 which were maintained and enhanced included Section 8 recordkeeping and reporting, toxic substances integration, public participation, chemical information systems and services, monitoring survey and analysis, and assistance to industry. Program accomplishments in 1979 included:

- Publishing the Inventory of Chemicals in Commerce required by Section 8(b) of TSCA and making it available to the public in hard copy, computer tape, and microfiche form.

- Establishing the support services contracts to conduct materials balances, exposure assessments and statistical design and analysis for chemicals undergoing assessment or subject to regulatory action.

- Continuing to maintain, update and enhance the data base for the Inventory of Chemicals in Commerce.

- Conducting literature and data base searches, material balance studies and exposure assessments as required to support pre-manufacturing notice review, risk assessment, testing, chemical control regulation and chemical recordkeeping and reporting rule development.

- Obtaining the concurrence of 24 nations' environmental ministers that chemical control harmonization is the top priority for the Organization for Economic Cooperation and Development (OECD) environment program.

- Developing an outstanding record of information and assistance to industry.

- Supporting three regional pilot programs to foster public participation and establishing a program to encourage public involvement in TSCA rule development..

- Funding toxic substances information programs in five states utilizing the authority of Section 28 of TSCA.

1980 Program

In 1980, the Agency has allocated a total of $20,205,700 to this program, of which $7,165,500 is for Salaries and Expenses and $13,040,200 is for extramural purposes under the Abatement, Control and Compliance appropriation. Information integration will:

- Propose 13 recordkeeping and reporting rules under the authority of TSCA Sections 8, 12, 13 and 20 and promulgate nine rules.

- Establish a capability to analyze available chemical data bases to identify chemicals of concern for testing, risk assessment and regulation.

- Begin to operate three additional modules of the Chemicals in Commerce Information System for health and safety data, pre-manufacturing notification data, and testing data.

- Revise policies and procedures for protection of confidential business data.

- Provide all necessary literature searching, document control and tracking, materials balance studies and exposure assessments to support test rule development, premanufacturing notification review, risk assessment, and chemical control.

- Provide second year funding for three regional public participation programs.

- Provide funding for public involvement in development of three proposed chemical control regulations.

- Begin to operate both the preprototype and the prototype of the interagency Chemical Substances Information Network (CSIN).

- Provide funding to up to eight additional states under the authority of Section 28 of TSCA.

- Reach agreement with OECD members on consistent test methodologies for chemicals in commerce, a common base set of data to be generated for new chemicals, and the general principles of good laboratory practices to assure data quality.

- Publish the Revised Inventory of Chemicals in Commerce.

1980 Explanation of Change from Budget Estimate

The net increase of $4,659,200 results from several actions. An increase of $158,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and salary costs and $1 million to ADP costs resulted in a decrease of $29,700, $200,000, and $60,000, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $171,600 to this activity.

A reprogramming of $4,961,700 was made within the toxic substances media from testing and evaluation to correct the imbalance in resources and outputs between lead programs in testing, new chemical review and control, and existing chemical review and control and the support activities these programs require. These support activities include literature searching, monitoring, data processing and retrieval, document tracking, production and maintenance of the TSCA Inventory and industry assistance.

1981 Plan

The Agency requests a total of $20,618,800 and 130 permanent workyears for this program, of which $6,879,100 is for the Salaries and Expenses appropriation and $13,739,700 is for the Abatement, Control and Compliance appropriation. In 1981, the program will:

- Double the number of chemical substances included in the identification component of CSIN and add six major data bases to the system.

- Make CICIS fully operational to provide computer support to assist in TSCA regulatory decision-making.

- Propose nine additional recordkeeping and reporting rules and promulgate 11 rules.

- Continue to analyze available chemical data bases for selecting and ordering chemicals of concern of TSCA.

- Begin several new toxic chemical anticipatory monitoring projects.

- Continue to fully support testing, premanufacturing notification review, risk assessment, chemical control regulation development and recordkeeping and reporting rule development, using information systems and services, monitoring programs and industry assistance.

TOXICS MANAGEMENT

1979 Accomplishments

In 1979, the Agency expended a total of $1,073,300 for this program, of which $1,032,900 was for salaries and expenses and $40,400 was for extramural purposes. The regions have:

- Largely completed defining and refining the appropriate processes for integrating toxic substances activity in the regions.
- The first round of State/EPA cooperative agreement awards under Section 28 of TSCA has been completed; toxic substances staff in three regions are managing these agreements.
- States from nine regions applied for funding in the second round; regional staff provided assistance to applicants.
- The regions have been engaged in a concerted effort to work with State and local health, environmental, and education offices to implement EPA's program to identify and correct asbestos problems in schools.
- Regional staff represent EPA on the Interagency Regulatory Liaison Group and participate actively in several regulatory working groups.
- All regions have established and are operating toxics information activities.
- The regions have also established industry and public assistance programs, including information dissemination and conducting or participating in training sessions directed to specific rules such as premanufacturing notification.

1980 Program

In 1980, the Agency has allocated a total of $1,231,600 to this program, of which $1,151,600 is for Salaries and Expenses and $80,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

- The most substantial regional efforts will be devoted to the Voluntary School Asbestos Program, to managing the eight State/EPA cooperative agreements awarded in 1979 and 1980, to continued efforts to integrate inter-media regional toxic substances programs, and to industry and public assistance programs.
- TSCA implementation efforts will shift, from regional input to rulemaking, to regional enforcement.
- A major new program will educate various public and private groups as to the availability and utility of several chemical information data bases, and inform regional managers, through analyses of these information sets, of heretofore unsuspected problems -- particularly those unique to the region.

1980 Explanation of Change from Budget Estimate

The net increases of $11,700 results from several actions. An increase of $45,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $5,800 and $300, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $3,400 to this activity.

The regional offices reprogrammed funds in order to cover projected costs based on 1979 expenditures, from solid waste, $30,400; to water quality, $7,000; to interdisciplinary $24,400; to management and support, $11,500; to pesticides, $21,700; and from toxic substances enforcement, $3,500.

1981 Plan

The Agency requests a total of $989,400 and 18 permanent workyears for this program, of which $909,400 is for the Salaries and Expenses appropriation and $80,000 is for the Abatement, Control and Compliance appropriation. The 1981 regional toxics management program will be limited to:

- Providing adequate and timely assistance to industry and the public.
- Apprising various public and private groups of the availability and utility of chemical information in most regions through headquarters contractual support.
- Continuing regional participation in the Voluntary School Asbestos Program.
- Management of EPA/State cooperative agreements will become a headquarters responsibility.

TOXIC SUBSTANCES

Toxic Substances Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Toxic Substances Enforcement:					
Salaries and Expenses	$2,254	$2,771	$2,455	$2,711	+$256
Abatement, Control and Compliance	1,005	1,025	1,489	2,481	+992
Total	3,259	3,796	3,944	5,192	+1,248
Permanent Positions	48	78	73	86	+13
Full-time Equivalency	70	82	82	95	+13

Budget Request

A total of $5,191,600 and 86 permanent workyears is requested in 1981 for this program. Included in this total is $2,710,800 for Salaries and Expenses, and $2,480,800 for Abatement, Control, and Compliance, with increases of $256,100 and $991,700, respectively. These resources are to carry out the enforcement provisions of regulations implementing the Toxic Substances Control Act (TSCA) and to enforce the provisions of the Act. The increase of 13 permanent workyears and $1,247,800 is necessary because of the increased number of enforceable rules promulgated under the Act which will require enforcement in 1981.

Program Description

The EPA toxic substances enforcement program is administered pursuant to the Toxic Substances Control Act (TSCA). The toxic substances enforcement program is responsible for developing the enforcement provisions of regulations implementing TSCA and for enforcing the Act. The enforcement program assists in the development of regulations to control specific chemical substances and mixtures and to assure the development and submission of reliable data relating to toxic chemicals, and prepares and executes enforcement strategies to implement these regulations.

The toxic substances enforcement program also engages in response to toxic emergencies involving substantial threats to public health or the environment and in taking appropriate action to abate such emergencies, through either legal or administrative proceedings.

A major function of the toxic substances enforcement program is the inspection of chemical manufacturing, processing, and distribution facilities whose activities are regulated under the Act and its implementing regulations. Inspections of such facilities lead to prosecutions of violators discovered during the inspections. Violators may be prosecuted either through administrative civil proceedings or by judicial proceedings in which a court may impose a number of civil or criminal sanctions.

1979 Accomplishments

Resources for this program were $3,259,400. Contracts in the amount of $1,005,100 were established for inspection support, sample chemical analysis, and revisions or additions to inspector, attorney, and case proceedings manuals. In 1979:

- Interim enforcement strategies were completed for Section 4 (testing), Section 5 (new chemicals), Section 8 inventory, Section 8(c), Section 8(e), and for the CFC ban and the PCB ban regulations.

- A final overall TSCA enforcement strategy was developed, as was a final PCB marking and disposal regulation enforcement strategy.

- Assistance was provided to the Office of Toxic Substances in the development of new regulations.

- Regulatory audiences affected by all new TSCA regulations were identified, and inspection procedures and regional implementation guidance for new regulations were developed.

- An interim penalty policy was completed, draft consolidation rules of practice were prepared, and a draft PCB inspection manual was completed.

- Assistance was provided in developing health effects standards, good laboratory practices for health effects, draft ecological effects test standards, and inspection procedures for ecological effects testing under Section 4.

- Program staff also participated in the PCB exemptions hearings, participated in the preparation of numerous imminent hazard cases involving illegal disposal, handling, or treatment of chemical substances, conducted inspections of CFC manufacturers, initiated investigations and prosecuted cases under Sections 6, 8(e), and 17, and assisted the regions in developing and prosecuting enforcement cases.

- The regional staff responded to emergency incidents, inspected PCB and CFC establishments, conducted compliance monitoring activities under the Section 8(a) inventory provisions, investigated instances of noncompliance with Section 8(e) substantial risk notification, and developed and prosecuted enforcement cases upon detection of violations.

1980 Program

1980 resources for this program are $3,943,800 and 73 permanent workyears, of which $2,454,700 is for Salaries and Expenses and $1,489,100 is for extramural purposes under the Abatement, Control and Compliance appropriation. Contract funds amounting to $1,396,600 will be used for laboratory sample analyses, inspectional support, and development and revision of enforcement strategies.

The 1980 toxic substances enforcement program will continue to have as its first priority at both headquarters and the regional offices the initiation of enforcement actions in emergencies involving substantial threats to public health, safety, and the environment. Important headquarters activities include the development of a final penalty policy and completion of final enforcement strategies for the PCB ban and the CFC ban regulations, Section 4 (testing), Section 5 (new chemicals), Section 8 inventory, Section 8(c), and Section 8(e). Final consolidated rules of practice and a final PCB inspection manual are also to be completed in FY 1980.

In addition, the regional offices will conduct 594 inspections related to Section 6 chemical control regulations including PCB marking and disposal, PCB ban, and CFC ban, and 50 inspections of facilities subject to the requirements of Section 8. As appropriate rules are developed and become enforceable for Section 4, Section 5, Section 12, and Section 13 additional inspections will be conducted under those sections. Enforcement cases will be developed and prosecuted as appropriate upon the detection of violations.

1980 Explanation of Change from Budget Estimate

The net increase of $148,200 results from several actions. An increase of $82,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $24,700 and $11,100, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $116,600 to this activity.

The regional offices reprogrammed funds to cover projected costs based on 1979 expenditures from water quality, $4,900; to drinking water, $12,900; to management and support, $3,500; and to toxic substances management, $3,500.

1981 Plan

A total of $5,191,600 and 86 permanent workyears is requested for this program in 1981, of which $2,710,800 is for the Salaries and Expenses appropriation and $2,480,800 for the Abatement, Control and Compliance appropriation. The overall increase of 13 permanent workyears and $1,247,800 is necessary because of the increased number of enforceable rules promulgated under the Act requiring enforcement in 1981. Approximately $1,426,000 is designated for contracts and will include laboratory analyses of samples, inspectional support, and development and revision of enforcement strategies. Pilot cooperative enforcement grants account for $1 million of the increase.

In 1981, the toxic substances enforcement program again will have as its first priority the initiation of enforcement actions in emergencies involving substantial threats to public health, safety, or the environment. Headquarters staff will be responsible for the management and execution of national programs to implement and enforce Section 4 testing regulations, Section 5 new chemicals regulations, Section 6 chemical control regulations (PCBs, CFCs, and others in place by 1981, including asbestos and generic labeling), Section 8 reporting regulations, Section 12 export requirements, and Section 13 import requirements. Headquarters will also provide enforcement participation in regulation development directed by the Office of Toxic Substances, and for support to the regional offices in the development and prosecution of enforcement cases. Under Section 4, headquarters staff will conduct 55 laboratory audit inspections and will initiate appropriate enforcement cases, and in selected criminal cases and appealed civil cases, headquarters staff will also participate directly in case prosecution. The establishment and management of a national contract for inspection and sample analysis functions will be a headquarters responsibility, as will the audit and evaluation of the national toxic substances enforcement program. Technical support will be provided to the regional offices in major enforcement cases. Toxics Enforcement Policy Statements (TEPS) will be developed and published to alert the public to major enforcement policy determinations. Finally, a program of developing pilot cooperative enforcement grants with selected States will be developed and implemented. Present plans envision grants with about six States, based upon the presence of regulated chemical industries, especially those related to PCBs, and the existence of appropriate State statutory authority. A total of $1,000,000 in 1981 resources has been designated for this purpose.

In addition to the above, the regional offices will conduct about 952 inspections of facilities subject to Section 6 chemical control regulations, including requirements relating to PCB marking and disposal, PCB ban, CFC ban, asbestos, labeling, and other enforceable rules as they are developed. The regions will conduct 79 good laboratory practices (GLP) and test rules inspections for Section 4 testing regulations, 188 inspections under Section 5 new chemicals regulations, 55 inspections under Section 8 reporting requirements, 460 Section 12 export inspections, and 260 Section 13 import inspections. In all cases, enforcement actions will be initiated as appropriate. Regional staff will assist headquarters in the development of pilot State grants. Voluntary compliance with statutory requirements on the part of industry will be stressed through contracts with State enforcement personnel and affected industry representatives.

DRINKING WATER

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
	(dollars in thousands)					
Appropriation						
Salaries and Expenses...	$16,105	$18,166	$19,940	$22,013	+$2,073	
Research and Development	12,157	17,358	15,621	20,229	+4,608	
Abatement, Control and Compliance.....	39,425	46,795	41,164	44,663	+3,499	
Total.....	67,687	82,319	76,725	86,905	+10,180	
Permanent Workyears.....	440	506	518	537	+19	
Full-time Equivalency...	528	600	610	638	+28	
Outlays.....	59,977	66,450	64,200	74,000	+9,800	
Authorization Levels....	116,150	Pending	66,650	88,000	+21,350	
PROGRAM HIGHLIGHTS						
Public Sector Activities:						DW-11
Salaries and Expenses...	$4,917	$5,734	$6,569	$6,643	+74	
Research and Development	11,702	17,210	15,188	19,796	+4,608	
Monitoring and Technical Support:						DW-21
Salaries and Expenses...	501	577	555	575	+20	
Research and Development	455	148	433	433	...	
Total:						
Salaries and Expenses...	5,427	6,311	7,124	7,218	+94	
Research and Development	12,157	17,358	15,621	20,229	+4,608	
Total, Research and Development Program.....	17,584	23,669	22,745	27,447	+4,702	
Criteria, Standards, and Guidelines:						DW-24
Salaries and Expenses...	$4,056	$3,720	$5,017	$5,458	+$441	
Abatement, Control and Compliance.....	5,241	5,500	5,052	3,837	-1,215	
State Program Resource Assistance:						DW-29
Salaries and Expenses...	...	...	...	...	...	
Abatement, Control and Compliance.....	33,938	38,795	34,745	39,574	+4,829	
Drinking Water Management:						DW-33
Salaries and Expenses...	6,153	7,300	6,928	8,582	+1,654	
Abatement, Control and Compliance.....	198	2,500	1,301	1,243	-58	
Total:						
Salaries and Expenses...	10,209	11,020	11,945	14,040	+2,095	
Abatement, Control and Compliance.....	39,377	46,795	41,098	44,654	+3,556	
Total, Abatement and Control Program.....	49,586	57,815	53,043	58,694	+5,651	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
Drinking Water Enforcement:						DW-37
Salaries and Expenses...	469	835	871	755	-116	
Abatement, Control and Compliance.....	48	...	66	9	-57	
Total, Enforcement Program	517	835	937	764	-173	
Permanent Positions						
Public Sector Activities..	120	122	120	130	+10	DW-11
Monitoring and Technical Support.....	11	9	10	10	...	DW-21
Total, Research and Development Program.....	131	131	130	140	+10	
Criteria, Standards, and Guidelines.....	87	103	106	101	-5	DW-24
State Program Resource Assistance.....	...	...	...	...	...	DW-29
Drinking Water Management.	217	264	252	269	+17	DW-33
Total, Abatement and Control Program.....	304	367	358	370	+12	
Drinking Water Enforcement, Total Enforcement Program	15	31	33	28	-5	DW-37
Full-time Equivalency						
Public Sector Activities..	159	163	161	174	+13	DW-11
Monitoring and Technical Support.....	10	9	14	14	...	DW-21
Total, Research and Development Program.....	169	172	175	188	+13	
Criteria, Standards, and Guidelines.....	100	119	124	119	-5	DW-24
State Program Resource Assistance.....	...	...	...	...	...	DW-29
Drinking Water Management.	241	276	276	299	+23	DW-33
Total, Abatement and Control Program.....	341	395	400	418	+18	
Drinking Water Enforcement, Total Enforcement Program	18	34	34	32	-2	DW-37

OVERVIEW AND STRATEGY

Assuring the safety of drinking water is primarily the responsibility of the State and local governments. However, Congress provided that the Federal Government share in this responsibility through standard setting and providing assistance and reinforcement for State and local efforts. To assist the States in their efforts to provide safe drinking water, Congress has provided financial assistance for building and strengthening their efforts to meet the mandates of the Safe Drinking Water Act.

Prior to the passage of the Safe Drinking Water Act (SDWA) in December 1974, the Public Health Service Act and the Interstate Quarantine Regulations provided the only statutory authority for the Federal drinking water program. With the enactment of the Safe Drinking Water Act (an amendment to the Public Health Service Act), EPA's authorities and responsibilities were significantly increased. The Act requires that EPA develop and promulgate national drinking water standards. It also established two major programs -- the public water system supervision program (PWS) which is designed to ensure the safety of drinking water provided by public water systems, and the underground injection control program (UIC) which is designed to protect present and future underground sources of drinking water from contamination through injection wells.

Standards Development

EPA is required to establish primary drinking water regulations which specify maximum permissible contaminant levels to protect the public health and secondary drinking water regulations which deal with the aesthetic quality of the drinking water. Interim primary drinking water regulations which cover such contaminants as bacteria, turbidity, and certain inorganic chemicals, pesticides and radionuclides have been in effect since June 1977. These standards have been revised (1979) to regulate chloroform and other trihalomethanes. The program will also develop additional maximum contaminant levels, revise existing standards to incorporate new data, and develop a regulatory approach to control contaminants which may increase the incidence of cardiovascular diseases. Existing implementation regulations will be modified to reflect modifications to the primary drinking water regulations. In addition, underground injection control program regulations will be promulgated. A ground water protection strategy will be developed for the Agency. The 1981 program will focus on the establishment of Revised National Primary Drinking Water Regulations which will include maximum contaminants levels (MCLs) for 10 organic chemicals and MCLs or treatment requirements for 10 inorganic chemicals, virus and protozoa; implementation of Interim Primary Drinking Water Regulations for trihalomethanes and national oversight of the public water systems and underground injection control programs; and oversight of the sole source aquifer program. In addition, guidance documents for the implementation of the ground water strategy will be developed.

Public Water System Supervision

Since the PWS program includes approximately 60,000 community and 240,000 non-community water systems, State participation is essential to the successful implementation of the Act. Forty-five (45) States (including one approved in early 1980) have primary enforcement responsibility for the PWS program with an additional six expected to achieve primacy during the remainder of 1980. In 1981, program activities will concentrate on oversight of primacy States and program implementation in non-primacy States and on Indian lands, improving State and EPA performance and strengthening follow-up action where non-compliance occurs. In primacy States, the regions will conduct evaluations of State primacy programs and will continue to certify laboratories, provide assistance to the States in implementing the organic regulations; provide emergency response; conduct public hearings and training programs and review monitoring reports, violations and data used in granting variances and exemptions. In non-primacy States, regional activities will focus on bringing non-complying systems into compliance. In support of this, laboratory certification, sanitary surveys, review of variances and exemptions requests, review of enforcement actions, follow-up on ensuring compliance, and follow-up on public notification will be conducted.

60-531 O - 80 - 46

Control of Underground Injection

The Safe Drinking Water Act requires EPA to establish regulations for State underground injection control programs in order to protect underground sources of drinking water. EPA has designated 41 States as requiring underground injection control programs and will designate the remaining States during 1980. Of the 23 States which were first designated by the Administrator as requiring an underground injection control program, 11 States are expected to assume primacy for the program during 1981. For the remaining 12 States that do not qualify for or do not intend to assume primacy, EPA must develop and implement either partial or full programs. In addition, EPA must develop and implement a program on all Indian lands. EPA will actively work with the 11 primary States to assure the development of a sound program and will provide assistance to the 19 States that are working toward primacy.

Surface Impoundment Assessment

Under the statutory authority of Section 1442 of the SDWA, EPA initiated an inventory and assessment of surface impoundments to determine the nature and extent of contamination potential of various types of surface impoundments. Grants were awarded to 50 States to conduct the assessment. In those States which chose not to apply for a grant, the assessments were conducted by universities or private organizations and the EPA regional office. Data and reports for all 57 States and territories will be analyzed and regional comments will be reviewed. During 1981, the final report will be completed and transmitted to the Congress with recommendations for the control of ground water contamination from surface impoundments.

Sole Source Aquifers

Under Section 1424(e) of the Safe Drinking Water Act, an aquifer or portion thereof may be designated as a sole or principal source of drinking water if it is determined that in fact it is the sole or principal source of drinking water and that contamination of this source would create a significant hazard to public health. The designation process may be initiated by EPA, by a petition from the State, or by petition from interested parties. To date six aquifers have been designated as sole and/or principal sources of drinking water.

All projects assisted with Federal financing within an area designated as a sole or principal source aquifer may be subject to a review. If the Administrator determines during this review process that the project will create a significant hazard to public health, the Federal funds associated with the project may be denied. The project may be redesigned so as not to contaminate the sole or principal source aquifer and Federal financial assistance may be rendered at that time. One federally financed project in San Antonio, Texas, was halted temporarily because of possible contamination of a sole source aquifer. Modifications were required to work plans to ensure that the designated aquifer would not be contaminated; the project resumed after the revisions were adopted.

During 1980, it is estimated that three aquifers will be designated as sole or principal sources of drinking water and five new petitions will be reviewed. During 1981, it is expected that five petitions will be received and three sole source aquifers will be designated.

Research and Development

The long-range goal and overall concept of the research and development program is the provision of a scientific basis for assuring safe supplies of drinking water for the people of this country. This means that the research is designed to yield data to help determine the need to regulate specific substances, and if there is such a need, to help determine the levels at which standards should be set. To achieve its goal, the program is linked with the activities of EPA's Office of Drinking Water. The program addresses a spectrum of organic, inorganic and microbiological contaminants in water supplies, as well as the protection of ground water, a major source of drinking water in this country. The program is composed of three main disciplinary types of research: health effects; control technology and ground water; and quality assurance.

In the health effects area, the research emphasizes carcinogenic effects of organic contaminants, including those associated with disinfection practices. This part of the program supports chronic toxicity and epidemiology studies, as well as shorter-term types of studies, for important organics to provide data for setting maximum contaminant levels. The health program also emphasizes cardiovascular effects from inorganic contaminants and gastrointestinal illnesses related to microbial contaminants. In addition, support is provided to a coordinated research effort on the reuse of waste water for potable purposes.

As in the health area, the control technology or treatment portion of the program emphasizes organics, including those from disinfection. Overall, this part of the program develops detection and measurement methods to quantify contaminants and is concerned with providing treatment methods to avoid forming contaminants or reduce them to acceptable levels. The work on organics wil focus on measurement and control. The treatment program includes an emphasis in means of controlling inorganic contaminants, including asbestos, as well. In addition, microbiological occurrence, detection, and control are receiving attention because outbreaks of waterborne disease still occur in the U.S., especially in poorly operated treatment and distribution systems. In 1981, an initiative is planned to focus on finding practical, cost effective processes to meet the needs of small communities which have difficulty in complying with state and national drinking water standards. The ground water portion of the program develops new and improved methods of detecting and assessing contamination and methods for determining the adsorption, movement and transformation of contaminants in the subsurface environment. Again, the emphasis is on organic contaminants and on viruses.

The quality assurance portion of the program is concerned with ensuring precise, accurate, and reliable measurement data for official use. This effort develops quality control procedures and guidelines to document data for official use, measure systems performance. In addition, the program supports the development of criteria and procedures for on-site evaluation and certification of laboratories with drinking water monitoring and analysis. Because it is an integral part of the research and development effort on drinking water, the emphases in this work are closely paralliel to those of the other portions of the program. In addition, the quality assurance effort focuses on contaminants for which regulations have been promulgated, to help insure their proper implementation, and focuses on substances being considered for regulation as well.

Enforcement

For 1981, the highest priority of the drinking water enforcement program will continue to be enforcement response in emergency situations presenting substantial endangerment to public health and safety.

Program efforts not expended on emergency actions will be used in the preparation of enforcement actions where violations of primary water standards have occurred (non-primacy States). In addition, EPA will overview the 45 primacy State PWS programs, to see that all State programs are adequately enforcing PWS requirements. Legal assistance will be made available to the Office of Drinking Water and all Regional Drinking Water branches in conjunction with variance and exemption issuance activities and in support of laboratory certification efforts.

Enforcement program activities for 1981 will also include review and approval for the enforcement sections of primacy applications for both Public Water Systems and Underground Injection Control programs, and preparation for implementing UIC compliance monitoring and enforcement programs in non-primacy States.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Drinking Water Program.....	$76,725
Salaries and Expenses.....	+2,073
The primary increase is for additional regional implementation resources for the UIC and the public water systems supervision programs, and for drinking water treatment and ground water protection and standards and regulations development.	
Research and Development.....	+4,608
The major portion of this increase, $4.3 million is an initiative to develop cost-effective technology for small water systems (pop. 10,000 and under). The additional $.3 million will be used to conduct research on health effects of contaminants in drinking water as they relate to human reproduction and early childhood development.	
Abatement, Control and Compliance.....	+3,499
The net increase of $3.5 million represents $4.2 million additional grants to the States to support the establishment of State underground injection control programs, $1.1 million for special studies and demonstrations to provide continued support to rural water associations, and a decrease of $1.2 million in criteria, standards and guidelines development which funded extra-mural projects relating to the additives program and a decrease of $.5 million due to to the nonrecurring training activity.	
1981 Drinking Water Program.....	86,905

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Estimate

An appropriation of $86,904,900 is requested for 1981. This request, by appropriation account, is as follows:

Salaries and Expenses.....	$22,012,300
Research and Development.....	20,228,700
Abatement, Control and Compliance....	44,663,900

This request represents an increase of $10,180,300 and provides for additional grants to the States to support the establishment of State UIC programs ($4.2 million), and for continued support to rural water associations ($1.1 million). An increase of $4.3 million will support the development of cost-effective technology for small water systems (10,000 population and under). An increase of $.3 million is to conduct research on health effects of contaminants in drinking water.

2. Changes from Orginal Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate	$82,319
Congressional change:	
UIC grants	-3,400
Travel	-59
Supplies and expenses	-21
ADP	-36
Academic training	+350
Reprogramming for authorized workyears	-154
Proposed pay raise supplemental	+657
Miscellaneous reprogramming	-2,931
Current 1980 estimate	76,725

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$67,687	$79,054
Effect of congressional changes	-3,166	...
Effect of reprogrammings	-3,085	...
Proposed pay raise supplemental	+657	...
Change in amount of carryover funds available	+1,963	-2,329
Program increase	+11,000	+9,105
Change in rate of obligation	+3,998	...
Total estimated obligations	79,054	85,830
(From new obligation authority)	69,121	(78,226)
(From prior year funds)	(9,933)	(7,604)

Congressional changes, reprogrammings, and the proposed pay raise supplemental discussed in the previous section are expected to result in a decrease of $5,594,000.

The amount of carryover funds to be obligated in 1980 is $9,933,000, an increase of $1,963,000 over the 1979 level. In 1981, it is estimated that $7,604,000 of carryover funds will be obligated, a decrease of $2,329,000 from the 1980 level.

The 1980 increase in budget authority was previously estimated to increase obligations by $11 million. In 1981, the program increase is expected to result in increased obligations of $9,105,000. A change in the rate of obligation is expected, thereby increasing obligations by $3,998,000.

Purpose - Research and Development Program

The research and development effort supports implementation of P.L. 93-523, the Safe Drinking Water Act of 1974. Research and evaluations are conducted relating to: (1) causes, diagnosis, and prevention of diseases and other impairments in man resulting directly or indirectly from contaminants found in drinking water; (2) the treatment and control of those contaminants; and (3) the provision of dependable, economical, and safe supplies of water, including the protection of underground sources of drinking water. Research is also conducted to develop and implement quality assurance procedures and protocols for water supply laboratories to assure that laboratory analytical data are accurate and valid.

Purpose - Abatement and Control Program

The abatement and control program provides for the protection of public health and underground drinking water sources through the development of regulations and standards and the development of such programs as mandated by the Safe Drinking Water Act, as amended. These activities include the promulgation of primary and secondary drinking water regulations which include maximum contaminant levels, the establishment of minimum requirements for State public water systems supervision and underground injection control programs and the Federal implementation of these programs where necessary.

The main priority for this program is the protection of the public from harmful contaminants found in drinking water. The abatement and control program has used the following approach to implement this priority. Through the development and implementation of drinking water standards and regulations, the health quality of drinking water may be assured. Realizing the increased administrative costs to administer a program which assures the safety of drinking water, the Federal Government has provided financial assistance to those States which satisfy minimum Federal requirements and bear primary enforcement responsibility. In addition, technical assistance and oversight are available to help States implement their programs.

The abatement and control program is divided into the following activities:

Criteria, Standards and Guidelines - This subactivity relates to the development of standards and regulations designed to control the quality of drinking water to protect the public health and welfare; to the development of regulations establishing minimum requirements for public water systems and underground injection control programs; and to the development of guidance documents to assure uniform program implementation. It further includes the development, review and application of information from studies on health effects, control technology, and monitoring of hazardous substances such as toxic chemicals from natural and synthetic sources to establish or revise primary drinking water regulations. Economic analyses are conducted to determine the impact of regulations. In addition, national program oversight and evaluations of public water systems supervision, underground injection control and sole source aquifer programs are conducted; and management information systems are maintained.

State Program Resource Assistance - This subactivity relates to the provision of financial assistance to support State activities in the implementation of the public water systems supervision and underground injection control programs. It also provides for grants to assist State rural water associations in the development and demonstration of technical assistance and training programs to assist small rural water systems in complying with the mandates of the Safe Drinking Water Act. Fellowships and grants to academic institutions are awarded to provide for continuing education to State and local staff working in the drinking water field including ground water protection.

Drinking Water Management - This subactivity is related to the implementation of regulatory requirements of the public water systems and underground injection control programs for which the Federal Government is responsible. This includes program oversight and evaluation of States with primacy, as well as program implementation in States without primary enforcement responsibility and on Indian lands. Other activities included are technical assistance to all States in the implementation of public water systems supervision programs and in the establishment and adminstration of underground injection control programs, emergency assistance, administration and implementation of the sole source aquifer programs; and coordination with water quality management planning and solid waste programs.

Purpose - Enforcement Program

It is the goal of the drinking water enforcement program to see that all applicable parties comply with standards established under the Safe Drinking Water Act, regulating public water system and underground injection control operations. The program's highest priority is initiation of enforcement actions, if required, in response to emergency situations. Also fundamental to system or facility compliance with PWS and UIC standards is the Agency's establishment and operation of enforcement programs in States which have not yet implemented enforcement programs (non-primacy States). In States which have enforcement programs, EPA provides legal and technical assistance as required and overviews State activities to ensure that primacy States adequately enforce requirements of the Act.

DRINKING WATER

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
PROGRAM LEVELS					
Number of States with primary enforcement responsibility for Public Water Systems Supervision programs.....	44	54	51	51	...
Number of States with primary enforcement responsibility for Underground Injection Control programs.....	...	...	...	11	+11
Underground injection control grants.....	19	57	44	57	+13
Variances and exemptions granted by EPA in non-primacy States.....	12	180	180	150	-30
Sole source aquifer petitions received.....	2	14	5	5	...
Sole source aquifer designations.....	1	6	3	3	...
Laboratories certified.....	100	126*	100	100	...
Enforcement actions.....	2	20	20**	40**	+20

*Labs in non-primacy States.

**Includes compliance agreements and court cases.

DRINKING WATER

Public Sector Activities

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Health Effects:					
Salaries and Expenses.	$2,141	$2,769	$3,462	$3,054	-$408
Research and Development.....	4,410	9,472	8,561	9,305	+744
Treatment and Ground Water Protection:					
Salaries and Expenses.	2,776	2,965	3,107	3,589	+482
Research and Development.....	7,292	7,738	6,627	10,491	+3,864
Total:					
Salaries and Expenses.	4,917	5,734	6,569	6,643	+74
Research and Development.....	11,702	17,210	15,188	19,796	+4,608
Grand Total.....	16,619	22,944	21,757	26,439	+4,682
Permanent Positions					
Health Effects.....	52	54	52	52	...
Treatment and Ground Water Protection.....	68	68	68	78	+10
Total.....	120	122	120	130	+10
Full-time Equivalency					
Health Effects.....	71	75	73	73	...
Treatment and Ground Water Protection.....	88	88	88	101	+13
Total.....	159	163	161	174	+13

Budget Request

The Agency requests a total of $26,438,300 and 130 permanent workyears for 1981, an increase of $4,681,800 from 1980. Included in this total is $6,642,600 for Salaries and Expenses and $19,795,700 for Research and Development, with an increase of $74,000 and $4,607,800, respectively. The major portion of this increase, $4,345,000, is an initiative focused specifically on the needs of small systems (population 10,000 and under), which comprise 80-90 percent of all drinking water systems. The initiative will develop cost-effective technology and will illustrate multi-community cooperative arrangements for services to assist these communities in meeting national and state drinking water standards. The additional funding of $336,800 will enable EPA to conduct research on health effects of contaminants in drinking water as they relate to human reproduction and early development.

Program Description

The long range goal of the public sector drinking water research program is to provide a scientific basis to assure safe drinking water for the people of this country. The program is designed to develop the scientific information from which EPA can determine if there is a need to regulate drinking water contaminants. Furthermore, if regulations are deemed appropriate, the research information will help establish levels at which standards should be set.

The major health research activities are to investigate health effects resulting from organic, inorganic, contamination of drinking water, and/to develop alternative disinfectants which do not produce significant levels of trihalomethanes to determine whether they are as effective as chlorine and whether they cause adverse health effects. The health effects portion of the program also investigates microbiological contaminants to provide valuable data for the prevention of waterborne disease outbreaks and evaluates health considerations related to potable reuse of highly treated wastewater.

The major goals of the treatment and ground water protection research program are, in cooperation with the Office of Drinking Water, to: (1) develop detection, measurement and monitoring methods to identify and quantify drinking water contaminants, (2) provide treatment methods to avoid forming contaminants or reduce contaminants to an acceptable level; (3) establish scientific and technical bases for action to protect ground water quality.

The major problem area is the measurement and control of organics, with particular attention to disinfection by-products, so work on organics will be emphasized. Also of high priority are methods to control inorganic substances and asbestos fibers. Microbiological contaminant occurrence, detection, and control remain a relatively high priority because outbreaks of waterborne disease still occur in the United States, especially in poorly operated treatment and distribution systems. Finding practical, cost-effective processes to meet the needs of small communities which have difficulty in complying with drinking water standards will be a major initiative in 1981. Ground water research will develop new and improved methods of detecting and assessing contamination and methods for determining the absorption, movement and transformation of contaminants in the subsurface environment, especially organic chemicals and viruses.

HEALTH EFFECTS

1979 Accomplishments

In 1979, the program expended $6,551,400. Of this amount, $2,140,900 was for salaries and expenses and $4,410,500 for extramural research and development activities. Specific accomplishments include the following:

- Protocols for the recovery of volatile and non-volatile organics in drinking water for use in bioassays were prepared.

- A research program to assess human body burdens of organics in drinking water was developed and conducted. Animal models were used to develop and validate techniques to measure chloroform and other volatile organics in blood and fatty tissue. An epidemiological study was conducted to test the method and evaluate the contribution of chlorinated by-products (Trihalomethanes) in drinking water to levels of chloroform in human body tissue. Preliminary data suggests that humans exposed to chlorinated water may have slightly higher blood levels of chloroform than the control groups. Further epidemiological methods will be used in 1980 on the same population to correlate the results of the body burdens found in human tissue with the incidence of cancer.

- The relationship of high levels of asbestos fibers (both from natural sources and asbestos pipes) in drinking water to cancer mortality rates was studied. One epidemiological study indicated that there may be a positive association between asbestos fibers in the water and white male lung and stomach cancer and female gall bladder, esophageal, and peritoneal cancer. Other studies showed no measurable effect. It is significant that the results of these studies are not consistent - both for male and female groups and for target organs. These first correlation studies are for the purpose of generating a hypothesis (i.e. to identify which organs may be at risk). Additional research is needed to test this hypothesis further.

- Epidemiological studies were conducted on the relationship of drinking water sodium levels to hypertension. Several studies indicated that there were significant differences in blood pressures between high and low sodium groups. Further research is being conducted under controlled conditions to determine if there is a reduction in blood pressure and hypertension when the level of sodium in drinking water is reduced.

- Additional protocols for the isolation and recovery of viruses in drinking water were developed in response to the Safe Drinking Water Act Section 1442(a)(7) which requires that the Administrator of the U.S. EPA "carry out a study of virus contamination." The significance of this work is to determine if pathogenic viruses are present in drinking water. At the present time transmission of viruses through drinking water has not been confirmed. This may be due in part to difficulties encountered with recovery and analytical methods.

- Long-term toxicological studies to determine the health effects of chlorine, chloramine, chlorine dioxide, chlorite, and chlorate were performed to broaden the health data base on alternative disinfectants. Acute toxicity studies in mice and tolerance studies in humans with alternate disinfectants were completed. Results of the animal studies for chlorine and chloroform show an increased incidence of tumors among the experimental groups.

1980 Program

In 1980, a total of $12,022,300 is allocated to the program, of which $3,461,800 is for the Salaries and Expenses appropriation and $8,560,500 is for extramural purposes under the Research and Development appropriation.

The drinking water health effects research program focuses on five areas: organic contaminants, inorganic contaminants, microbiological contaminants, alternative disinfectants, and reuse of highly treated wastewater. The 1980 research program places highest priority on organic contaminants, with the major emphasis on carcinogenic effects. Organic sample concentrates from representative American city drinking water supplies are being analyzed chemically and screened for mutagenic activity to identify potentially carcinogenic groups of compounds. The analytical and concentration techniques being used to support biological testing are being improved so that the health results may be more directly linked with the appropriate environmental contaminants. Short-term animal assays are being adapted for detecting carcinogenic and mutagenic effects in drinking water. More definitive epidemiological studies (i.e. case-control or cohort) are being conducted to learn about the relative risks of cancer from drinking water contaminants which are suggested by earlier studies which contributed to the hypothesis about the relationship between organic contaminant and cancer risks.

Research on inorganic contaminants emphasizes cardiovascular diseases. Reports on the relationship of inorganic contamination and the potential chemical contributors (i.e. calcium and/or magnesium haroness) to cardiovascular disease will be prepared in 1980. Information on the relationship of sodium in drinking water to hypertension being corroborated by more definitive, controlled studies in 1980. The association between asbestos in drinking water and cancer morbidity and mortality are being studied in five areas of the U.S. during 1980. To date, asbestos epidemiology studies have been preliminary and hypothesis-generating. One of the five recently completed studies investigated leaching of asbestos fibers from asbestos-cement pipes used in distribution systems where the water is highly corrosive. No significant increase in cancer rates were found in this study. In 1980, a different geographic region of the country where the waters are also highly corrosive will be studied to corroborate the results of the first study. The asbestos fiber counts in the drinking water is much higher and the epidemiological study will attempt to determine the relative risks of cancer from ingestion of asbestos fibers. The additional epidemiology studies to be conducted in 1980 and 1981 are part of a long-term research program, to test hypothesis-testing studies based upon the results of the completed studies. This research will supplement the toxicological data base needed to establish maximum contaminant levels allowable in drinking water.

For microbiological contaminants, the health research program include technical assistance for the investigation of waterborne diseases. Waterborne outbreaks of infectious diseases are investigated in cooperation with the Center for Disease Control with the objective of identifying the causative organisms in water, determining the route of entry, and recommending corrective action to prevent recurrence. Subsequent to a symposium in 1978, a two year research program was initiated to evaluate methods of identifying water systems that contain Giardia cysts, some life forms of the parasite Giardia lambia, which is found in raw and treated waters and may cause an intestinal disease called giardiasis. Raw and treated waters from several sites will also be investigated for the occurrence of other pathogens,(disease causing organisms), such as the bacteria Yersinia. Currently we are unable to culture and identify many viruses associated with waterborne diseases. Work will continue on improving methods for the identification of these viruses. This will permit a more accurate assessment of the significance of viruses in drinking water to health.

The search for a disinfectant which is as effective as chlorine but which does not produce significant levels of toxic substances such as trihalomethane will be almost completed in 1980. The toxicity of reaction products resulting from chlorination and the use of proposed alternative disinfectants will be bioassayed both in whole animal and bioassay screening tests. Toxicological studies will be completed on the effects of disinfectants and supplemented with epidemiological studies where feasible (i.e. chlorine dioxide). Recent research has indicated that some alternate disinfectants may cause adverse health effects. The proposed toxicological studies will provide data for assessing the health risk of alternative disinfectants.

The potential health effects associated with reuse of highly treated municipal waste water is being studied. This is part of a program which has as its ultimate objective the development of a more complete data base from which to set criteria for waste water reuse. Bioassay techniques developed in conventional drinking water research are applied to the reuse situation to assess the health effects of waste water reuse. Inorganic and organic constitutents of advanced waste water treatment plant effluents will be identified and additional toxicity studies performed where inadequate health information exists.

1980 Explanation of Change from Budget Estimate

The net decrease of $218,800 results from several actions. An increase of $81,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $4,300 and $9,800, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $286,400 to this activity.

1981 Plan

The Agency requests a total of $12,359,100 and 52 permanent workyears for this program, of which $3,054,000 is for the Salaries and Expenses appropriation and $9,305,100 is for extramural purposes under the Research and Development appropriation. The $336,800 increase over the current level will enable EPA to conduct research on health effects of contaminants in drinking water as they relate to human reproduction and early development.

Health effects research on drinking water will continue to focus on organic contaminants in 1981. The quality of drinking water will be defined by both chemical analysis and biological screening tests. Research on organic contaminants of drinking water will be concentrated on carcinogenics. The results will potentially provide the data base for the establishment of maximum contaminant levels for several widely occurring carcinogens (i.e., 1,1,1-trichloroethane, carbone tertrachloride, 1,1,2-trichloroethane, 1, 2dichloroethane and tetrachloroethylene. Screening tests based upon mutagenic effects will be used to predict carcinogenic activity. It is necessary to develop screening tests to determine such activity, for various organics found in drinking water at very low levels (i.e. part per billion). The current bioassay tests have limitations. Attention will be given to teratogenic effects. Development of methods devoted to suitably preparing organic concentrates and identifying biologically active fractions will continue to be an area of importance. Key compounds, such as benzene; 2,4, dichlorophenol and 1,1-dichloroethylene, will be the subject of long-term toxicologic study. A report on carcinogenic risk of organic contaminants will be completed. Health risk assessment based on available epidemiological, chemical, and toxicological data is necessary and will be accomplished to provide guidelines for setting preliminary limits for selected chemicals that are known carcinogens and/or toxic chemicals.

The relationships of sodium and hardness to cardiovascular disease will be further explored to identify individual risk factors. Epidemiological studies will be continued to establish the relationship of specific types of cardiovascular diseases, especially hypertension, to sodium levels in drinking water and heart attack rates to magnesium levels in drinking water. Toxicological studies will be conducted to determine the impact of various combinations (synergisums) of calcium, magnesium, lead, cadmium, sodium and other chemical substances in water on the development of cardiovascular disease. These are long-term studies that will be conducted over the next 3 to 5 years to provide supportabable data for verifying the preliminary observations.

Cardiovascular disease, unfortunately, is not the only adverse health effect shown to be associated with inorganic contaminants of drinking water. Toxicological studies will be continued which will determine whether blood lead levels which are currently considered to be in the normal range, delay the central nervous system development in children. The significance of drinking water as a source (relative to other sources) will be established. The bioavailability of certain metals, such as lead, cadmium, and zinc, in hard and soft waters and in food will be investigated to determine safe levels.

Epidemiological studies will be completed to determine whether asbestos occurring in drinking water from natural erosion, mining operations, and asbestos-cement pipe is a contributing factor in increased cancer rates. The outcome of this research will provide the necessary data base for a treatment technique to reduce leaching of asbestos fibers.

Epidemiological studies of the association between barium and increased incidence of hypertension will be investigated. Previous results found in a retrospective study indicated that communities with high levels of barium (above the current standard) had higher death rates for cardiovascular disease than communities with low levels of barium. In 1981, epidemiological research will be conducted to test such a hypothesis and determine if the higher incidence of cardiovascular diseases and death rates are related to barium and/or sodium levels in drinking water. The effect of using home water softeners will also be examined since many of these devices increase the level of sodium in water.

Neurological disease, including multiple sclerosis, is being studied to determine whether there is an association between such diseases and certain inorganic, organic, or microbiological contaminants of drinking water. Both toxic metals and viruses are considered by some researchers to be possible predisposing factors for some of these chronic diseases. Since cases of multiple sclerosis occur in a north-south gradient similar to that of certain drinking water parameters, it is hoped that epidemiological research will add to our understanding of these diseases and their prevention.

The current outgoing efforts related to an alternate disinfectant for use in drinking water will be completed. Both the epidemiological studies of the carcinogenic effects and their by-products and the studies on comparative toxicity of organic reaction products of chloramines, chlorine, chlorine dioxide, and ozone disinfection will be completed. Such research should provide data useful in assessing alternative disinfection practices.

Health effects research on microbiological contaminants in drinking water will continue to be concerned with examining waterborne outbreaks of infectious diseases to determine the causative agent. The EPA, in collaboration with the Center for Disease Control, will continue to provide technical assistance and investigate ongoing waterborne disease outbreaks. Studies on the occurrence and significance of Legionella and Giardia in water supplies to assess the need for treatment criteria will be completed. Work will continue on improving methods for the concentration and identification of viruses found in drinking water which are known to be associated with waterborne disease outbreaks. These improvements will permit a more accurate assessment of the significance to health of viruses in drinking water.

Studies on the potential health effects associated with the reuse of highly treated municipal waste water which were started in 1980 will be continued. Toxicological testing techniques developed in conventional drinking water research will be applied to the wastewater reuse. Inorganic and organic constituents of advanced wastewater treatment plant effluents will be identified and additional toxicity studies performed on those substances for which little health information is available. This is part of a 10 year program which has as its ultimate objective the development of the data base sufficient to set reasonable criteria for reuse standards. Criteria will be developed by 1985 for emergency reuse.

TREATMENT AND GROUND WATER PROTECTION

1979 Accomplishments

In 1979, the program obligated $10,068,000 of which $2,775,600 was for salaries and expenses and $7,292,400 for extramural activities.

In the treatment area, results in 1979 include the following:

- A report was published defining methods for determining the costs of 99 treatment processes. The report gives examples of how to conduct cost analyses and the data is arranged for computer use.

- A report was completed on granular activated carbon treatment, providing information from pilot and field evaluation projects. This data was used in establishing the data base for the standard setting process.

- Field investigations were expanded in response to increased incidences of ground water contamination from organic solvents to develop treatment techniques for removing such solvents from drinking water. Cooperative pilot scale studies with the U.S. Air Force and utilities in Connecticut and New Jersey have provided important information on the usefulness of treatment techniques such as aeration and adsorption. A project involving pilot field application of the processes was started with a utility on Long Island.

- A method for measurement of total organic halogen has been accepted as a standard technique. The technique is being used to provide information on the degree of halogen formation caused by various disinfectants including chlorine, chlorine dioxide, chloramines, and ozone.

- A report was completed that brings together the available information on water filtration for the removal of asbestos fibers. Results from EPA sponsored research on filtration at Duluth and Seattle have shown that asbestos (both chrysotile and amphibole) fiber concentrations in drinking water can be substantially reduced by the use of coagulants and/or polymers with granular media filtration.

- Studies on asbestos cement pipe have shown the importance of pH conditions and high zinc levels to protect the pipe from attack from corrosion.

- Information was developed on the efficiency of water treatment processes for the removal of Giardia lamblia cysts from drinking water and shows that the cysts can be inactivated by chlorine. A symposium was held to bring together information on waterborne transmission and control.

The results in the ground water protection area in 1979 include the following:

- A guidance document was prepared in support of the underground injection control regulations for calculating pressure increases around injection wells to determine the radius of influence of such wells. This report was used to determine the radius of influence for several injection fields.

- An interim research report was published which provided some of the first data on the movement and fate of organic contaminants introduced directly into an aquifer during artifical recharge.

- A method for predicting ground water quality changes due to surface mining activities was extended to include coal gasification and in-situ shale retorting.

- A method was developed which allows, for the first time, uncontaminated ground water samples to be collected for trace organic analysis from depths greater than 25 feet.

- Technical assistance was provided to the Office of Enforcement as well as regional offices in developing assessment and correction strategies for several hazaradous waste disposal sites.

1980 Program

In 1980, the Agency has allocated a total of $9,734,200 to this program, of which $3,106,800 is for the Salaries and Expenses appropriation and $6,627,400 is for extramural purposes under the Research and Development appropriation.

In the drinking water treatment program, organic compounds, inorganic compounds (including asbestos) and microorganisms which are found as contaminants in drinking water are investigated to provide means of control. As in the health program, organic contaminants remain the highest priority research area, particularly as treatment requirements for specific organics evolve and treatment practices change.

Information from field scale studies supplemented by pilot plant data will be evaluated and consolidated to provide guidance to the water supply industry and the standards setting process. Early results from evaluations of complete treatment systems will become available and will be analyzed for the user community.

Information on economical treatment processes for inorganic contaminants are being extended through evaluation of processes in the field. Pilot scale processes are being evaluated for a number of contaminants found in different water sources. Materials in water resulting from corrosion and/or additives for water treatment are addressed.

Insuring protection against microbiological contaminants continue to be a goal in this program. Thus as treatment processes change and alternate disinfectants are used, care will be taken to assure that microbiological contaminants are not increased in the attempt to reduce chemical contamination.

In the ground water protection area, biological and organic chemical indicators of ground water pollution are being assessed; short courses are being developed for ground water modelers and for water resources and quality managers who need to understand ground water models; and technical assistance is being given to the regulatory activities in developing underground injection control and hazardous waste disposal regulations. Technical assistance will be provided in completing the Surface Impoundment Assessment. Considerable involvement is underway in helping to develop an Agency ground water protection strategy. Methods for reducing ground water pollution from septic tank systems will be studied in cooperation with the municipal technology program. A major effort is also underway with three research programs cooperating to determine the ground water pollution potential from land application facilities. This latter effort will result in an understanding of some of the characteristics (e.g. chemical, geophysical and pollution source) which influence organic pollutant transport and transformation in the subsurface environment.

1980 Explanation of Change from Budget Estimate

The net decrease of $968,800 results from several actions. An increase of $96,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million ADP costs resulted in a decrease of $3,500 and $3,200, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $66,800 to this activity.

A transfer of $991,600 was made to the water quality media to waste water systems control technology development to reflect the transfer for demonstration technology for potable reuse of waste water; the research being conducted in 1980 is in the water quality program.

1981 Plan

The Agency requests a total of $14,079,200 and 78 permanent workyears for this program, of which $3,588,600 is for the Salaries and Expenses appropriation and $10,490,600 is for the Research and Development appropriation. This request reflects an increase of 10 permanent workyears and $4,345,000 over the current level.

The increase will be focused specifically on the needs of small systems, which comprise 80 to 90 percent of all drinking water systems and which regularly serve approximately 20 percent of the U.S. population. The research is needed to evaluate information on cost-effective technology and illustration of cooperative arrangements for small systems. This type of data will enable these systems to meet national and state drinking water standards established to protect public health.

60-531 O - 80 - 47

EPA proposes a program to (1) develop and provide cost data and information on treatment methods usable by small towns; (2) develop information upon which multi-community cooperative arrangements can be established after which communities can establish a comaon source for services or can enter into an agreement with public or private organizations to provide such services; and (3) evaluate treatment systems and unit processes to determine whether or not they are amenable to certification by non-government organizations and under what circumstances certification would be meaningful. Such certification would provide valuable guidance to the small towns and the system designers in selecting treatment methods.

At the same time, the remainder of the program will move forward to provide information on economical treatment processes to control specific compounds of health concern which are discharged to, and are found in, our drinking water sources. Efforts will be made to produce, evaluate and bring together information on the performance of existing units producing water from questionable or suspect sources. The evaluations will include cost data and information on effects on microbiological quality.

In the ground water protection research area, the focus will be on developing the scientific bases for implementing EPA's ground water strategy. Also planned is a study of methods for rehabilitating already polluted aquifers. Finally, the understanding of organic transport and transformation gained in 1980 will be extended to beginning development of predictive models for assessing hazards associated with various pollution sources.

DRINKING WATER

Monitoring and Technical Support

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Quality Assurance:					
Salaries and Expenses..	$510	$577	$555	$575	$20
Research and Development.....	455	148	433	433	...
Grand Total.....	965	725	988	1,008	+20
Permanent Positions					
Quality Assurance.....	11	9	10	10	...
Full-time Equivalency					
Quality Assurance.....	10	9	14	14	...

Budget Request

The Agency requests a total of $1,007,800 and 10 permanent workyears for 1981, and increase of $19,700 from 1980. Included in this total is $574,800 for the Salaries and Expenses appropriation and $433,000 for the Research and Development appropriation.

Program Description

The drinking water quality assurance program supports the Agency's drinking water program by standardizing monitoring methods; providing quality control procedures for operational use; supplying standard samples and reference materials; conducting methods validation and performance evaluation studies; developing sampling and analytical methodology and quality control guidelines and manuals; and participating in regional quality control workshops. The Agency uses the procedures, protocols, and materials generated by this program to assure that the data generated from the use of measurement systems are accurate, intercomparable and legally defensible.

1979 Accomplishments

During 1979, resources totaled $964,700. Included in this total is $509,800 for salaries and expenses and $454,900 for extramural purposes. Specific accomplishments include the following:

- Publication of a manual for interim certification of laboratories involved in analyzing public drinking water. The manual includes chemical, microbiological and radiochemical analyses for regional and State certification.

  Provision of quality control samples and standard reference materials to analytical laboratories for the analysis of currently regulated contaminants in drinking water in support of the Safe Drinking Water Act and the National Interim Primary Drinking Water Regulations.

- Completion of three preliminary interlaboratory performance evaluations as a part of the planned audit protocol for drinking water laboratory monitoring procedures as required under the Laboratory Certification Program.
- Certification of on-site evaluation teams in all ten EPA regions to conduct performance evaluations of drinking water laboratories in their respective regions.
- Completion of 25 on-site evaluations of State and regional radiochemistry laboratories.
- Evaluation and approval of two alternative analytical test procedures for national use.

1980 Program

In 1980, the Agency has allocated a total of $988,100 to this program, of which $555,100 is in the Salaries and Expenses appropriation and $433,000 is for extramural purposes in the Research and Development appropriation. Major activities of the program include:

- National interlaboratory performance evaluations;
- On-site evaluation of principal State radiochemistry laboratories and four EPA regional radiochemistry laboratories;
- Development, preparation and distribution of quality control and performance evaluation samples for use by EPA regions and States;
- Validation of several measurement methods for monitoring trace metals and pesticides;
- Preparation and distribution of quality assurance guidance for EPA regions, including assistance in proper use of test procedures and quality control techniques; and
- Continuation of evaluation and approval of alternate analytical test procedures for national use.

1980 Explanation of Change from Budget Estimate

The net increase of $263,100 results from several actions. An increase of $21,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $7,000 to this activity.

A transfer of $250,000 was made from the Air media from air quality assurance to correct an incorrect transfer of interdisciplinary funds to the air media in the budget request; the funds were reprogrammed to the media to more accurately portray the intended purpose by media of the quality assurance program.

1981 Plan

The Agency requests a total of $1,007,800 and 10 permanent workyears for this program of which $574,800 is in the Salaries and Expenses appropriation and $433,000 is for the Research and Development appropriation.

In 1981, the program will:

- Evaluate and validate alternate analytical measurement methods.
- Develop and deliver quality control samples, reference materials and technical assistance documents required to support drinking water standards.
- Develop a repository of quality control reference samples for radiochemical, chemical, and biological measurements in support of the laboratory certification program.
- Prepare and publish quality control guidelines, sampling procedures, and analytical methods manuals for radiochemical, chemical, biological, and microbiological measurement methods.
- Develop national guidance to assure uniformity for evaluating and certifying public water supply laboratories.
- Develop an automated water laboratory test system for EPA and State drinking water laboratories.
- Conduct on-site inspection and performance evaluations for the program office and regional laboratories to determine the capabilities of measurement systems and operators to analyze drinking water for unknown contaminants.

DRINKING WATER

Criteria, Standards, and Guidelines

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Drinking Water Standards and Regulations Development:					
Salaries and Expenses	$2,022	$1,720	$2,616	$2,983	+$367
Abatement, Control and Compliance.....	3,224	3,500	3,282	2,300	-982
State Program Guidelines and Regulations Development:					
Salaries and Expenses	2,034	2,000	2,401	2,475	+74
Abatement, Control and Compliance.....	2,017	2,000	1,770	1,537	-233
Total:					
Salaries and Expenses	4,056	3,720	5,017	5,458	+441
Abatement, Control and Compliance.....	5,241	5,500	5,052	3,837	-1,215
Grand Total.....	9,297	9,220	10,069	9,295	-774
Permanent Positions					
Drinking Water Standards and Regulations Development.....	39	45	52	46	-6
State Program Guidelines and Regulations Development.....	48	58	54	55	+1
Total.....	87	103	106	101	-5
Full-time Equivalency					
Drinking Water Standards and Regulations Development.....	45	54	58	54	-4
State Program Guidelines and Regulations Development.....	55	65	66	65	-1
Total.....	100	119	124	119	-5

Budget Request

The Agency requests a total of $9,294,900 for 1981, a decrease of $773,400 from 1980. Included in this total is $5,457,500 for Salaries and Expenses and $3,837,400 for Abatement, Control and Compliance, with an increase of $440,900 and a decrease of $1,214,300, respectively. These resources will be used to develop revised primary drinking water regulations; establish additional contaminant standards; provide guidance and assistance to the regions and States on the implementation of the organics regulations and for emergency exposure situations and emergency response; and review of variances and exemptions and compliance schedules, and development of compliance schedules where EPA has primacy. EPA will also develop methods to determine drinking water quality criteria of direct and indirect reuse of waste water; establish ground water quality criteria; develop guidance documents on the implementation of the UIC program in non-primacy States and on Indian lands, provide national oversight and conduct program evaluations of the public water systems, underground injection control and sole source programs; and establish a comprehensive testing and evaluation program for point-of-use home water treatment devices.

Program Description

The Safe Drinking Water Act requires EPA to assure the safety of drinking water through the establishment and implementation of national primary drinking water regulations specifying maximum permissible bacteriological, chemical, and radiological contaminant levels to protect the public health. This requires EPA to determine exposure and health risks of drinking water contaminants and to assess the technology and economic feasibility of controlling these contaminants. Interim primary drinking water regulations which addressed bacteriological, radiological, and chemical contaminants became effective in June 1977. Based upon the National Academy of Sciences (NAS) report received by EPA in May 1977, EPA revised a portion of these regulations to include additional contaminants. Further revisions to these regulations based on the NAS study and subsequent studies are being developed. In addition, EPA promulgated in June 1979 secondary drinking water regulations which deal with the aesthetic quality of drinking water.

EPA is also responsible for developing regulations and program guidance for State public water systems supervision and underground injection control programs. The public water system supervision program regulations provide that all public water systems meet the requirements of the interim and revised primary drinking water regulations. The underground injection control program regulations are designed to protect existing and potential underground drinking water sources from contamination through underground injection practices. EPA is adopting a phased approach in listing the States which require UIC programs. To date, 41 States have been listed with the remaining States to be listed during 1980. This schedule will allow the control of underground hazardous waste disposal under the UIC program to commence simultaneously with control of hazardous waste disposal under the Resource Conservation and Recovery Act. As part of the effort to protect underground sources of drinking water, regulations for the designation of sole source aquifers are being developed. Additional activities to provide support in program development such as data management, public awareness, special monitoring studies, and toxicological assistance will continue.

DRINKING WATER STANDARDS AND REGULATIONS DEVELOPMENT

1979 Accomplishments

During 1979, obligations totalled $5,245,800, of which $3,223,700 was for extramural projects. In 1979, public hearings on the proposed revisions to the Interim Primary Drinking Water Regulations (IPDWR) for trihalomethane and synthetic organics were conducted. In addition, an international symposium on granular activated carbon treatment technology was jointly sponsored to address the effectiveness of the technology in organics removal. Based upon the public comments, final trihalomethane regulations were prepared. Secondary drinking water regulations on the aesthetic quality of drinking water were promulgated in 1979. Economic impact studies of these and other program regulations were conducted, and management information systems on monitoring data, violations, etc. were maintained. Amendments to the 1977 regulations particularly affecting non-community systems were proposed in 1979.

Other accomplishments during 1979 included the completion of the mandated study on viruses in drinking water, signing of a memorandum of agreement between EPA and the Food and Drug Administration transferring to EPA authority over direct and indirect additives to drinking water. In addition, public hearings were conducted on the Draft Report on Water Supply - Wastewater Coordination Study mandated by Section 1442 of the Safe Drinking Water Act and Section 516 of the Clean Water Act. Scientific expertise was provided during the Three-Mile Island nuclear accident to ensure that the drinking water supplies did not exceed the maximum contaminant levels for radionuclides. In addition, a large number of advisory values for non-regulated contaminants were evaluated.

1980 Program

In 1980, the Agency has allocated a total of $5,897,700 to this program element, of which $2,615,700 is for the Salaries and Expenses appropriation and $3,282,000 is for extramural purposes under the Abatement, Control and Compliance appropriation. The activities in this element will continue to emphasize the Agency's continuing health initiative. An amendment to the IPDWR for trihalomethanes (THMs) was promulgated on November 29, 1979. Guidance documents on the implementation of the THM regulation will be prepared: treatment requirements for organics removal will be re-examined; and technical amendments to the Interim Primary Drinking Water Regulations will be promulgated. These amendments will revise the monitoring requirements for bacteriological contaminants and turbidity in non-community systems and will establish new requirements for sodium and corrosion control.

To implement the Memorandum of Understanding with the Food and Drug Administration, procedures and protocols to control direct and indirect additives to drinking water will be established and implemented.

Section 1442 of the Safe Drinking Water Act authorizes the Administrator to conduct a variety of studies dealing with drinking water. Many of these studies are on-going and require constant modifications. Studies to be completed this year are: (1) cost of compliance with National Interim Primary Drinking Water Regulations and alternative means of financing these costs; (2) reaction of chlorine and humic acids and effects of the contaminants which result from such reactions; (3) present and future availability of safe supplies of drinking water; and (4) study of polychlorinated biphenyls and other substances known or suspected to be carcinogenic which contaminate actual or potential sources of drinking water and the effects of such contamination and means of controlling, treating or removing such contaminants.

1980 Explanation of Change from Budget Estimate

The net increase of $677,700 results from several actions. An increase of $71,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $1 million to Agency ADP costs resulted in a decrease of $22,900. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $70,400 to this activity.

A reprogramming of $1,000,000 was made within the drinking water media from special studies and demonstrations to provide support for the program to control direct/indirect additives to drinking water. A transfer of $141,600 within the Office of Water and Waste Management was made to program management to reflect centralizing economic analysis activities. A reprogramming was also made of $159,000 within drinking water to state program guidelines and regulations development.

1981 Plan

The Agency requests a total of $5,283,000 for this program, of which $2,982,500 is for the Salaries and Expenses appropriation and $2,300,500 is for the Abatement, Control and Compliance appropriation. The Abatement, Control and Compliance funds will be used to gather data on drinking water contaminants, to evaluate health effects data and technological techniques and to conduct economic impact studies on the cost of meeting and implementing the drinking water regulations. The major objective of the 1981 program will be to expand the coverage of the primary drinking water regulations. This includes establishing standards for 10 organic chemicals and protozoa, virus and 10 inorganic chemicals; promulgation of comprehensive revisions to the coliform bacteria regulations and monitoring frequency requirements. In addition, the following activities will be undertaken: developing methods to determine drinking water quality criteria for direct and indirect reuse of waste water; and establishment of a comprehensive testing and evaluation program for point-of-use home water treatment devices. The activity relating to the control of direct and indirect additives to drinking water that was initiated in 1980 will be severely curtailed.

STATE PROGRAMS GUIDELINES AND REGULATIONS DEVELOPMENT

1979 Accomplishments

Obligations in 1979 totalled $4,050,900, of which $2,016,800 was for extramural purposes. Accomplishments for the State programs guidelines and regulations development are divided into two major categories: public water systems supervision program and the ground water protection program.

In the public water system supervision program an additional five States were approved for primary enforcement responsibility, bringing the total to 44. All ten regional offices were evaluated, which included determination of program effectiveness in 15 non-primacy States. Management steps were taken to improve performance. Also, a comprehensive guidance on the issuance of variances and exemptions was developed and public participation and awareness activities were continued.

Accomplishments in the ground water protection program included the reproposal of the Underground Injection Control Regulations; the designation of 18 additional States as requiring underground injection control programs; the review of two new sole source aquifer petitions and approval of one petition for designation; promulgation of the UIC grant regulations and issuance of program guidance on the conduct of the inventory of injection wells, and on aquifer mapping.

1980 Program

In 1980, the Agency has allocated a total of $4,170,600 to this program, of which $2,400,900 is for salaries and expenses and $1,769,700 is for extramural purposes under the Abatement, Control and Compliance appropriation.

In the public water system supervision program, attention will focus on continued oversight of regional operations in primacy States and program activities in non-primacy States. Guidance will be developed for the issuance of variances and exemptions for new standards, and assistance will be provided on the implementation of the THM regulations. The priority of the ground water protection program is the development of a coordinated agency ground water strategy. Other activities to be conducted include the designation of the remaining States requiring UIC programs; promulgation of the UIC and sole source aquifer regulations; providing guidance on UIC program implementation and public participation and awareness activities relating to the UIC program. Data from the assessment of surface impoundments will be analyzed and a final report prepared.

1980 Explanation of Change from Budget Estimate

The net increase of $170,600 results from several actions. An increase of $85,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $5,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $69,300 to this activity.

A reprogramming of $159,000 was made within the drinking water media from standards and regulations development in order to support costs projected on the basis of 1979 actual expenditures.

1981 Plan

The Agency requests a total of $4,011,900 for this program, of which $2,475,000 is for the Salaries and Expenses appropriation and $1,536,900 is for the Abatement, Control and Compliance appropriation. National oversight of the public water system supervision program will be conducted through regional program evaluations, and guidance for program implementation in non-primacy States, Indian lands and on interstate carriers will be issued. Other planned activities include review of variances and exemptions granted for drinking water regulations and assistance in conducting State evaluations. Activities in the ground water protection program will focus on the development of guidance documents for implementation of UIC programs in non-primacy States and Indian lands; review of UIC primacy applications; guidance on implementation of an ADP system for the UIC program; implementation of a public information strategy; and evaluation of regional implementation of the sole source program. Other activities in the ground water protection program will include finalization of the Report on Surface Impoundments.

DRINKING WATER

State Program Resource Assistance

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Public Water Systems Supervision Program Grants:					
Abatement, Control and Compliance.....	$25,057	$29,450	$29,450	$29,450	...
Underground Injection Control Grants:					
Abatement, Control and Compliance.....	6,638	7,795	4,395	8,574	+$4,179
Special Studies, Demonstrations and Training:					
Abatement, Control and Compliance.....	2,243	1,550	900	1,550	+650
Total:					
Abatement, Control and Compliance.....	33,938	38,795	34,745	39,574	+4,829
Permanent Positions....	...	...	...	...	...
Full-time Equivalency..	...	...	...	...	...

Budget Request

The Agency requests a total of $39,574,500 for 1981 for the Abatement, Control and Compliance appropriation, an increase of $4,829,500 from 1980. These funds support State activities in acquiring and maintaining primary enforcement responsibility for the public water system supervision and underground injection control programs. Financial assistance will also be provided to State rural water associations to provide training and technical assistance to small rural water systems.

Program Description

Under the Safe Drinking Water Act, the States are encouraged to assume principal responsibility for implementing the public water system supervision and underground injection control programs. Recognizing that the States would require financial assistance to implement these programs, Congress has appropriated funds to the States to aid in developing and maintaining programs that would satisfy the minimum requirements of the regulations designed to protect public health and underground sources of drinking

water. These financial assistance programs are a means of strengthening the cooperative relationship between the State and Federal Governments. In the public water system supervision program, only States with primacy are eligible for grants. In the underground injection control program, only States designed by the Administrator are eligible for grants. Currently, 41 States have been designated, the remainder will be designated during 1980. All States must assume primacy within two years after the original grant award to be eligible for continued financial assistance. In the underground injection control grant program, EPA may utilize the funds for its implementation activities in States that indicate their intent not to assume primary enforcement responsibility.

Financial assistance is also provided to State rural water associations to aid in providing technical assistance and training to owners and operators of small rural water systems to enable them to meet the requirements of the Safe Drinking Water Act. Fellowships and academic grants are awarded to State and local staff to aid in their continuing education in the drinking water field.

PUBLIC WATER SYSTEMS SUPERVISION PROGRAM GRANTS

1979 Accomplishments

During 1979 a total of $25,057,200 was awarded to 50 States that had either assumed primacy or were making a diligent effort and showed substantial progress toward assuming primacy. The States used these funds for salaries and other administrative costs to carry out the following activities: maintainence of data systems; enforcement of Interim Primary Drinking Water Regulations; laboratory certification and updating laboratory capabilities; surveillance and technical assistance to community water systems; and public participation and awareness. As a result of this financial assistance, five additional States were approved for primacy during 1979 bringing the total to 44.

1980 Program

In 1980, the Agency has allocated a total of $29,450,000 to this program under the Abatement, Control and Compliance appropriation. These funds are available to provide financial assistance to those States which have assumed primacy for the public water system supervision program. Currently 45 States have primacy and an additional six may achieve primacy and be eligible for grants. These grant funds will be used for salaries and other related program management activities; implementation of the organic regulations; data management; enforcement of the National Interim Primary Drinking Water Regulations, and public notification, public participation, and public awareness, and training programs for State personnel.

1980 Explanation of Change from Budget Estimate

There is no change from the budget estimate.

1981 Program

The Agency requests a total of $29,450,000 for this program under the Abatement, Control and Compliance appropriation. These funds will be used to maintain present on-going State programs which include emergency response; data processing systems; adoption of organic regulations; sanitary surveys; follow-up on MCL violation notifications; and public participation and awareness activities. In addition, funds will support revisions to existing programs to include implementation of the trihalomethane regulations and

other amendments to the Interim Primary Drinking Water Regulations; the implementation of the small systems strategy; and additional follow-up of systems which are in non-compliance with drinking water regulations.

STATE PROGRAM RESOURCE ASSISTANCE - UNDERGROUND INJECTION CONTROL PROGRAM (UIC)

1979 Accomplishments

During 1979, grant funds totalling $7,600,000 were available to the States for establishing UIC programs; obligations totalled $6,637,700. Forty-one (41) States are eligible to apply for grants to develop and establish their UIC programs. In the event that a State indicates that it will not assume primacy and does not elect to apply for a grant, EPA may utilize the funds allocated to such States and/or Indian lands to award contracts or grants or to cover in-house costs related to activities which could not be delegated to a non-Federal entity in the development and implementation of an underground injection control program. Activities included: establishing the institutional framework for implementing a UIC program; conducting inventories of injection facilities of Class I, II, III, IV, and V wells; mapping of aquifers to be used in designation of underground sources of drinking water; and establishing public participation and awareness activities.

1980 Program

In 1980, the Agency has allocated a total of $4,395,000 to this program under the Abatement, Control and Compliance appropriation. These funds are available to all States designated as requiring a UIC program. Approximately $85,000 will be used by EPA to cover additional salaries and expenses of regional personnel who are working to implement UIC programs on Indian lands. EPA will also use the funds allocated to States who indicate they will not assume primacy to issue contracts and grants for providing assistance in establishing and implementing programs in these States. Activities to be conducted by the States and/or EPA will include: inventory of wells; Class I and II permit reviews; permitting a limited number of salt water disposal wells; aquifer mapping; administration and support services; and emergency response.

1980 Explanation of Change from Budget Estimate

The decrease of $3,400,000 is a result of congressional action.

1981 Program

The Agency requests $8,574,500 for this program under the Abatement, Control and Compliance appropriation. Funds will be available to support program implementation activities in those States which have achieved primary enforcement responsibility within two years after receiving their initial grant and those States seeking primacy within the two-year period. For those States that have not assumed primacy, EPA will use their allocated funds to implement their programs. Approximately $100,000 will be transferred to salaries and expenses to defray expenses associated with implementation activities which cannot be performed by a non-Federal entity. Activities to conducted will include report review and surveillance of Class I, II, and III wells; Class III well site permit review; training of well operators; regulation by rule; aquifer mapping; permitting additional wells; regulating Class IV wells, inventory and assessment of Class V wells; and administration and support services.

SPECIAL STUDIES AND DEMONSTRATIONS AND TRAINING

1979 Accomplishments

Grants totalling $2,000,000 were awarded to 24 rural water associations use in educating the owners/operators of rural water systems in the requirements for the Safe Drinking Water Act and also for providing technical assistance in the solutions of drinking water problems. Sixty-five (65) fellowships totalling approximately $173,000 were awarded to State personnel to update and increase their knowledge in drinking water technology. Also, 28 grants totalling $68,980 were awarded to academic institutions to encourage academic pursuits and careers in the drinking water field.

1980 Program

In 1980, the Agency has allocated a total of $900,000 to this program under the Abatement, Control and Compliance appropriation. A total of $400,000 will be awarded to State rural water associations to maintain support to rural water districts for training, technical assistance, public awareness projects and special studies. Approximately 30 fellowships totalling $500,000 will awarded for continued training of State and local personnel in the drinking water field.

1980 Explanation of Change from Budget Request

A net decrease of $650,000 results from (1) the transfer of $1 million within the drinking water media to standards and regulations development to provide extramural funds for the control of direct and indirect additives to drinking water and (2) the congressional increase of $1.5 million for academic training, of which $350,000 was for the drinking water media.

1981 Program

The Agency requests a total of $1,550,000 for this program under the Abatement, Control and Compliance appropriation. These funds will be used to continue and expand programs in approximately 24 State rural water associations.

DRINKING WATER

Drinking Water Management

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Drinking Water Management Public Water Systems:					
Salaries and Expenses..	$5,190	$5,585	$5,701	$6,199	+$498
Abatement, Control and Compliance.....	183	2,500	1,266	1,208	-58
Drinking Water Management Ground Water Protection:					
Salaries and Expenses..	963	1,715	1,227	2,383	+1,156
Abatement, Control and Compliance.....	15	...	35	35	...
Total:					
Salaries and Expenses..	6,153	7,300	6,928	8,582	+1,654
Abatement, Control and Compliance.....	198	2,500	1,301	1,243	-58
Grand Total.....	6,351	9,800	8,229	9,825	+1,596
Permanent Positions					
Drinking Water Management Public Water System.....	183	217	207	208	+1
Drinking Water Management Ground Water Protection.	34	47	45	61	+16
Total.....	217	264	252	269	+17
Full-time Equivalency					
Drinking Water Management Public Water Systems....	204	228	230	232	+2
Drinking Water Management Ground Water Protection.	37	48	46	67	+21
Total.....	241	276	276	299	+23

Budget Request

The Agency requests a total of $9,824,900 for 1981, an increase of $1,595,400 from 1980. Included in this total are $8,582,200 for the Salaries and Expenses appropriation and $1,242,700 for the Abatement, Control and Compliance appropriaton, with an increase of $1,653,900 and a decrease of $58,500, respectively.

The drinking water management - public water system (PWS) program will continue to provide oversight of States with primary enforcement responsibility, continue to assist in the implementation of the organic regulations, and continue EPA implementation in non-primacy States. The activities of the ground water protection program include the implementation of the sole source aquifer regulations and assistance to the States in the development and implementation of underground injection control (UIC) programs. The UIC program activities to be carried out by EPA in States without primacy include conduct of inventories and assessments of injection facilities, aquifer mapping, designation of aquifers which are drinking water sources, technical review of permit applications, and implementation of training and public awareness programs.

Program Description

Under the Safe Drinking Water Act, Congress intended that the States would be primarily responsible for assuring the safety of drinking water and the protection of underground sources of drinking water. The role of the Federal Government is to provide assistance to the States in the development of the public water systems supervision and the underground injection control programs. To assist States in developing and implementing these programs, EPA personnel provide guidance on the interpretation of regulatory requirements and specify the minimum requirements for primary enforcement responsibility. In the event that States are unable or unwilling to assume responsibility for either the public water system supervision or the underground injection control programs, EPA must develop and administer control strategies and programs. This includes monitoring and surveillance activities as well as record-keeping responsibilities. In addition, EPA is required to establish and implement similar programs in Indian reservations and for interstate carrier conveyances. Drinking water management activities for the public water systems supervision programs include implementation of Federal responsibilities in those States that do not assume primacy, oversight of States with primacy, review of variances and exemptions, and assistance in the implementation of the organics standards. The drinking water management activities for the ground water protection program include the review and processing of sole source aquifer designations petitions; review of projects in designated areas; assistance to those State which are designated as requiring UIC programs to encourage assumption of primacy; coordination of regional ground water programs with RCRA programs; implementation of a ground water strategy; development of public participation and awareness activities; establishment of programs in non-primacy States; oversight in primacy States; and emergency response assistance.

DRINKING WATER MANAGEMENT - PUBLIC WATER SYSTEM SUPERVISION

1979 Accomplishments

A total of $5,373,600 was obligated, of which $183,400 was for extramural purposes. Five additional States achieved primacy during 1979 bringing the total to 44. Oversight was provided for the 44 primacy States; 15 primacy State evaluations were conducted and programs were implemented in the 13 non-primacy States. Other activities included review of violation and public notification reports, assistance to the States relating to the inclusion of non-community systems in their public water system supervision program; and assistance to States in issuing variances and exemptions and establishing compliance schedules. In addition, emergency assistance was provided in the Three-Mile Island nuclear accident.

1980 Program

In 1980, the Agency has allocated a total of $6,967,100 to this program, of which $5,700,900 is for Salaries and Expenses and $1,266,200 is for extramural purposes under the Abatement, Control and Compliance appropriations. These resources will be used to provide continued oversight in 45 primacy States which includes grant administration, program review, technical assistance in adopting the organic regulations, and regional evaluation of State programs. In non-primacy States, EPA will continue

to implement partial programs in the six States which are expected to achieve primacy during the year and will continue implementing a full program in the remaining six non-cooperating States. EPA activities in non-primacy States will include issuing exemptions, developing compliance agreements, surveillance, implementation of non-community systems program, assuring public notification and monitoring and reporting. Abatement, Control and Compliance funds support EPA's implementation activities in non-primacy States.

1980 Explanation of Change from Budget Estimate

The net decrease of $1,117,900 results from several actions. An increase of $219,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $31,900 and $14,400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $216,000 to this activity.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers from water quality NEPA compliance municipal waste facility construction ($43,800); from water quality manpower planning and training ($44,100); from drinking water Underground Injection Control Program ($40,600); to water quality municipal waste treatment facility construction ($211,900); to water quality ambient water quality monitoring ($114,400); to water quality NEPA compliance/EIS preparation ($7,200); to water quality environmental emergency response and prevention ($39,100); to water quality waste treatment operations and maintenance ($2,800); to water quality state programs regulations and guidelines ($8,700); and to water quality spill prevention and response ($1,300).

A transfer of $1,250,000 was made to water quality ambient monitoring for regional lab equipment which is being used for monitoring and analysis work.

1981 Program

The Agency requests a total of $7,407,000 for this program, of which $6,199,300 is for the Salaries and Expenses appropriation and $1,207,700 is for the Abatement, Control and Compliance appropriation. These resources will be used for oversight and evaluation of State primacy programs, assistance to States on modifications to the primary drinking water regulations, program implementation in non-primacy States which will include sanitary surveys, public notification for violations of the primary drinking water regulations, record-keeping, data management and review of requests for variances. The Abatement, Control and Compliance resources will support these EPA activities in non-primary states. In addition, continuing program activities include operation of public water systems supervision programs on Indian lands, for interstate carrier conveyances and on Federal facilities in non-primacy States.

DRINKING WATER MANAGEMENT - UNDERGROUND INJECTION CONTROL

1979 Accomplishments

Obligations in 1979 totalled $977,200, of which $14,700 was for extramural purposes. Activities in this program element focused on technical assistance to 23 designated States to assist and encourage them in assuming primary enforcement responsibility for the UIC program. Activities included assistance to the States in the preparation of program plans, grant applications and review of existing programs to assess the impact of proposed underground injection control regulations. Sole source aquifer designation petitions were processed and technical evaluations initiated. In addition, projects proposed in designated areas were reviewed to ensure that the sole source aquifer would not be contaminated. Assistance and oversight was provided for the State surface impoundment assessments. The regions also provided emergency assistance in local ground water contamination incidences.

60-531 O - 80 - 48

1980 Program

In 1980, the Agency has allocated a total of $1,262,400 to this program, of which $1,227,400 is for the Salaries and Expenses appropriation and $35,000 is for the Abatement, Control and Compliance appropriation. The regions will provide guidance and technical assistance in developing State programs to all States working toward primary enforcement responsibility. Activities that will be included are assistance in the preparation of grant applications, assessments of current programs, statutes and regulations; and development of UIC programs. Regions will be implementing public awareness activities in an effort to communicate the need for State UIC programs in ground water protection. Plans will be formulated for total or partial EPA implementation of UIC programs in States that are unable or unwilling to assume primary enforcement responsibility and on Indian lands. Special efforts will be placed on the coordination of the UIC program with the RCRA program.

Activities in the sole source aquifer program will continue with an estimated five petitions to be received during 1980. Other activities will include completion of the State surface impoundment assessments coordination of regional ground water programs with RCRA programs; and participation in the development of a coordinated ground water strategy.

1980 Explanation of Change from Budget Estimate

The net decrease of $452,600 results from several actions. An increase of $47,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and salaries and expenses resulted in a decrease of $7,400 and $3,900, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $49,400 to this activity.

Reprogrammings in order to support costs projected on the basis of 1979 actual expenditures resulted in regional transfers to solid waste hazardous management regulatory stratospheric implementation ($9,500); to water quality environmental emergency response and prevention ($1,200); to municipal waste treatment facility construction ($172,000); to pesticide use management ($42,200); to solid waste management program implementation ($4,500); to ambient air quality monitoring ($176,600); to water quality waste treatment operations and maintenance ($4,200); to air quality management implementation ($65,800); to drinking water public systems supervision program assistance ($40,600); to solid waste uncontrolled hazardous waste sites ($17,100); to air EIS review ($5,600); and from noise regional program implementation ($1,300).

1981 Program

The Agency requests a total of $2,417,900 for the program, of which $2,382,900 is for the Salaries and Expenses appropriation and $35,000 is for the Abatement, Control and Compliance appropriations. The major program activity will focus on assistance to the States which are eligible to assume primary enforcement responsibility. In addition, EPA will prepare implementation programs for Indian lands and for those States that do not assume primacy. Simultaneous with this effort, EPA will continue to work with the remaining States in their efforts to achieve primacy within the statutorily mandated timeframe. The regions will continue to administer the sole source aquifer program which includes the technical review of petitions and reviews of proposed projects on designated aquifers. Coordination with the NPDES and RCRA programs will be a high priority activity.

DRINKING WATER

Drinking Water Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses.....	$469	$835	$871	$755	-$116
Abatement, Control and Compliance...	48	...	66	9	-57
Total.....	517	835	937	764	-173
Permanent Positions	15	31	33	28	-5
Full-time Equivalency	18	34	34	32	-2

Budget Request

The Agency requests a total of $764,500 for 1981, a decrease of $172,700 from 1980. Included in this total is $755,200 for Salaries and Expenses and $9,300 for Abatement, Control and Compliance, with a decrease of $115,600 and $57,100 respectively. The 28 permanent workyears requested for 1981 is a decrease of five from the 1980 level.

Program Description

The Safe Drinking Water Act of 1974, as amended, provides the statutory requirements for a Federal/State drinking water program. The Act assures the safety of drinking water through two mechanisms: the establishment and enforcement of Primary Drinking Water Regulations, which specify the maximum allowable levels of drinking water contaminants, and Underground Injection Control (UIC) regulations for protection of underground drinking water supplies.

The Safe Drinking Water Act provides for State assumption of the drinking water program, and requires EPA to implement the program in States that have not been delegated enforcement responsibility. The Public Water System (PWS) program encompasses the following enforcement activities; investigate violations and take legal action against violators of the Primary Drinking Water Regulations in primacy States which request such assistance and in all non-primacy areas, review variances and exemptions granted by primacy States to assure compliance with the regulations, issue variances and exemptions in non-primacy areas, and where necessary initiate emergency enforcement actions.

The Underground Injection Control (UIC) program requires that EPA designate States which can assume the UIC program. By 1981 all 57 States will be designated. Enforcement program activities will include approval of the enforcement sections of primacy applications for State UIC programs, preparation for implementing UIC compliance monitoring and enforcement programs in non-primacy States, issuance of UIC permits, investigation and initiation of enforcement action for violations of the regulations and response to emergencies when necessary.

1979 Accomplishments

In 1979, a total of $517,500 was obligated, of which $48,100 was for contracts. Included in this amount is $17,800 for analytical support services for investigations of an emergency action.

During 1979, EPA initiated the first two civil actions for violations of the Safe Drinking Water Act (SDWA). These actions enhance the credibility of the enforcement program within the regulated community and provide valuable experience for future preparation and prosecution of similar actions.

Drinking water enforcement activities also included oversight responsibility in 45 primacy States and territories, enforcement responsibility in 12 non-primacy States and territories, and review of the enforcement aspects of six State primacy applications. In addition, draft amendments to the Safe Drinking Water Act (SDWA) were prepared. The proposed amendments contain provisions which would streamline the enforcement process by providing authority for the issuance of administrative compliance orders and the assessment of administrative civil penalities.

1980 Program

In 1980, the Agency has allocated a total of $937,200 and 33 permanent workyears to this program. Of the $937,200, $870,800 is for Salaries and Expenses and $66,400 for extramural purposes under the Abatement, Control and Compliance appropriation.

During 1980, the highest priority of the drinking water enforcement program will be response to emergency drinking water situations that involve imminent and substantial hazards to public health and safety. The program will also focus on issuing approximately 180 variances and exemptions to public water systems in non-primacy States not in compliance with Primary Drinking Water Regulations and on initiating enforcement actions, where necessary, to assure compliance with the requirements of the Act. An estimated 30 enforcement actions will be undertaken for violations of the regulations by public water systems in States without primacy and in States that have primacy but have requested EPA assistance.

Additional resources will be devoted to overviewing State public water supply primacy programs, preparing program guidance for issuance of variances and exemptions, initiation of enforcement actions, and evaluation of State UIC primacy applications.

In 1980, the extramural funds will be used to provide quick analytical support for response to potential emergencies involving imminent and substantial hazards to public health and safety.

1980 Explanation of Change from Budget Estimate

The net increase of $102,600 results from several actions. An increase of $33,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $6,300 and $2,200, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $80,300 to this activity.

Regional reprogrammings in order to support personnel costs in those areas which changed from the projections used one-year ago in the formulation of the 1980 budget resulted in transfers from toxic substances enforcement ($12,900); to air stationary source enforcement ($1,900); to financial management ($10,000); and to personnel management ($3,500).

1981 Plan

In 1981, the Agency requests a total of $764,500 for this program, of which $755,200 is for the Salaries and Expenses appropriation, and $9,300 is for the Abatement, Control and Compliance appropriation. The request for 28 permanent workyears represents a decrease of five from the previous year's level.

During 1981, the highest priority of the drinking water enforcement program will be response to emergency drinking water situations that involve imminent and substantial hazards to public health and safety. Drinking water enforcement will also focus on two programs: public water systems implementation and underground injection control (UIC). For the public water system implementation program, activities will include overview of State Drinking water enforcement programs (PWS & UIC), review of 21 primacy applications, providing legal support for variance and exemption activities in non-primacy States, support for the initiation of approximately 23 new enforcement actions, and continued support for enforcement proceedings initiated in 1980. Activities will also include issuance of Notices of Violation to States with primacy that have not adequately enforced provisions of the Act. The UIC program will begin implementation in 1981. The implementation plan includes legal and technical support for overview of State primacy programs, permit program initiation, and compliance monitoring and enforcement programs in non-primacy States. If necessary, a limited number of UIC permits will be issued by EPA in non-primacy States.

SOLID WASTE

Appropriation	Actual 1979	Estimate 1980	Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Salaries and Expenses.....	$9,875	$22,350	$15,456	$32,895	+$17,439	
Research and Development...	7,135	6,960	12,745	22,562	+9,817	
Abatement and Control and Compliance.....	45,511	62,979	71,859	91,991	+20,132	
Total.....	$62,521	$92,289	$100,060	$147,448	+$47,388	
Permanent Workyears.....	280	397	406	774	+368	
Full-time Equivalency.....	339	483	496	978	+482	
Outlays.....	$63,024	$57,600	$83,700	$125,500	+$41,800	
Authorization Levels.....	$172,162	*	*	*		

* Authorization pending.

PROGRAM HIGHLIGHTS

Public Sector Activities:						SW-13
Salaries and Expenses...	$1,317	$1,183	$1,498	$3,884	+$2,386	
Research and Development.....	7,135	6,960	12,745	22,562	+9,817	
Total, Research and Development Program	8,452	8,143	14,243	26,446	12,203	
Waste Management Regulations, Guidelines and Policies:						SW-21
Salaries and Expenses...	3,397	8,388	4,623	6,369	+1,746	
Abatement, Control and Compliance.....	9,586	3,000	11,906	18,637	+6,731	
Financial Assistance:						SW-31
Salaries and Expenses...	...	...	...	...	...	
Abatement, Control and Compliance.....	32,190	42,550	38,600	48,000	+9,400	
Waste Management Strategies Implementation:						SW-37
Salaries and Expenses...	2,366	3,552	3,625	10,130	+6,505	
Abatement, Control and Compliance.....	106	...	115	3,033	+2,918	

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Technical Assistance:						SW-43
Salaries and Expenses...	$1,867	$4,549	$1,604	$1,600	-4	
Abatement, Control and Compliance.....	3,042	...	3,919	5,094	+1,175	
Uncontrolled Hazardous Waste Sites:						SW-49
Salaries and Expenses...	...	504	558	1,737	+1,179	
Abatement, Control and Compliance.....	...	17,429	16,537	16,570	+33	
Total:						
Salaries and Expenses...	7,630	16,993	10,410	19,836	+9,426	
Abatement, Control and Compliance.....	44,924	62,979	71,077	91,334	+20,257	
Total, Abatement and Control Program.....	52,554	79,972	81,487	111,170	+29,683	
Hazardous Waste Enforcement:						SW-52
Salaries and Expenses...	928	4,174	3,547	5,086	+1,539	
Abatement, Control and Compliance.....	587	...	783	632	-151	
Permits Issuance:						SW-58
Salaries and Expenses...	...	...	...	4,090	+4,090	
Abatement, Control and Compliance.....	...	...	...	25	+25	
Total:						
Salaries and Expenses...	928	4,174	3,547	9,176	+5,629	
Abatement, Control and Compliance.....	587	...	783	657	-126	
Total, Enforcement Program.....	$1,515	$4,174	$4,330	$9,833	+$5,503	

Appropriation	Actual 1979	Estimate 1980	Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Permanent Positions						
Public Sector Activities, Total, Research and Development Program.....	21	20	23	69	+46	SW-13
Waste Management Regulations, Guidelines and Policies..	91	97	110	141	+31	SW-22
Financial Assistance.....	...	...	...	...	...	SW-31
Waste Management Strategies Implementation.....	95	129	122	262	+140	SW-37
Technical Assistance.....	47	37	32	26	-6	SW-43
Uncontrolled Hazardous Waste Sites.....	...	15	17	19	+2	SW-49
Total, Abatement and Control Program.....	233	278	281	448	+167	
Hazardous Waste Enforcement	26	99	102	136	+34	SW-52
Permit Issuance.....	...	...	...	121	+121	SW-58
Total, Enforcement Program	26	99	102	257	+155	
Full-time Equivalency						
Public Sector Activities, Total, Research and Development Program.....	35	30	36	89	+53	SW-13
Waste Management Regulations, Guidelines and Policies...	122	157	163	197	+34	SW-22
Financial Assistance.....	...	...	...	...	...	SW-31
Waste Management Strategies Implementation.....	92	131	131	313	+182	SW-37
Technical Assistance.....	59	46	41	35	-6	SW-44
Uncontrolled Hazardous Waste Sites.....	...	15	17	19	+2	SW-49
Total, Abatement and Control Program.....	273	349	351	563	+212	
Hazardous Waste Enforcement	31	105	110	151	+41	SW-52
Permit Issuance.....	...	...	...	175	+175	SW-58
Total, Enforcement Program	31	105	110	326	+216	

OVERVIEW AND STRATEGY

The extent and severity of the hazardous waste management problem, including the immediate dangers of uncontrolled hazardous waste sites, have focused the attention of Congress and the public on the need for nationwide regulation of hazardous waste and emergency assistance to the most threatening problem sites. The potential for serious public health damages and environmental degradation caused by improper management of industrial and municipal wastes, as well as, the alarming frequency with which damaging incidents occur, makes effective administration of a national solid waste program a critical need in the years ahead.

The annual generation of municipal and industrial wastes totals almost 500 million metric tons. This includes 54 million metric tons of hazardous wastes, such as toxic chemicals, pesticides, acids, caustics, flammables and explosives. Only 10 percent of these are currently disposed of safely. With the curtailment of emissions to air and water due to other environmental laws, EPA estimates the amount of hazardous waste will grow by 30 percent in the next decade.

An EPA contractor study indicated that 32,000 to 50,000 dumpsites across the nation may already contain hazardous wastes. 1,200-2,000 of these may be significant problem sites. Potentially thousands of American communities face the risk of suffering public health and environmental damages such as occurred at the Love Canal in New York.

EPA's strategy for addressing these problems is two fold: emphasis on the implementation of a regulatory program for control of hazardous wastes and the management of wastes not classified as hazardous, through Subtitles C and D of the Resource Conservation and Recovery Act (RCRA); and high priority given to the continuation of the Agency program to identify, investigate, evaluate and, if necessary, respond to uncontrolled hazardous waste sites, as defined in the interim strategy issued by the Deputy Administrator during 1979.

Hazardous/Solid Waste Regulatory Program

The Resource Conservation and Recovery Act of 1976 (RCRA) established the first national program to protect public health and the environment from the damages caused by improper waste management practices. To handle prospective hazardous waste problems, EPA is continuing to develop the regulatory program mandated by RCRA which will reduce risks from improper hazardous waste disposal practices.

Requested increases for the solid waste budget in 1980 and 1981 acknowledge, for the first time since enactment of RCRA in 1976, the magnitude and importance of the hazardous waste problem. EPA has prepared a 1980 budget supplemental request reflecting the need to build an extensive knowledge of industrial wastestreams and hazardous waste treatment and disposal technology to be incorporated into the regulations. The 1981 budget request further demonstrates the Agency's strong support for the hazardous waste control program. EPA intends to improve the knowledge base supporting the regulations; broaden the scope of the regulations; accelerate the field implementation of the regulations; ensure adequate enforcement; and encourage strong State programs.

In response to a suit filed against EPA for missing the statutory deadline for promulgation of the major RCRA regulations, the Federal District Court approved December 31, 1979, as the promulgation date for the seven Subtitle C regulations. EPA proposed a list and criteria for defining hazardous waste; standards for generators and transporters; standards for hazardous waste treatment, storage and disposal facilities; procedures for notification of hazardous waste activities; and regulations for facility permits and development of State hazardous waste programs. Despite this progress, EPA failed to meet the ambitious schedule approved by the Court due, in large part, to: the comprehensive scope of the Subtitle C regulations; the complexity of the technical and policy issues raised in public comments and EPA's analyses of these comments; the undeveloped state of hazardous waste management technologies; the inclusion of new regulatory concepts; and efforts to coordinate and integrate the Subtitle C regulations with requirements of other major environmental laws.

EPA has submitted for Court approval a revised promulgation schedule for the Subtitle C regulations:

- in February 1980, EPA will promulgate standards for generators and transporters of hazardous wastes, and notification requirements;
- in April 1980, EPA will promulgate a list and four criteria for determining a hazardous waste, and interim status standards for facilities treating, storing and disposing of hazardous wastes;
- in fall 1980, EPA will promulgate technical performance standards for treatment, storage and disposal facilities.

By late 1980, EPA will move into an implementation phase for the hazardous waste program. Two phases of interim authorization for state hazardous waste programs will begin in 1981, the first phase introduced by the interim status standards and the second phase keyed to the effective date of the technical standards for hazardous waste facilities. Each phase will allow States two years to upgrade their hazardous waste programs to meet authorization requirements. EPA expects 37 States to seek and receive at least interim authorization in 1981. While RCRA provides for and encourages authorization of States to operate the hazardous waste regulatory program, it also requires that EPA operate the program for those states that do not seek or are unable to obtain authorization.

In 1981, the Agency will inaugurate a 6-year program to permit an estimated 30,000 hazardous waste treatment, storage and disposal facilities nationwide. States and EPA regional offices will issue, on almost a case-by-case basis, best engineering judgment permits against performance standards under Section 3004. This regulatory approach will require individual technical evaluations and increase the number of formal public hearings for permits.

EPA's regional Enforcement and Abatement and Control offices will share responsibility for issuing the 7,500 facility permits in the 19 unauthorized States. The Abatement and Control resources will be used to conduct the detailed technical review of the permit applications while Enforcement will provide legal review, administrative support and analysis of routine technical problems.

The enforcement provisions of RCRA center upon the administrative and public hearings requirements of permit issuance, and upon compliance monitoring activities in those States which do not assume responsibility for hazardous waste management. The enforcement program is responsible for developing enforcement provisions of the regulations; mechanisms for regional oversight of authorized states and enforcement programs in unauthorized states; and mechanisms for taking enforcement or prosecutory actions, and negotiating enforcement agreements. During 1981, regions will begin establishing compliance monitoring programs in unauthorized States. In these States, EPA will conduct site inspections; initiate enforcement actions (Notices of Warning, Notices of Violations, Compliance Orders, etc.) where generators, transporters, and storage/disposal facilities fail to comply with the law; and operate ADP tracking systems to maintain and monitor manifest, inspection, and enforcement information. For authorized states, EPA will conduct oversight activities, including joint inspections with the States, to determine whether or not States are adequately enforcing RCRA requirements.

The Resource Conservation and Recovery Act complements the extensive hazardous waste control program with a program for managing solid wastes and encouraging resource conservation and recovery. Under Subtitle D, criteria for the classification of sanitary landfills and guidelines for the development of State plans have been promulgated, thereby ushering in the implementation phase of the program. The emphasis in 1980 is on State initiation of their disposal site inventory. Also, under the President's Urban Policy, a 3-year grant program to local communities for resource recovery feasibility projects will conclude in 1981.

Financial and technical assistance are provided to assist the States in implementing their responsibilities under RCRA. Assistance to Federal, State and local agencies is provided in all areas of solid waste management through Technical Assistance Panels composed of expert contractors, EPA staff, and other experienced public officials. Grants to States are awarded annually for the development and administration of state hazardous and solid waste programs. In 1981 Subtitle C grants will grow substantially in recognition of the major role the States will soon play in implementing hazardous waste management programs. At the same time, States are expected to move toward self-supporting nonhazardous waste programs. Federal Subtitle D assistance, therefore, is being phased out over a 5-year period.

Research and development activities will assume, in 1981, a new double focus in order to: (1) provide a firm scientific basis for the RCRA regulations and the permit guidelines, and (2) accelerate development of techniques for investigation, remedial treatment, and containment to support the uncontrolled hazardous waste site program. In direct support of RCRA, the research program will be improving the techniques for: (1) sampling, chemical analysis and biological testing to support listing and de-listing of hazardous wastes, and (2) for evaluating the design and operation of proposed land disposal facilities and incineration facilities in the permitting process. A quality assurance program will be initiated to support both the investigation of uncontrolled hazardous waste sites and the characterization of industrial hazardous waste streams. The research program will also provide technical support and testing where necessary to determine the risks from hazardous waste sites. This effort will include coordination of work done by other agencies in health risk research. Other programs will include: hazardous waste site monitoring technique development; emergency response technology development for imminent hazards; studies of high volume wastes from mining; and development of technologies for recycle, reuse and treatment of hazardous wastes from industry.

Uncontrolled Hazardous Waste Site Program

The Resource Conservation and Recovery Act (RCRA), however, does not deal directly with the problem of abandoned, inactive or potentially inactive sites, except through the imminent hazard provision of Section 7003.

Consequently, EPA established the uncontrolled hazardous waste site program as an interim program to address the worse known problems associated with uncontrolled hazardous waste sites. The primary objective of the program is to eliminate threats to public health and welfare and ecologically sensitive areas. The interim strategy encompasses aggressive site discovery actions, investigations, emergency assistance and containment of sites where eligible under Section 311 of the Clean Water Act of 1977 or through enforcement actions. The resources for responding to a site under Section 311 of the Clean Water Act will be provided by the environmental emergency response and prevention program. This interim approach will only bridge the gap until "Superfund" legislation is enacted. It is not intended to be a major program of clean-up or containment in advance of funds and authorities available under the new legislation.

The uncontrolled hazardous waste site program was developed in late 1979 as a result of an EPA task force study on an "Agencywide Hazardous Waste Site Enforcement and Response System." The interim plan resulting from this study was presented as an 1980 budger amendment to Congress for $22 million and 70 permanent workyears and was appropriated by Congress. Since the completion of the initial study, the Headquarters Task Force has continued to participate in the identification, investment, assessment and case preparation for those sited which may be potential enforcemetn actions. Technical assistance and operational guidance have been provided by both the newly formed Abatement and Control uncontrolled hazardous waste sites program and the emergency response and prevention and solid waste programs. Research and Development activities have begun to focus on several priority areas as described above.

During 1980, the uncontrolled hazardous waste site program will continue to implement the interim strategy as delineated in the 1979 memoranda from EPA's Deputy Administrator. This strategy is based on the policies established during 1979 on site identification and discovery, field investigation, emergency response and enforcement actions. Top priority of this program in 1980 will be to ensure that only the most serious hazardous waste sites are addressed first, given the large number of potentially dangerous sites EPA must address.

The program plans to continue to develop, implement and maintain the interim strategy in 1981 at the same resource levels as 1980, and according to the same policies estanlished during 1979-1980. Pending enactment of "Superfund", most corrective actions at uncontrolled hazardous waste sites will be limited to short-term remedial action using available Section 311(k) funds and resources from the environmental emergency response and prevention program. As more sites are identified, increasing emphasis will be placed on the priority system in order to determine which sites to investigate with the limited available resources. Particular emphasis will also be given to integrating the Section 311, enforcement and investigation program efforts in order to make maximum use of expertise and available funds. If "Superfund" legislation is enacted during 1981, the resource requirements for this program will increase significantly.

Purpose - Research and Development Program

The solid waste research and development program, consistent with the goals of the Resource Conservation and Recovery Act of 1976 (RCRA), is directed to the development of technologies, methodologies, and the scientific data base necessary to achieve environmentally acceptable, cost-effective solid and hazardous waste management from generation through disposal.

The objectives of the programs are: (1) to develop methodologies and/or equipment to eliminate the release into the environment of materials in solid and hazardous waste which would be adverse to public health and welfare; (2) to establish a technical basis to support both EPA's efforts in developing guidelines and regulations for solid and hazardous waste management and the implementation of these guidelines and regulations by the Federal, State and local governments and the private sector; (3) to provide standardized monitoring systems, quality assurance, and support to the Agency's regulatory programs and the uncontrolled hazardous dumpsite program; (4) to evaluate and develop new or improved management techniques; (5) to evaluate and develop new or improved methods for the reduction, separation, processing, and recovery of resources including energy; and (6) to explore the development and validation of screening techniques for toxicity of solid waste.

Purpose - Abatement and Control Program

The solid waste abatement and control budget activity encompasses activities for promoting the protection of the public health and the environment through improved solid waste management practices. These activities include developing and promulgating regulations under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA); promoting resource conservation and recovery as the preferred solid waste management approach; providing technical and policy guidance to accompany these activities; assisting and encouraging State programs; providing technical assistance as mandated by RCRA; managing the President's Urban Policy grant program; and, for hazardous waste management, operating a Federal program when States are unwilling or unable to do so. This budget activity also includes emergency assistance to the most threatening uncontrolled hazardous waste site problems.

States have the primary role in implementing the Resource Conservation and Recovery Act. The authorization of State hazardous waste management programs is of primary importance to the successful implementation of Subtitle C of RCRA. Federal financial assistance will be available in helping States carry out this responsibility. However, the Federal government, along with the States, has a mandated responsibility to protect the public health and environment from improper hazardous waste management practices.

Therefore, a Federal program will be operated in States not seeking or denied authorization.

RCRA provides only discretionary authority for a Federal program or Federal enforcement for nonhazardous waste under Subtitle D of RCRA. EPA strongly encourages States to implement their responsibilities outlined in the Act for nonhazardous waste, and will receive financial and technical assistance to do so. Federal Subtitle D grant assistance is being phased out over a 5-year period, with States expected to move towards self-supporting non-hazardous waste programs.

EPA has the primary role in establishing national standards and programs to ensure proper management, transportation, treatment, storage, and disposal of hazardous waste and proper disposal of nonhazardous waste, and promoting resource conservation and recovery as the preferred solid waste management approach.

For hazardous waste, this includes promulgating a list and criteria for determining what constitutes a hazardous waste; standards for generators and transporters of hazardous waste, and for owners and operators of hazardous waste treatment, storage and disposal facilities; procedures for notification of hazardous waste activities; technical standards for permitting hazardous waste facilities using "Best Engineering Judgment" and requirements for authorization of State hazardous waste programs. For non-hazardous waste, EPA must promulgate criteria defining a sanitary landfill and conduct an inventory of all land disposal sites. EPA is also responsible for providing technical and other guidance for implementing the regulations. The RCRA mandated Technical Assistance Panels program will provide an outlet of expertise to States and local governments encountering problems on all aspects of solid waste management.

The Resource Conservation and Recovery Act (RCRA) does not deal directly with the problem of abandoned, inactive or potentially hazardous waste sites, except through the imminent hazard provision of Section 7003. EPA has established an interim program to address the worst known problems related to uncontrolled sites. The primary objective of the program is to eliminate threats to public health and welfare and ecologically sensitive areas.

The Abatement and Control activities are categorized under the following subactivities:

Waste Management Regulations, Guidelines and Policies: This subactivity involves (1) the development and promulgation of hazardous and non-hazardous waste regulations; (2) the development of technical and policy guidance for implementing the regulations; (3) the conduct of engineering, design, environmental and economic evaluations and assessments of solid waste management technologies and practices; and (4) national management and oversight of regional program implementation activities.

Financial Assistance: This subactivity provides grants (1) to States for the development and operation of hazardous waste management programs under Subtitle C of RCRA; (2) to States for the development of State non-hazardous waste regulations; (2) the and conduct of the RCRA mandated land disposal site inventory under Subtitle D of RCRA; and (3) to local governments for feasibility studies and other project development activities leading to the the implementation of resource and energy recovery systems.

Waste Management Strategies and Implementation: This subactivity involves: (1) oversight of authorized States that are developing and implementing hazardous waste programs; (2) conduct of a Federal program for unauthorized States under Subtitle C, including issuance of permits to hazardous waste facilities using "Best Engineering Judgment"; (3) direct support and oversight for implementatior of the solid waste management planning and land disposal site inventory requirements under Subtitle D; and (4) management of grants to local governments for resource and energy recovery projects under the President's Urban Policy Program.

Technical Assistance: This subactivity provides for (1) national management of the Technical Assistance Panels program; (2) technical assistance to State and local governments on all aspects of solid waste management; (3) public participation and education programs; and (4) the development and distribution of public and technical information materials.

Uncontrolled Hazardous Waste Sites: This subactivity provides for (1) aggressive identification of problem uncontrolled hazardous waste sites, (2) investigation leading to assessment and case preparation of those sites which may be potential enforcement actions, and (3) emergency assistance (where eligible emergency assistance and containment will be done under authority of Section 311 of the Clean Water Act (see description of Environmental Emergency Response and Prevention program element under Water Quality Media). Case preparation and enforcement actions are managed under the enforcement solid waste budget activity.

Purpose, Enforcement Program

The goals of the solid waste enforcement program are to see that all applicable facilities comply with standards established under the Resource Conservation and Recovery Act, regulating transportation treatment, storage, and disposal of solid and hazardous wastes, and to take legal action to compel responsible parties to take remedial steps regarding uncontrolled sites posing an imminent and substantive hazard to health and the environment. To achieve this goal, EPA has established a single program element for 1980, consisting of two subelements: (1) the hazardous waste enforcement subelement and (2) the uncontrolled hazardous waste site subelement. For 1980 only, the hazardous waste enforcement subelement includes 2 permanent workyears which will support hazardous waste permit issuance activities. In 1981, however, the permitting and uncontrolled hazardous waste site enforcement resources become separate program elements, and Solid Waste Enforcement will consist of three program elements: (1) the hazardous waste permit issuance program, (2) the uncontrolled hazardous waste site enforcement program and (3) the hazardous waste enforcement program.

Solid waste enforcement provisions were enacted largely as the result of wide scale, historical mismanagement of hazardous wastes, and are designed to prevent similar mismanagement from occurring in the future. Regulation will take place through the permitting of hazardous waste management facilities and subsequent monitoring of those facilities to verify compliance. Permitting and compliance monitoring programs will regulate not only generators of hazardous wastes, but on and off-site treatment, storage and disposal facilities as well. A separate enforcement mechanism, the hazardous waste manifest system, will monitor hazardous waste transporters to ensure that wastes transported from a generator to a treatment, storage or disposal facility actually reach the intended destination.

Under provisions of RCRA, States may assume responsibility for operating permit and enforcement programs. In cases where a State has interim or final authorization to conduct such programs, EPA is available to assist in State efforts, and will overview authorized programs for adequacy.

Permit issuance, compliance monitoring and enforcement programs are currently in their formative stages. EPA will not begin to issue permits, monitor for compliance, or take enforcement actions in connection with permitted facilities before the start of 1981. However, investigation and enforcement activities were initiated in 1979 against uncontrolled hazardous waste dump sites suspected of posing imminent or substantial hazards to public health and the environment. The Hazardous Waste EnforcementTask Force, created to prepare and manage imminent hazard enforcement case actions, has thus far filed 13 cases with the Department of Justice, using emergency enforcement provisions available under Section 7003 of RCRA, Section 1431 of the Safe Drinking Water Act, Section 504 the Clean Water Act, and TSCA. Initiation of enforcement actions against sites posing an imminent or substantial danger will continue to be the highest priority activity for the Solid Waste enforcement program until such time as these sites no longer present a threat.

SUMMARY OF INCREASES AND DECREASES	(in thousands of dollars)
1980 Solid Waste Program	$100,060
Salaries and Expenses	+17,439
The net increase is primarily related to the increased workyears.	
Research and Development	+9,817
The net increase is due to hazardous waste monitoring and measurement development and quality assurance; research on thermal destruction of hazardous waste; uncontrolled hazardous waste sites; and health effects associated with hazardous waste sites. There is a decrease in municipal solid waste land disposal and resource recovery, and large volume waste characterization will be phased out.	
Abatement, Control and Compliance	+20,132
The net increase provides additional funds for regulatory support under Subtitle C of RCRA; State grants, for hazardous waste management; regional implementation and/or oversight of hazardous waste programs; technical assistance; and the uncontrolled hazardous waste sites program. These increases are offset by a decrease in State solid waste management planning grants.	
1981 Solid Waste Program	147,448

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $147,447,800 is requested in 1981. This request, by appropriation account, is as follows:

Salaries and Expenses	$32,894,700
Research and Development	22,562,200
Abatement, Control and Compliance	91,990,900

This represents an increase of $47,388,100 over the 1980 level. This is due to several actions: +$8.8 million for regulatory support under Subtitle C of RCRA; +$11.4 million in State grants for hazardous waste management; +9.6 million for regional implementation and/or oversight of hazardous waste programs; +$1.4 million for technical assistance; and +$1.2 million for uncontrolled hazardous waste sites program. These increases are partially offset by a decrease of $2.0 million for State solid waste management planning grants, as part of a 5-year phase out of Subtitle D grant funding. An increase of +1.5 million for enforcement of the RCRA Subtitle C program primarily at the regional level; and +$4.1 million for regional permit issuance and State permit program oversight. An increase of +$4.0 million for hazardous waste monitoring and measurement development and quality assurance; +$5.9 million for research activities on thermal destruction of hazardous waste; +$2.6 million for uncontrolled hazardous waste sites and +$3.0 million for research activities on the health effects associated with hazardous waste sites. These increases are offset by a decrease of $3.3 million, as programs on municipal solid waste land disposal and resource recovery, and large volume waste characterization will be phased out.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate	$92,299
Congressional increase/decrease:	
Resource recovery local financial assistance	-3,950
Academic training	+90
Travel	-91
ADP	-16
Supplies and expenses	-35
Proposed pay raise supplemental	+508
Reprogramming for authorized workyears	-281
Miscellaneous reprogrammings	-454
Proposed RCRA supplemental	+12,000
Current 1980 estimate	100,060

Congressional decreases to the solid waste media request included a reduction of $3,950,000 to resource recovery local financial assistance grants; a $2 million decrease to travel resulting in a reduction of $91,000 to this media; a $1 million decrease to ADP resulting in a decrease of $16,000; and a $2 million decrease to supplies and expenses resulting in a decrease of $35,000 to the solid waste media.

A supplemental is proposed to partially fund the October 1979 pay raise and includes $508,000 for this media. The overall reprogramming throughout the Agency to provide for authorized workyears results in a decrease of $281,000. Miscellaneous reprogrammings result in a decrease of $454,000.

A proposed supplemental under RCRA will provide an increase of $12 million.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$62,520	$103,882
Effect of congressional changes	-4,002	...
Pay raise supplemental	+508	...
Reprogrammings	-735	...
Proposed RCRA supplemental	+12,000	...
Change in amount of carryover funds available	+11,778	-3,822
Program increase	-3,000	+44,940
Change in rate of obligation	+24,813	...
Total estimated obligations	103,882	145,000
(From new obligation authority)	(90,060)	(135,000)
(From prior year funds)	(13,822)	(10,000)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

Congressional changes discussed in the previous section are expected to result in a decrease of $4,002,000 to obligations. The effect of the proposed supplemental for partial funding of the October 1979 pay raise results in an increase of $508,000.

Reprogrammings result in a decrease of $735,000 to obligations. The proposed supplemental for RCRA will increase obligations by $12 million.

The amount of carryover funds to be obligated in 1980 is $13,822,000, an increase of $11,778,000 from the 1979 level. In 1981, it is estimated that $10 million of carryover funds will be obligated, a decrease of $3,822,000 from the 1980 level.

The increase in budget authority in 1980 was previously estimated to decrease obligations by $3 million. In 1981, the program change will increase obligations by $44,940,000.

60-531 O - 80 - 49

SOLID WASTE

Public Sector Activities

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Control Technology:					
Salaries and Expenses.	$1,317	$1,183	$1,498	$3,884	+$2,386
Research and Development.....	7,135	6,960	12,745	22,562	+9,817
Total.....	8,452	8,143	14,243 a/	26,446	+12,203
Permanent Positions....	21	20	23	69	+46
Full-time Equivalency..	35	30	36	89	+53

a/ Includes a $5,600,000 pending supplemental for 1980 research necessary to support the Research Conservation and Recovery Act (RCRA) regulation development.

Budget Request

The Agency requests a total of $26,445,800 for 1981, an increase of $12,203,300 and 46 permanent workyears over 1980. Included in this total is $3,883,600 for Salaries and Expenses and $22,562,200 for the Research and Development appropriation, with increases of $2,385,600 and $9,817,700, respectively. Of this increase, $4,020,000 will be devoted to a program for hazardous waste monitoring and measurement methods development and quality assurance; $5,950,000 to expand the research needed to provide data and guidance manuals on thermal destruction of hazardous wastes to support RCRA permit writers, and $2,550,000 to increase work on the development of technologies for remedial actions for uncontrolled hazardous waste dumpsites; and an increase of $3,000,000 to document and determine the health risks associated with hazardous waste sites. In turn, an offsetting decrease of $3,316,700 will be effected by phasing out the following areas during 1981: municipal solid waste, land disposal, resource recovery from municipal solid waste, and large volume wastes characterization.

Program Description

Until recently, the major emphasis of EPA's research program had been non-hazardous (municipal) wastes. The research was geared primarily towards solving landfill design and operating problems and researching resource recovery from solid waste. Only a limited number of projects were performed on hazardous waste. After the passage of RCRA, EPA revised its research strategy towards the very difficult problem of hazardous wastes and their effects on the environment. There is now the realization that past mismanagement of hazardous wastes has left us with a legacy of dangerous situations which must be identified and cleaned up. Research to guide the cleanup effort and to develop better hazardous waste management practices must be accelerated.

The program will be directed to the development of technologies, methodologies and the scientific data base necessary to achieve environmentally acceptable, cost-effective solid and hazardous waste management (generation through disposal) in which reuse and recovery of resources are important considerations.

1979 Accomplishments

In 1979, obligations were $8,452,000 which included $1,317,300 for inhouse expenses and $7,134,700 for extramural activities. During 1979, EPA:

- Completed pilot-scale studies and published a report on the physical and chemical stability performance of 10 liner materials which were exposed to municipal solid waste leachate.

- Published a report on the results of seven years of field-scale research to characterize gas and leachate generation and pollutant removal at municipal solid waste landfills. A two-dimensional model of leachate migration patterns was developed and correlated with field results. This research forms the basis for the prediction of the performance of sanitary landfills.

- Completed and published the results of an evaluation on the status of land cultivation technology for treating industrial and municipal wastes, including case studies of specific facilities, review of design parameters and documentation of environmental impacts.

- Conducted a national symposium on land disposal and resource recovery of municipal solid wastes and published proceedings. The technical areas covered included methods development and cost assessment, identification of pollutant potential, prediction of pollutant migration, design of facilities, and disposal/recovery alternatives.

- Completed and published an evaluation of three waste leaching test methods to assist in developing regulations for the identification of hazardous waste under the Resource Conservation and Recovery Act of 1976 (RCRA).

- Provided the Office of Solid Waste and the States with a technique for performing the inventory of disposal facilities. The technique uses site data which can easily be obtained from State records and site visits.

- Provided to the Office of Solid Wastes, Office of Enforcement, EPA regional offices, and the States over two workyears of technical assistance pertaining to the identification and solution of pollution problems caused by uncontrolled hazardous waste dumpsites. Some of the sites which received and continue to receive assistance include: Kin-Buc, Love Canal, and the LaBounty Landfill.

- Provided 1.5 workyears of direct technical assistance to the Office of Solid Waste in preparation of the RCRA hazardous waste regulations. Efforts included review of public comments, preparation of background documents and of draft revised regulations.

- Completed and published a study which compared emissions from St. Louis refuse-derived fuel (RDF) plants and other waste handling facilities. The results showed that relatively large emissions of bacteria can be expected from solid waste processing plants which have no dust control. Analyses for viruses were negative.

- Sponsored a symposium on scrap futures markets for the purpose of discussing with industry representatives the feasibility of using such market trading to increase the use of recycled secondary materials recovered from wastes. The symposium highlighted a completed research study and a handbook on scrap futures markets developed by the research program. At least one futures exchange has subsequently announced the formation of a futures market for ferrous scrap.

- Completed a study which determined that the lack of a ready market is the major impediment to recovering glass from solid wastes.

- Conducted a national symposium on waste pesticide disposal research and development needs.

- Completed and published the results of a study to determine the nature and quantity of industrial hazardous waste which is treated and disposed of in municipal and private off-site facilities. The study found that 23 percent of the hazardous waste generated by the five major industrial categories studied was managed in this manner.

- Demonstrated that densified forms of refuse derived fuels (d-RDF) can successfully be substituted for coal in industrially sized stoker fired boilers. Tests completed at the Erie, Pennsylvania General Electric plant represented a major cooperative effort between industry and EPA.

- Completed and published a study which analyzed specific scenarios for municipal solid waste disposal in 1990 with and without resource recovery. Results show that the net environmental impact of resource recovery would be positive. Discharge of some pollutants to surface waters would increase but most air pollution emissions would be reduced, less landfill capacity would be required, and energy savings would be realized.

- Completed and published, in a manual, the results of a study to determine the performance and design of natural and artificial surface covers for controlling moisture infiltration at land disposal facilities.

- Completed six special studies of resource recovery at reports to Congress, as mandated by Section 8002 of RCRA.

- Completed a field study of mining solid waste and initiated a major environmental and engineering assessment of mining solid waste management practices in response to RCRA.

- Initiated field studies of the technical and environmental requirements for co-combustion of selected hazardous wastes in cement kilns.

1980 Program

In 1980, the Agency has allocated a total of $14,242,500 to this program, of which $5,600,000 is a pending supplemental for research necessary to support RCRA regulation development for landfills, land treatment and thermal destruction. Of this total, $1,498,000 is for the Salaries and Expenses appropriation and $12,744,500 is for extramural purposes under the Research and Development appropriation. The 1980 program includes:

- Landfilling: Studies ongoing at the end of 1979 will be continued. They include: bench, pilot scale, and lysimeter studies of rates of leachate and gas production under different moisture regimes, gas and leachate migration, leachate attenuation in various soils, characteristics of natural and synthetic liners, and control technology for the treatment of leachate and gas from municipal and hazardous waste landfills. A major effort will be undertaken to develop and publish guidance manuals on containment, chemical fixation of waste, liner performance and design, landfarming, water mass balance calculations, surface cover design, leachate collection, waste and leaching modification, pollutant transport, and landfill closure procedures. A major 5-year research program will be initiated to provide critical data needed to support the implementation and mission of the RCRA hazardous waste disposal regulations. Ongoing research in municipal landfill site design and operation will be completed. No additional municipal solid waste research will be conducted beyond 1980.

- Hazardous Waste Destruction: The following small scale studies underway at the end of 1979 will be continued: time and temperature requirements for thermal destruction, detoxification, biodegradation, and bulk encapsulation of hazardous materials. A major effort will be initiated to develop a guidance manual for assessing permit applications for hazardous waste incinerators. Ongoing thermal decomposition research will be expanded and accelerated to produce protocols for conducting incinerator test burns, for measuring and analyzing hazardous waste destruction efficiency and air pollution control equipment effectiveness, for predicting the performance of alternative incinerator designs, and for determining the basic thermal decomposition requirements and decomposition product production for hazardous waste streams to be regulated under RCRA.

- Remedial Action: Field verification of a remedial scheme at a polluting municipal solid waste site will be continued. In addition, remedial schemes will be designed and field verification initiated. The effectiveness of existing hazardous materials spill control equipment for emergency response action at uncontrollable sites will also be evaluated at field sites.

- Resource Conservation and Recovery: Ongoing research in municipal processing and preprocessing for resource recovery will be continued on a reduced scale; assessments of existing resource recovery systems will also be continued. Research in this area will be shifted from recovery from municipal solid wastes to reuse and recovery from industrial wastes.

- Hazardous Waste Monitoring: Sampling and analytical methods for hazardous wastes and for the air, water and soil samples taken from hazardous waste disposal sites are being evaluated, validated, and developed. In addition, a quality assurance program is being initiated in support of the investigation and enforcement actions on uncontrolled hazardous waste sites.

- Hazardous Waste Treatment: The effort will be directed towards detoxification and/or recovery techniques for wastes from the organic chemicals industry, as well as towards evaluating technologies available for recovery of metal values from the ferrous and non-ferrous industry.

- High Volume Wastes: A major effort consisting of a 3-year program to assess the environmental impact of hazardous waste generation, current waste management practices, and the development of new control requirements for the mining industry is underway.

1980 Explanation of Change from Budget Estimate

The net increase of $6,099,800 results from several actions. An increase of $46,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $20,100 to this activity.

A transfer of $478,000 was made within the solid waste media, from the abatement and control uncontrolled hazardous waste sites activity where the resources were included in the hazardous waste sites amendment.

Also included is a $5.6 million pending supplemental for research necessary to support the Resource Conservation and Recovery Act regulation development.

1981 Plan

The Agency requests a total of 69 permanent workyears and $26,445,800 for this program, of which $3,883,600 is for the Salaries and Expenses appropriation and $22,562,200 is for the Research and Development appropriation. This represents an increase of 46 permanent workyears and $12,203,300.

Of this increase, $4,020,000 will be devoted to a program for hazardous waste monitoring and management methods development and quality assurance; $5,950,000 to expand the research needed to provide data and guidance manuals on thermal destruction of hazardous wastes to support RCRA permit writing; $2,550,000 to expand research into technologies that can be used for remedial actions at uncontrolled hazardous dumpsites; and $3,000,000 to document and determine the health risks associated with hazardous waste sites. EPA's R&D program on health effects will be coordinated with other federal agencies having more prominent roles. In turn, an offsetting decrease of $3,316,700 will be effected by phasing out the following areas during 1981: municipal solid waste land disposal, resource recovery from municipal solid waste and large volume wastes characterization.

Specific items of research include:

Hazardous Waste Monitoring An extensive effort will be undertaken in hazardous waste monitoring and quality assurance to establish techniques that will provide a sound scientific and legal basis for the data required by the RCRA regulations and the uncontrolled hazardous waste site program. Major activities will include:

- Developing and evaluating protocol procedures for obtaining hazardous waste samples.
- Completing a problem definition study for air monitoring.
- Evaluating methods for analysis of samples.
- Completing a manual using best available methodology for analysis of samples.
- Evaluating bioaccumulation test procedures in the proposed regulation (Section 3001).
- Providing analytical methods for characterization of wastes listed in the RCRA (Section 3001).
- Initiating intercomparison studies in support of RCRA, (Section 3004).
- Providing additional reference materials on soil and sludge.

Remedial Action The remedial action program is concerned with the development and assessment of technologies which can be used for clean-up activities at uncontrolled hazardous dumpsites. In this program, EPA will not be accepting the responsibility for cleaning up any hazardous dumpsite which is not owned by the Federal government. The legal responsibility for clean-up at these sites may belong to States, local governments or private entities, and the EPA can not assume this responsibility. The funds in this program therefore will not be used to pay for the clean-up at a non-Federal site. EPA will develop and assess technologies which may be used at clean-up sites and will be assessing technologies developed by others that are used in remedial actions at hazardous sites. The EPA commitment at non-Federally owned sites in this program therefore is limited to the assessment of specific equipment and technologies. The EPA costs will be associated with this assessment activity only. The overall cost of cleaning up the hazardous dumpsite would remain with the entity which has the legal responsibility for clean-up. Whereever possible, the EPA demonstration and assessment activity will be conducted at test facilities and hazardous dumpsites which are owned by the federal government.

In 1981, the program will be expanded to undertake field testing of technologies available for abating pollution problems at uncontrolled waste sites. Much of the knowledge and technology for this action has already been developed under the hazardous waste spills program, but requires field testing. The program will initiate field testing of a variety of on-site treatment options within 3-6 months of the start of the program. Permanent remedial action methods will also be developed and tested under actual field conditions so that (a) quick response capability for initial cleanup operations can be validated; (b) defensible long-term closure recommendations can be made to various regulatory agencies; and (c) effectiveness of remedial schemes can be established. The development of technology for containment of pollutant emissions will be directed toward preventing pollutants from leaving the boundary of the site and contaminanting the groundwater, surface waters, air and surrounding soil media. This program will demonstrate remedial action techniques, equipment and technology to contain, treat or destroy the hazardous wastes; the leachate produced from the wastes; the contaminated soils, standing water and groundwater; and volatiles or gases.

Onsite Containment In 1981, this program will demonstrate remedial action techniques such as surface and groundwater control, chemical immobilization, plume management, and encapsulation and reburial to establish their cost effectiveness.

Field Treatment In 1981, this program will demonstrate at one or more hazardous waste dump sites (including pits, ponds, lagoons, subsurface fills, and storage sites) the following remedial action technologies and equipment:

- A field-modified anaerobic/aerobic biological treatment system for biodegradable hazardous materials.
- A mobile system for "washing" contaminated soils.
- Mobile physical-chemical systems, including flocculation/sedimentation, activated carbon treatment equipment for concentrating wastes and leachates.
- A mobile thermal regeneration system for granular activated carbon.
- Land cultivation with nutrient injection. This process provides for the in-situ biodegradation of the organic hazardous wastes or contaiminants in the waste site.
- Catalytic wet oxidation of chlorinated hydrocarbons.
- Three mobile hazardous waste or leachate preprocessing/concentration technologies (modified mutiple stage thin film distillation, continuation mechanical sludge dewatering, and the Dravo electro-coagulation process).

Onsite destruction In 1981, this program will demonstrate a mobile incineration system for destroying hazardous materials which appear as floating scum in lagoons, as contents of drums, or as contaminated soils.

Landfilling and Land Treatment The major effort begun in 1980 to develop and publish guidance manuals for the implementation of the hazardous waste regulations will be continued. The following manuals will be completed, incorporating research results and data: containment, chemical fixation of wastes, liner performance and design, land treatment, water mass balance calculations, surface cover design, leachate collection, waste and leaching modification, and landfill closure procedures. Training programs in the use of the manuals for EPA and state permit writers will be established. An extensive five year research program to expand and improve the data base in the manuals will be continued. New manuals on volatile emissions from landfills and surface impoundments and on predicting pollution migration in soils will be initiated. New and novel concepts for early detection and repair of landfill and surface impoundment failures will be investigated.

Hazardous Waste Destruction The major effort begun in 1980 to develop and publish guidance manuals for the implementation of hazardous waste regulations will be expanded ($5,950,000 increase from 1980). The manuals on conducting incinerator test burns for measuring hazardous waste destruction efficiency and air pollution control equipment effectiveness and for predicting the performance of new incinerator design will be completed but with limited data bases. An extensive test burn program will be undertaken to directly support the evaluation of permit applications by performing preliminary small scale test burns. Results from these test burns will be used in the design of the required full scale test burn. New methods for measuring toxic compounds in the incinerator offgases will be investigated. The effectiveness of incineration of hazardous wastes in industrial boilers will be monitored in experimental units and full scale operations. The guidance manuals will be updated as new data and methods become available from these programs.

Resource Conservation and Recovery Ongoing efforts to examine the potential for resource reuse and recovery from industrial solid and hazardous wastes will be continuec.

Hazardous Waste Treatment Ongoing efforts to develop or assess technologies using physical, chemical and biological methods to concentrate, neutralize, or detoxify hazardous wastes from industry will be continued. An industry by industry examination will be made to identify potential uses for these technologies as alternatives to landfilling or thermal destruction.

Risk Assessment A new initiative ($3,000,000) will provide for chemical, epidemiological, toxicological, and clinical tests to determine the health risks from hazardous waste sites. EPA's activities in this area will be coordinated with other federal agencies having more prominent roles.

In dealing with hazardous waste disposal sites, it is not always possible to eliminate the hazardous materials from the environment, i.e., some hazardous substances, no matter what is done, will continue to show up in food, drinking water or the air. In such cases it is necessary to provide an estimate of the residual risk as a function of the extensiveness of various abatement and control actions. This program will:

- determine which measurements are needed for exposure determination and calculation of risk, i.e., air exposures, drinking water, soil levels, etc;
- determine the population at risk and the health effects;
- wherever possible develop from available data, a dose-response relationship derived from the community's exposure situation;
- perform short-term biological tests where needed;
- provide, from the above, an estimate of the number of people who will suffer serious adverse health effects from exposure to hazardous waste and estimate the increased risk to the exposed population.

SOLID WASTE

Waste Management Regulations, Guidelines and Policies

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Regulations, Guidelines and Policies/Hazardous Waste:					
Salaries and Expenses...	$1,862	$5,848	$3,499	$4,994	+$1,495
Abatement, Control and Compliance.....	4,701	3,000	10,376 a/	17,726	+7,350
Regulations, Guidelines and Policies/Solid Waste:					
Salaries and Expenses...	994	1,805	829	740	-89
Abatement, Control and Compliance.....	686	...	1,200	600	-600
Regulations, Guidelines and Policies/Resource Conservation:					
Salaries and Expenses...	541	735	295	635	+340
Abatement, Control and Compliance.....	110	...	330	311	-19
Regulations, Guidelines and Policies/EIS:					
Abatement, Control and Compliance.....	150	...	...	...	...
Love Canal:					
Abatement, Control and Compliance.....	3,939	...	...	...	...
Total:					
Salaries and Expenses...	3,397	8,388	4,623	6,369	+1,746
Abatement, Control and Compliance.....	9,586	3,000	11,906	18,637	+6,731
Grand Total.....	12,983	11,388	16,529 a/	25,006	+8,477

a/ Includes a proposed supplemental for $6.4 million to provide first phase of an effort to refine EPA's data base on the scope of the Hazardous Waste problem, and to assist permit writers in their efforts to permit new and existing facilities.

Permanent Positions					
Regulations, Guidelines and Policies/Hazardous Waste	52	69	78	119	+41
Regulations, Guidelines and Policies/Solid Waste	27	23	23	13	-10
Regulations, Guidelines and Policies/Resource Conservation	12	5	9	9	...
Total	91	97	110	141	+31
Full-time Equivalency					
Regulations, Guidelines and Policies/Hazardous Waste	67	99	107	151	+44
Regulations, Guidelines and Policies/Solid Waste	35	36	33	23	-10
Regulations, Guidelines and Policies/Resource Conservation	20	20	23	23	...
Total	122	157	163	197	+34

Budget Request

The Agency request for this subactivity is $25,006,100 and 141 permanent workyears. Included in this amount is $6,369,300 for the Salaries and Expenses appropriation and $18,636,800 for the Abatement, Control and Compliance appropriation. An increase of $6,731,000 is provided for 1981 extramural funding, primarily in support of regulations under Subtitle C of Resource Conservation and Recovery Act (RCRA).

Program Description

This subactivity involves the promulgation of standards and regulations to ensure proper hazardous and solid waste management practices and the economic, industrial, technological, environmental and other analyses to support the rulemaking function. Also included are the development of technical and policy guidance for implementation of the RCRA regulations and national oversight of implementation activities. The following program elements are included in this subactivity:

Regulations, Guidelines, Policies/Hazardous Waste -- This program element provides for national management of the RCRA Subtitle C program. Included are further development and refinement of the criteria and regulations for identification, management and disposal of hazardous wastes; and supportive analyses and assessments of management approaches and technologies. Also included is provision of guidance to the regions and States for nationally consistent implementation of the Subtitle C regulations.

Regulations, Guidelines, Policies/Solid Waste -- This program element provides for national management of the RCRA Subtitle D program. This includes development of technical and policy guidance on Subtitle D State planning and implementation issues, and oversight and guidance to support States' application of the criteria for determining a sanitary landfill and carrying out the Open Dump Inventory.

Regulations, Guidelines, Policies/Resource Recovery -- This program element includes continued national management for the President's Urban Policy resource recovery grant program, development of guidelines for Federal procurement of products containing recycled materials, evaluation of resource recovery technologies and conduct of resource recovery seminars to promote adoption of resource recovery and conservation as a preferred solid waste management option.

Regulations, Guidelines, Policies/EIS Preparation -- Until 1980 this program element provided for the completion of environmental impact statements (EIS) and economic impact analyses for regulations under Subtitles C and D of RCRA.

Love Canal -- This program element existed in 1979 and contained funding for a demonstration project of remedial work at the Love Canal in Niagara, New York.

REGULATIONS, GUIDELINES, POLICIES/HAZARDOUS WASTE

1979 Accomplishments

On December 18, 1978, EPA proposed a list and criteria for determining a hazardous waste (Section 3001), standards for generators of hazardous waste (Section 3002) and standards for owners and operators of hazardous waste treatment, storage and disposal facilities (Section 3004). Regulations for permit issuance (Section 3005) and for authorized State programs (Section 3006) were combined with similar regulations under the Clean Water, Clean Air, and Safe Drinking Water Acts for, respectively, the National Pollutants Discharge Elimination System (NPDES), Prevention of Significant Deterioration (PSD), and Underground Injection Control (UIC) into a consolidated regulatory proposal.

Several technical analyses and studies were initiated to support development or revision of regulatory assumptions in order to:

- respond to more than 40 major and hundreds of minor issues raised by over 1,200 public comments received on the proposed regulations;
- promulgate the regulations by the December 31, 1979 deadline approved by the Federal District Court (subsequently revised); and
- prepare an implementation program.

The major contractual efforts in 1979 included an assessment of the impact of alternative regulatory options on generators of small amounts of hazardous waste; an analysis of the costs and economic impacts of the regulations on six most-affected industries and on surface impoundments already in use for industrial waste water treatment; quality assurance and validations of test protocols; and development of design and operating guidance for inclusion in manuals for owners and operators of hazardous waste treatment, storage and disposal facilities subject to the Section 3004 regulations.

Design began on a data processing system to accomodate data to be generated by the notification, manifest reporting and permit activities associated with Subtitle C implementation. The system will be designed for compatibility with other EPA and existing State systems.

EPA continued to receive information on the effects of exposure to the improper management of hazardous waste and rendered assistance to regional offices and states in reponding to hazardous waste emergencies, such as in Toone, Tennessee, and in Jackson County, Indiana, where large amounts of chemical waste were improperly stored in a sandy, ground water discharge area.

EPA released the first regional survey of sites containing hazardous wastes and a contractor stuoy which estimated that between 1,200 - 2,000 abandoned or inactive waste sites nationwide may pose a significant threat to public health. Headquarters provided guidance to the regions on identification and preliminary assessment of uncontrolled dumpsites and initiated the design of a new Federal emergency response and clean-up program to supplement Subtitle C's regulatory control of currently-operating disposal sites. Beginning in 1980, this program is included under the uncontrolled hazardous waste sited budget subactivity.

1980 Program

The current estimate for this program element is 78 permanent workyears and $13,875,200, of which $3,499,400 is for Salaries and Expenses, and $10,375,800 is for extramural purposes under the Abatement, Control and Compliance appropriation.

EPA, with the agreement of Federal District Court, will complete analysis of issues raised by public comments and promulgate, in February 1980, standards for generators of hazardous waste (Section 3002); standards for transporters of hazardous waste (Section 3003); and a notice on notification requirements (Section 3010). These will be followed in April 1980, by an initial list and four criteria for determining a hazardous waste (Section 3001) interim status standards for owners and operators of hazardous waste treatment, storage and disposal facilities (Section 3004) and regulations for permit issuance (Section 3005) and for authorization of State programs (Section 3006) as part of the Consolidated Permits regulations. These core regulations will be followed by Section 3004 technical standards for treatment, storage and disposal facilities in the fall of 1980.

The Federal standards under Section 3004 will be Best Engineering Judgement standards. They will set performance standards to be met by landfills, landfarms, surface impoundments, incinerators, and land treatment facilities and specify the factors to be considered in individual facility permitting. This approach for regulation of the estimated 30,000 treaters, storers and disposers of hazardous waste nationwide shifts the burden of developing the permit parameters to the State and regional permit writer. To guide the application of Best Engineering Judgment to a permit in later years, headquarters will begin to develop the extensive knowledge base needed about industry specific wastestreams and control practices and technologies.

EPA will initiate in 1980 the first phase of an extensive evaluation of industrial waste to yield data and information to support five regulatory development needs of the hazardous waste program:

- assessments of industry-specific treatment and disposal practices and impacts to support issuance of Best Engineering Judgment permits against Section 3004 performance standards;
- establishment of safe cut-off levels for regulatory coverage of wastestreams (small generator cut-offs);
- speedy response to petitions to remove a hazardous waste from the initial Section 3001 list;
- justification of additional listings under Section 3001; and
- identification of candidate wastestreams for reuse and recovery activities.

In 1980, the evaluation will provide engineering and impact assessments of approximately 220 industrial waste streams, development of analytical procedures, and analysis of samples.

Another essential component of the 1980 extramural program is support for the onset of implementation activities in late 1980 and 1981. Developmental work will continue on manuals to assist permit writers in evaluating facilities against performance standards and to describe preferred designs and operating procedures for facility owners and operators seeking to comply with the Best Engineering Judgement standards. Analyses will be conducted of policy issues, such as siting of hazardous waste facilities and State authorization, and on permitting procedures. Development of ADP systems to facilitate implementation and reporting requirements will continue. A national contract for regional handling and processing of up to 450,000 notifications from generators, transporters and hazardous waste facilities will be developed.

1980 Explanation of Changes from Budget Estimate

The net increase of $5,026,500 results from several actions. An increase of $102,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and $1 million to ADP costs resulted in a decrease of $17,900 and $12,700, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $133,500 to this activity.

A transfer of $915,100 was made within the solid waste media to other activities and $26,100 was transferred to the management and support media to support an inventory support contract and a Waste Alert Program (A citizen education program for hazardous waste). A transfer of $183,900 was made within the solid waste media to technical information development and $186,900 to management and support for the Office of Water and Waste Management program management in order to provide for projected costs based on 1979 expenditures.

A proposed supplemental for $6.4 million is proposed for 1980 to provide critical regulatory data to permit effective and timely implementation of the hazardous waste regulatory effort in 1981.

1981 Plan

Resources required for this program element are 119 permanent workyears and $22,720,100, of which $4,994,300 is for the Salaries and Expenses appropriation and $17,725,800 is for the Abatement, Control and Compliance appropriation. The major increases in the hazardous waste program element will expand technical support for its regulations under Sections 3001 and 3004 of RCRA.

EPA will not have the knowledge base to list in its initial Section 3001 regulations all the hazardous wastestreams covered by RCRA and to prescribe national standards for the generation, transport, treatment, storage and disposal of each wastestream. In 1981, EPA will continue building the data and information base it needs to refine and broaden its hazardous waste regulations.

The second year of the industrial waste evaluation will continue to:

- develop methods, procedures and tests to identify the harmful contaminants in complex industrial wastestreams;
- sample and analyze the wastestreams to determine their hazardous characteristics and the seriousness of their hazard; and
- analyze current disposal techniques, their costs and environmental effects, and disposal capacity problems.

Development of an industry-specific knowledge bank will provide the basis for identification of additional wastestreams for listing under Section 3001, particularly toxic organics and highly hazardous wastes such as explosives; issuance of Best Egineering Judgment permits; and revision of Best Engineering Judgment standards.

EPA will complete development and validation of test protocols for additional waste characteristics, such as low-level radioactivity, infectiousness, phytotoxicity, and mutagenicity and teratogenicity, and continue to develop proper analytical tools and methodologies.

Industry and waste-specific technical guidance materials will be issued to assist State and regional permit writers. Based on a study of recovery technology and amenable wastestreams, an assessment of how to support development of viable industrial waste recovery processes will be conducted.

Development of mechanisms for assuring adequate post-closure financial responsibility for hazardous waste facilities will be completed.

The changing American energy supply plan adds a component to the 1981 hazardous waste program. Synthetic fuel technologies have the potential to create large volumes of potentially harmful wastes. In 1981, EPA will issue preliminary guidance documents to advise the growing synfuels industry on appropriate facility designs and management procedures and will develop regulations for wastes such as retorted shale, coal gasification ash and spent catalysts from coal gasification and oil shale processing.

Headquarters will also provide national policy and pocedural guidance on State authorization issues, hazardous waste program administration, and evaluation of permits.

REGULATIONS, GUIDELINES, POLICIES/SOLID WASTE

1979 Accomplishments

The Agency promulgated criteria for classification of sanitary landfills under Section 4004 of RCRA and guidelines for the development and implementation of State solid waste management plans under Section 4002. The criteria specify conditions that must be met regarding floodplains, surface water, ground water, application to land producing food-chain crops, disease, air quality, and safety. The regulation also establishes a definition of open dumping as required in Section 1008 of RCRA and serves as a partial guideline under Section 405 of the Clean Water Act for disposal and utilization of waste water treatment plant sludge. A manual was developed for States' use in classifying solid waste disposal facilities according to the Section 4004 criteria for the Open Dump Inventory.

Landfill design and operation guidelines (Section 1008) were proposed and studies were initiated of the agricultural chemicals, pulp and paper, textiles and food processing industries to support future development of Section 1008 guidelines to control nonhazardous industrial waste disposal.

The comprehensive sludge study required by Section 8002 was forwarded to Congress.

1980 Program

In 1980, the Agency has allocated a total of $2,028,800 to this program, of which $828,800 is for Salaries and Expenses and $1,200,000 is for extramural purposes under the Abatement, Control and Compliance appropriaton.

Suits have already been filed requiring EPA's defense of both the landfill criteria of Section 4004 and the State planning guidelines of Section 4002. In combination with the criteria, publication of the Site Classification Manual and a program of assistance and training sessions for the States will constitute the base of Federal policy and technical guidance in 1980 to support States' initiation of the Open Dump Inventory. National management of the States' preparations for conduct of the inventory process will also be provided. The initial installment of the inventory is scheduled for late 1980 publication.

Headquarters advice and oversight of the regions and States in 1980 will ensure development of comprehensive state solid waste management plans before the target date of January 31, 1981.

Work will continue on development of additional guidelines under Section 405 of the Clean Water Act on municipal waste water treatment sludge disposal and utilization. Guidelines for the giveaway or sale of processed sludge will be proposed. Section 1008 guidelines for landfill disposal will be issued. Studies will continue on ground water monitoring, landfill, landspreading and surface impoundment design and operation to support development of Section 1008 guidelines and refinement of technical guidance for the states and regions on solid waste disposal. EPA will co-sponsor with FAA and the Fish and Wildlife Service a comprehensive study of means to diminish dangers to aviation from birds congregating at landfills in the vicinity of airports.

1980 Explanation of Changes from Budget Estimate

The net increase of $223,800 results from several actions. An increase of $31,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $14,400 to this activity.

A reprogramming of $206,500 was made within the solid waste media from regulations, guidelines and policies/hazardous waste ($47,700); regulations, guidelines and policies/resource conservation and recovery ($116,100); and solid waste technical assistance ($42,700), to cover the remaining amount needed for the inventory support contract.

1981 Plan

Resources required for this program element are $1,340,000 and 13 permanent workyears, of which $740,000 is for Salaries and Expenses and $600,000 is for Abatement, Control and Compliance. In 1981, the headquarters program will continue to concentrate on national management of the Open Dump Inventory, development of remaining sludge management guidelines, and guidance on technical and policy issues of State solid waste management planning and implementation.

Given the broad scope of the State solid waste mangement plans and the number of State agencies and organizations to be involved, EPA expects to continue to provide guidance on implementation as States' plans begin to phase-in during 1981.

Section 1008 guidelines will be prepared on preferred designs and methods of operation of surface impoundments and landspreading. These, along with Section 1008 guidelines to be developed for land disposal of wastes from selected industries, such as pulp and paper and food processing, will provide technical guidance for compliance with State solid waste regulatory programs.

Additional comprehensive guidelines under Section 405 of the Clean Water Act, addressing sludge incineration, energy recovery, landfilling, landspreading, and disposal of sludge in surface impoundments, will be proposed in 1981. This will satisfy provisions of the Clean Water Act and RCRA for regulations on disposal and utilization of municipal sludge.

REGULATIONS, GUIDELINES, POLICIES/RESOURCE RECOVERY

1979 Accomplishments

In 1979, extramural efforts provided for economic, technical and environmental evaluations of state-of-the-art resource recovery systems, and a study to support Section 6002 Federal procurement guidelines for highway construction products containing recycled materials.

In July, the Resource Conservation Committee submitted its final report to Congress and the President containing its findings and recommendations in ten areas of existing or potential Federal resource conservation policy. They included: Federal tax subsidies for virgin materials; Federal extraction taxes on virgin materials; subsidies for resource recovery; railroad freight rate discrimination; product regulations; beverage container deposits; bounties on durable and hazardous consumer goods; national litter tax; local user fees; and a national solid waste disposal tax.

The Agency managed a competitive process to select 66 communities to share in $15 million in grants under the President's Urban Policy Program for local resource recovery system planning.

Detailed reports were issued on the design and operation of the San Diego County Resource Recovery Facility and the Landgard pyrolysis project in Baltimore. Evaluations of European waterwall combustion systems and on small modular incinerators with heat recovery were completed.

In 1979, a Memorandum of Understanding was completed delineating responsibilities between EPA, for planning and development, and the Department of Energy, for design and construction of municipal waste resource recovery systems. EPA initiated development of a 5-year plan for Federal resource conservation activities.

1980 Program

The current estimate for this program is 9 permanent workyears and $625,000, of which $295,000 is for Salaries and Expenses and $330,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

Follow-up funding of $10 million will be provided for the 66 urban grantees of the President's Urban Policy Program to move into the second phase of their planning for projects to convert municipal solid waste to useable energy and materials. A contract to provide a model to assist EPA and grantees in technical project management will be continued and three workshops to train grantees in the model's use will take place. Headquarters will provide national oversight of regional management of the grants and evaluate the grantees' use of funds in the first phase.

The first three Federal procurement guidelines are scheduled for proposal in 1980, for fly ash as a cement supplement, recycled paper products and composted sewage sludge as a soil conditioner or fertilizer. Development will begin of future Section 6002 guidelines on procurement of recycled construction materials.

In 1980, eight comprehensive evaluations will begin on several resource recovery system components, such as air classifiers, and on commercial-scale facilities, such as the Andco-Torrax pyrolysis plant in Frankfurt, Germany. The evaluations of the technological, operational, economic, environmental and institutional aspects of performance of resource recovery systems expand the knowledge base available to local decision-makers. Intended for publication in 1980 are evaluations of refuse-fired energy systems in Europe and small modular incinerators with heat recovery.

Resource recovery seminars and an updated Resource Recovery Implementation Guide continue to supply information to support technology transfer among State and local public administrators.

The interagency 5-year plan for Federal resources conservation and recovery programs to help systemize long-term planning will be completed.

60-531 O - 80 - 50

1980 Explanation of Changes from Budget Estimate

The net decrease of $110,000 results from several actions. An increase of $11,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $5,100 to this activity.

A reprogramming of $116,100 was made within the solid waste media to solid waste regulations, guidelines and policies to support a contract for inventory support.

1981 Plan

The Agency requests $946,000 for this program element, of which $635,000 is for the Salaries and Expenses Appropriation and $311,000 is for the Abatement, Control and Compliance appropriation.

Headquarters will maintain its oversight of ongoing regional management of the Presidents' Urban Policy grant program to assist selected local governments complete their feasibility studies, procurement and pre-implementation activities for resource conservation and recovery projects. This includes providing assistance to the regions in refining project work plans for the final phase and evaluating the progress of second phase projects.

Section 6002 procurement guidelines will be developed for recycled construction materials and for insulation products using recovered materials. Previously proposed guidelines will be finalized.

Evaluation will be continued on selected resource recovery systems and reports issued on the design and performance of state-of-the-art and commerical technologies, particularly in regard to small-scale usage. This activity will form a contribution to the ongoing recovery seminars organized by EPA to aid decision-makers and expand resource recovery.

REGULATIONS, GUIDELINES, POLICIES/EIS PREPARATION

1979 Accomplishments

In 1979, contract studies continued on the environmental impacts of the landfill criteria, sludge guidelines, Section 1008 landfill guidelines, and the set of seven Subtitle C regulations. Contract studies were also continued to determine the overall economic impact of the hazardous waste regulations and sludge disposal guidelines and impact of the Subtitle C regulations on selected industrial sectors.

1980 Program

No resources are requested.

1981 Plan

No resources are requested.

LOVE CANAL

1979 Accomplishments

Congress appropriated $4 million to the Agency for a grant to the State of New York for a clean-up demonstration project at the Love Canal. In conjunction with EPA's award of the grant immediate efforts to contain and clean up the Love Canal site, such as dispatch of EPA's mobile waste water treatment unit and covering the site, were initiated.

The 1979 funds appropriated by Congress are being used for the following activities in order to prevent further endangerment to public health in the area and to return the site to an environmentally safe condition:

- assess the extent of aquifer contamination due to leechate migration and evaluate its environmental impact;
- construct containment and leachate collection systems around the site;
- design, construct and operate a permanent treatment and disposal system for intercepted leachate;
- perform epidemiological studies of area residents;
- analyze possible site effectiveness of remedial measures and plan additional remedial activities.

1980 Program

No resources are requested for this program element. The congressional add-on was provided for 1979 only. Remedial, rehabilitation, monitoring and evaluation work under the grant agreement will continue, however, in 1980 and beyond.

1981 Plan

No resources are requested.

SOLID WASTE

Financial Assistance

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs 1980
			(dollars in thousands)		
Appropriation					
Hazardous Waste Management Financial Assistance to States:					
Abatement, Control and Compliance	$14,501	$18,600	$18,600	$30,000	+$11,400
Solid Waste Management Financial Assistance to States:					
Abatement, Control and Compliance	11,138	10,000	10,000	8,000	-2,000
Resource Recovery Local Financial Assistance:					
Abatement, Control and Compliance	6,551	13,950	10,000	10,000	-
Total Salaries and Expenses Abatement, Control and Compliance	32,190	42,550	38,600	48,000	+9,400
Grand Total	32,190	42,550	38,600	48,000	+9,400
Permanent Positions	...	...	...	...	...
Full-time Equivalency	...	...	...	...	...

Budget Request

The Agency request for this budget subactivity is $48,000,000 for the Abatement, Control and Compliance appropriation, an increase of $9,400,000 from 1980. This reflects a decrease of $2,000,000 for solid waste management grants to States, due to the 5-year phase out of Federal financial assistance under Subtitle D of RCRA. An increase of $11,400,000 is requested for hazardous waste management grants to States for Subtitle C implementation.

Program Description

This subactivity provides financial assistance to State governments for developing and implementing hazardous and non-hazardous waste management programs under Subtitles C and D of RCRA. Financial assistance is also provided to local government for resource and energy recovery projects. The following program elements comprise this subactivity.

Hazardous Waste Management Financial Assistance -- This program element provides financial assistance to States in developing, implementing and enforcing programs to control the storage, treatment, transportation and disposal of hazardous wastes. States programs must be capable of receiving authorization under Subtitle C of RCRA. Grants are awarded on a formula basis which takes into account a State's population, land area, number of hazardous waste generators and amount of hazardous waste.

Solid Waste Management Financial Assistance to States -- This program element provides grants to State solid waste management agencies under Subtitle D of RCRA. Grants are awarded on a basis of State population. These grants support States in pursuing their responsibilities under RCRA to conduct an inventory of all solid waste disposal sites, complete solid waste management plans, and implement State regulatory programs for the management of non-hazardous waste.

Local Resource Recovery Financial Assistance -- This program element provides grants as part of the President's Urban Policy Program for feasibility studies and other project development activities leading to the implementation of resource and energy recovery systems.

HAZARDOUS WASTE MANAGEMENT FINANCIAL ASSISTANCE

1979 Accomplishments

Grants totalling $14,500,500 were awarded in 1979. Financial assistance was given to all States which showed a good faith effort in developing and implementing a hazardous waste management program substantially equivalent to the Federal hazardous waste program. EPA interprets this to mean that the State program would need to cover substantially the same wastes and activities (generation, transportation, treatment, storage and disposal) as the Federal program, and that the requirements should provide substantially the same level of protection to human health and the environment.

The States' primary activity in 1979 was to draft enabling legislation and regulations which would establish the authority and capability for operating substantially equivalent programs. The problem of Love Canal, along with several other well publicized incidents, had a marked effect on prompting many States to take action on hazardous waste management. Specifically, in 1979, several States enacted legislation and have or are in the process of promulgating regulations for hazardous waste management. States also began to hire and train staff, who would serve as the infrastructure required for an operational hazardous waste management program.

The following are examples of specific actions taken by States to begin meeting the requirements of a substantially equivalent program.

- Assistance was given for disposal of hazardous wastes on a case-by-case basis.
- Public participation and information functions were developed.
- Regulations and guidelines were developed for all aspects of hazardous waste management including generation, storage, treatment, transport and disposal and for authorization of State programs.
- A management information system was developed for tracking compliance with the manifest.

1980 Program

The total current estimate for this program is $18,600,000 for Abatement, Control and Compliance. This will allow States to continue developing hazardous waste management

programs. In early 1980, EPA will provide advanced guidance to enable States to develop such programs as soon as possible.

In late 1980, States will be able to receive interim authorization. This will allow States to operate programs that provide substantially the same degree of protection as the Federal program, during the period they are developing programs capable of receiving final authorization.

Interim authorization will occur in two phases. This will enable States to continue preparation of necessary legislation and regulations prior to promulgation of the entire Federal Subtitle C regulatory program. Phase I will cover generator and transporter requirements and preliminary facility standards. Phase II will cover permitting of hazardous waste treatment, storage and disposal facilities. States may receive interim authorization beginning six months after the promulgation of the Section 3001 regulations. States may receive interim authorization for Phase II after the Section 3004 technical standards are promulgated. Interim authorization for both parts extends for 24 months beyond the earliest date Phase II begins. During this period, States will upgrade their programs to qualify for final authorization. States are expected to seek authorization for both phases.

In general, in order to receive interim authorization for either phase a State program should have:

- legislative authority adequate for the State to carry out its responsibility for that phase;
- regulations in effect necessary to implement the requirements of that phase;
- control over a substantial majority of hazardous wastes generated, transported, treated, stored and disposed of in the State;
- capacity to inspect, monitor, and require recordkeeping, reporting and monitoring in order to determine compliance with the requirements of that phase;
- enforcement capabilities that are adequate to ensure compliance with the requirements of that phase; and
- adequate resources to administer and enforce the requirements of that phase.

For those States unwilling or unable to obtain authorization, EPA is required to operate a Federal program. At the discretion of the Administrator, unobligated grant funds remaining after negotiation with the States in a Region, and funds for which no grant application has been received, may be used to meet the costs of a required Federal program in any State not applying for, or which has been denied interim or final authorization.

1980 Explanation for Changes from Budget Estimate

There was no change.

1981 Plan

EPA requests a total of $30,000,000 under this program for Abatement, Control and Compliance. This reflects an increase of $11,400,000 over the 1980 level.

In 1981, the interim authorization period will still be in effect. States will continue to receive financial assistance for their efforts toward developing and implementing hazardous waste management programs. States that are ineligible for authorization in 1981 can still be funded to develop a program eligible for future

authorization. For these States to receive interim authorization, however, EPA will require a plan describing the additions and modifications that will be made in order to qualify for final authorization before the end of the interim authorization period.

Only those States totally divorcing themselves from the program will not qualify for grant funds. EPA will continue to use unobligated funds to operate Federal programs for these unauthorized States.

SOLID WASTE MANAGEMENT GRANTS TO STATES

1979 Accomplishments

Grants totalling $11,138,300 were awarded in 1979. The 1979 congressional add-on of $4 million was not obligated in 1979, but will be used by the States in 1980. In 1979, States continued to develop comprehensive solid waste management plans which would meet the six requirements under Section 4003 of RCRA. The States also continued drafting and supporting passage of legislation and implementing regulations to provide an adequate regulatory base to assume their responsibilities under RCRA concerning non-hazardous waste. This includes regulations governing new municipal and industrial waste disposal sites; right-of-entry for on-site industrial waste disposal; site monitoring and inspection requirements; compliance scheduling; removal of long-term contract prohibitions; and administrative and judicial enforcement mechanisms.

States also continued to gather background information on the location, ownership and other pertinent data of solid waste disposal sites. The development of appeal and other administrative procedures was also initiated in 1979. These pre-inventory activities are pertinent and necessary in order to effectively initiate the inventory program. They will enable the States to develop a good data base identifying all of the facilities within their jurisdiction and the facilities needing to be evaluated each year.

1980 Program

The total current estimate for this program is $10,000,000 in new obligation authority for Abatement, Control and Compliance. An additional $4 million will be available in 1979 carryover funds. EPA will continue to encourage the development and implementation of strong State programs to oversee and regulate non-hazardous waste. Since the enactment of RCRA, many States have appreciably strengthened their capacity to assume such responsibilities under the Act.

EPA will work with the States to develop a long-term financial base resting on user charges. Therefore, beginning in 1980, Federal financial assistance will be phased-out over a 5-year period. This will require that States use grant funds during 1980 through 1984 for only the highest priorities under Subtitle D of RCRA -- completion of an inventory of all solid waste disposal sites to determine whether they should be classified as open dumps (and therefore be closed or upgraded) or as sanitary landfills; completion of a comprehensive State solid waste management plan; and development and implementation of State regulatory programs for the management of all non-hazardous waste.

In 1980, the inventory of solid waste disposal sites will be given highest priority. Since such an inventory is very resource intensive, a majority of the grant funds will be used for this purpose. EPA will insure that at least 60 to 75 percent of the 1980 allotments to each State is used for this purpose. The remaining funds should support the other high priority activities.

1980 Explanation for Changes from Budget Estimate

There was no change.

1981 Plan

EPA requests a total of $8,000,000 under this program for Abatement, Control and Compliance. This reflects a decrease of $2,000,000 over the 1980 level, due to the 5-year phase out of Federal financial assistance under Subtitle D of RCRA.

In 1981, States will continue to conduct the inventory of solid waste disposal sites, and have an on-going program to classify such sites. There should also be a marked increase in the number of States completing comprehensive solid waste management plans, and passing legislation and implementing regulations covering non-hazardous waste. EPA will also continue to work with the States in developing user-charges as a means of financing activities within their solid waste management program.

LOCAL RESOURCE RECOVERY FINANCIAL ASSISTANCE

1979 Accomplishments

Grants totalling $6,550,900 were awarded in 1979. EPA selected 68 local governments from 205 applicants for award under the President's Urban Policy grant program, for feasibility studies and other project development activities leading to implementation of resource and energy recovery systems. The program's major initiatives are to overcome one of the major barriers to resource recovery implementation -- inadequate funding for planning activities -- and have a positive economic and labor impact on urban areas.

The 63 projects finally awarded represent nearly 10 percent of the U.S. municipal solid waste stream. They also represent a total potential construction cost of over $4 billion and will provide more than 2,000 jobs. Fifty-six (56) are directly related to energy recovery. The remaining seven are related to source separation activities.

In 1979, EPA began assisting applicants in developing comprehensive workscopes, closely monitored their progress in initiating activities, and provided grantees with in-house and contractor support as problems arose. Thus, with both financial and technical assistance, the rate of resource recovery project implementation will be accelerated by avoiding delays caused by decision-making errors and inadequate information, and by enabling those communities with limited funds and high potential for success to investigate the feasibility of resource recovery.

1980 Program

The total current estimate for this program is $10,000,000 for Abatement, Control and Compliance. EPA will continue to provide grant funding to those communities selected in 1979. The selected communities may use the funds to perform any of the following type activities necessary to successfully implement a resource or energy recovery system: waste stream and market surveys; financial analyses; selection of procurement, technology and financing options; analysis and design of necessary ordinances or legislation; site selection; public participation; preparation and evaluation of bids; and finalizing contracts for systems, markets and waste supply.

In 1980, EPA will continue to monitor the progress of grantees. Along with providing additional grant funds, EPA will use a portion of the funds for contractor assistance on technical management of the grants and on evaluating the overall program.

1980 Explanation for Changes from Budget Estimate

The Congress reduced the Agency's request by $3,950,000.

1981 Plan

EPA requests a total of $10,000,000 under this program for Abatement, Control and Compliance. This represents the same amount as in 1980. In 1981, EPA will provide additional funds to grantees, enabling them to complete their final program phases.

SOLID WASTE

Waste Management Strategies Implementation

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs 1980
			(dollars in thousands)		
Appropriation					
Hazardous Waste Mgmt Regulatory Strategy Implementation:					
Salaries and Expenses...	$1,373	$2,443	$2,369	$9,052	+$6,683
Abatement, Control and Compliance	96	...	100	3,018	+ 2,918
Solid Waste Management Program Implementation:					
Salaries and Expenses...	993	1,109	1,256	1,078	178
Abatement, Control and Compliance ...	10	...	15	15	...
Total:					
Salaries and Expenses...	2,366	3,552	3,625	10,130	+6,505
Abatement, Control and Compliance	106	...	115	3,033	+2,918
Grand Total.....	2,472	3,552	3,740	13,163	+9,423
Permanent Positions					
Hazardous Waste Management Regulatory Strategies.....	58	89	81	227	+ 146
Solid Waste Program	37	40	41	35	- 6
Total	95	129	122	262	+ 140
Full Time Equivalency					
Hazardous Waste Regulatory Strategy.....	56	88	86	275	+ 189
Solid Waste Management Program Implementation....	36	43	45	38	- 7
Total.....	92	131	131	313	+ 182

Budget Request

The resources requested for this budget subactivity are $13,163,800 and 262 permanent workyears. This includes a total of $10,130,000 for Salaries and Expenses and $3,033,000 for Abatement, Control and Compliance, with an increase of $6,505,000 and $2,918,000, respectively. This also includes an increase of 140 positions. The increase provides for regional implementation of a hazardous waste management system in unauthorized States; issuance of permits to hazardous waste treatment, storage and disposal facilities in unauthorized States using "Best Engineering Judgement" standards; and technical support and oversight of authorized States.

Program Description

The objectives of the regional office solid waste management program are to implement regulations, guidelines and polices as required under Subtitles C and D of RCRA; and to develop regional, State and local programs for resource conservation and recovery. The following program elements comprise this subactivity:

Hazardous Waste Management -- This program element includes activities that will increase the ability of States to receive authorization for implementing hazardous waste management programs under Subtitle C of RCRA. RCRA mandates EPA to authorize States that develop and implement hazardous waste management programs substantially equivalent to the Federal hazardous waste program. The EPA regions will work closely with States to develop programs that meet all the federally mandated requirements. For States unwilling or unable to obtain authorization, EPA will operate a Federal program.

Solid Waste Implementation -- This program element includes activities that will increase the ability of States to implement solid waste management programs under Subtitle D of RCRA. The EPA regions will be responsible for managing the RCRA mandated solid waste disposal site inventory. The EPA regions will also provide assistance to States in developing comprehensive solid waste management plans, and in developing and implementing non-hazarous waste regulatory programs. Management of local resources recovery grants under the President's Urban Policy program is also provided.

HAZARDOUS WASTE MANAGEMENT

1979 Acomplishments

In 1979, obligations totalled $1,468,900; the regions' major activity was in assisting and monitoring the development of State legislation, regulations and other requirements necessary to qualify for Federal authorization (interim and final). The regions also began strengthening their capabilities to implement a Subtitle C hazardous waste management program in States unwilling or unable to obtain Federal authorization.

The second highest priority during 1979 was responding to hazardous waste emergencies and imminent hazards. Specifically, the regions analyzed suspect situations, conducted technical evaluations to determine the extent of damage, and provided recommendations for cleanup and disposal as needed. The regions cooperated with the Office of Enforcement, which determined appropriate legal actions to take in response to such emergencies. (This activity will be covered in the "Uncontrolled Hazardous Waste Sites" subactivity in 1980 and beyond).

1980 Program

The total current estimate for this program is 81 permanent workyears and $2,469,100, of which $2,369,100 is for Salaries and Expenses and $100,000 is for Abatement, Control and Compliance.

In 1980, the EPA regions will continue to work closely with the States in developing and strengthening their hazardous waste management programs to qualify for interim authorization. This will include helping States to establish a base program that is substantially equivalent to the Federal hazardous waste program, and to develop the application packages required for interim authorization.

The regions will also continue strengthening their own capability to implement hazardous waste programs in unauthorized States. This is especially critical with regard to permitting of hazardous waste facilities. Since EPA does not have the knowledge base to promulgate national design standards for disposal facilities, EPA will be required to issue permits based on "Best Engineering Judgement". This will require technical evaluation of permits on almost a case-by-case basis, significantly increasing the regional workload. In order to initiate a credible permitting program immediately after promulgation of Subtitle C, EPA regions will need to begin hiring and training a permit evaluation staff in 1980 to assume this responsibility.

EPA will initiate the Subtitle C implementation process in mid-1980, by mailing out notification forms to individuals and firms believed to be involved in hazardous waste management activities. EPA regions will be responsible for receiving and processing these forms in late 1980, as well as issuing notices of interim permit status to all notifiers.

1980 Explanation of Changes from Budget Estimate

The net increase of $26,200 results from several actions. An increase of $87,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $12,100 and $2,600, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $210,300 to this activity.

Regional reprogrammings were made to cover projected costs based on 1979 expenditures and resulted in a reprogramming within the solid waste media of $193,800 to other activities; $11,200 to the air media; $12,500 to the water quality media; $9,500 from drinking water activities; $18,200 to the noise media; and $30,400 to the toxic substance media.

1981 Plan

EPA requests a total of 227 permanent workyears and $12,069,900, of which $9,051,500 is for Salaries and Expenses and $3,018,400 is for Abatement, Control and Compliance. This reflects an increase of 146 positions and $9,600,800 over the 1980 level.

In 1981, EPA regions will begin the interim authorization process. This will include reviewing State authorization packages prior to authorization to ensure all

mandatory requirements for a substantially equivalent hazardous waste program are met. As final determinations of approval are made, Memoranda of Agreement (MOA) will be negotiated with each State by the regions.

The regions will also oversee these States while they continue to work toward qualifying for final authorization. Regional oversight activities will include monitoring States' program authorization status; ensuring compliance with the interim standards; reviewing State progress reports; and identifying and resolving problem areas that arise during implementation. The State permitting process will be monitored, including reviewing 10 percent of State issued facility permits and conducting site inspections of 10 percent of State facilities.

The implementation of hazardous waste management programs in unauthorized States will begin in 1981. Regional responsibilities will include answering questions and resolving problems of generators, transporters, and facilities concerning the Subtitle C regulations; installing data processing and analysis systems to receive and analyze annual reports from facilities; and closely monitoring compliance with the manifest system's reporting requirements and interim permit standards. This information will help EPA identify implementation problems and set priorities for permitting.

In 1981, the Agency and States will inaugurate a 6-year program to permit an estimated 30,000 hazardous waste treatment, storage and disposal facilities nationwide. The increase requested for 1981 will provide resources for the EPA regions to begin the permit issuance process using "Best Engineering Judgement" (BEJ) standards. States and EPA regional offices will issue, on almost a case-by-case basis, best engineering judgement permits against performance standards under Section 3004. The BEJ regulatory approach will require individual technical evaluations and will increase the number of formal public hearings for permits. The resources under this program element will be used to conduct the detailed technical review of the permit applications, while resources requested under hazardous wastes enforcement will provide legal review, administrative support and analysis of routine technical problems.

The $3,018,400 in extramural resources requested will fund contractors to provide technical support in evaluating permit applications. The resources requested under this program and the enforcement program will enable EPA to isssue the estimated 7500 permits in unauthorized States over a 6-year period. If fewer States accept the program, additional EPA resources may be required or the length of the permit period will increase. In addition, as BEJ standards are refined and national design standards developed, initial BEJ permits may need to be revised, requiring additional EPA resources.

SOLID WASTE MANAGEMENT

1979 Accomplishments

In 1979, the regions assisted States in assuming their responsibilities under Subtitle D of RCRA. Specifically, the regions received and commented on State comprehensive solid waste management plans. Assistance was also provided in preparing for the RCRA mandated inventory of land disposal sites. This involved assessing State legislative bases and examining State regulations against the Federal landfill criteria, reviewing the necessary appeal and other administrative procedures, and recommending areas where further State action was needed before conducting the inventory.

The regions also began administering and managing the 63 Urban Policy resource recovery grants within their jurisdictions by helping grantees in refining their workscopes.

1980 Program

The current estimate for this program element is 41 permanent workyears and $1,271,300 of which $1,256,300 is for Salaries and Expenses and $15,000 is for Abatement, Control and Compliance.

In 1980, the regions will negotiate, award, and oversee State Subtitle D grants. A primary reponsibility will be to ensure funds are directed to only the highest priority activities. The regions will need to be certain that States direct at least 60 to 75 percent of their allotment to the land disposal site inventory. Regions will manage the inventory process beginning in 1980.

Regional assistance will be provided as States begin developing and implementing regulatory powers for disposal of non-hazardous waste. This will involve assessing regulatory needs and providing support and advice in drafting legislation. Regional oversight will also be provided as States begin establishing resource conservation and recovery programs.

The initiation of State/EPA agreements under RCRA, the Clean Water Act and the Safe Drinking Water Act will begin in 1980. EPA personnel under this program element will support this process by planning, implementing and managing the agreements as they relate to solid waste. This will provide an intergrated and consistent approach to solving pollution problems covered under the above programs. The regions will be involved in negotiating agreements with the States, coordinating them with other EPA and State programs, and monitoring them after approval.

The President's Urban Policy Program of local resource recovery grants will continue to be managed by the regions.

1980 Explanation of Changes from Budget Estimate

The net increase of $162,600 results from several actions. An increase of $48,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $8,600 and $600, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $42,100 to this activity.

Regional reprogrammings were made to cover projected costs based on 1979 expenditures and resulted in a reprogramming of $73,500 within the solid waste media from other activities; $4,500 from the drinking water media; and $3,300 from the water quality media.

1981 Plan

EPA requests a total of 35 permanent workyears and $1,093,100, of which $1,078,100 is for the Salaries and Expenses appropriation and $15,000 is for the Abatement, Control and Compliance appropriation. This reflects a decrease of 6 permanent workyears and $178,200 from the 1980 level.

In conjunction with EPA's phase-out of Federal financial assistance under Subtitle D of RCRA, the regions will concentrate primarily on helping States work toward implementing adequate and self supporting programs covering non-hazardous waste. This will involve helping States complete solid waste management plans, and pass legislation and implementing regulations. A large part of this effort will require the regions to negotiate and monitor State/EPA agreements, in order to ensure the programs are properly implemented. The regions will also work with States in developing user charges as a means of financing solid-waste management programs when Federal funds are no longer available.

Regional management of the land disposal site inventory will continue during 1981. The information gathered will be forwarded to headquarters for additional installment in the published inventory.

The regions will continue to manage and provide support under the President's Urban Policy Program, as grantees move toward completing feasibility studies of resource and energy recovery systems for their communities.

SOLID WASTE

Technical Assistance

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Technical Information Development:					
Salaries and Expenses..	$899	$1,065	$968	$1,094	+$126
Abatement, Control and Compliance.....	593	...	780	600	-180
Solid Waste Technical Assistance Delivery/ Headquarters:					
Salaries and Expenses..	396	2,967	121	120	-1
Abatement, Control and Compliance.....	2,449	...	3,139	4,494	+1,355
Solid Waste Technical Assistance Delivery/ Regions:					
Salaries and Expenses..	572	517	514	386	-128
Abatement, Control and Compliance.....	...	...	...	-	-
Total:					
Salaries and Expenses..	1,867	4,549	1,604	1,600	-4
Abatement, Control and Compliance.....	3,042	...	3,919	5,094	+1,175
Grand Total.....	4,909	4,549	5,523	6,694	+1,171
Permanent Positions					
Technical Information Development.....	13	9	10	10	-
Solid Waste Technical Assistance Delivery/ Headquarters.....	12	10	3	3	-
Solid Waste Technical Assistance Delivery/ Regions.....	22	18	19	13	-6
Total.....	47	37	32	26	-6

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Full-time Equivalency					
Technical Information Development	22	17	17	16	-1
Solid Waste Technical Assistance Delivery/Headquarters	14	10	4	4	...
Solid Waste Technical Assistance Delivery/Regions	23	19	20	15	-5
Total	59	46	41	35	-6

Budget Request

The resources requested for this budget subactivity are $6,693,800 and 26 permanent workyears. This includes a total of $1,600,000 for the Salaries and Expenses appropriation and $5,093,800 for the Abatement, Control and Compliance appropriation, with a decrease of $4,000 and an increase of $1,175,000, respectively. The amount requested in this budget would provide technical assistance funds of $5 million rather than 20% percent of the RCRA request. An appropriation language change has been submitted for this change.

Program Description

Funding under the subactivity enables EPA to provide States and local governments with a comprehensive technical assistance program on solid and hazardous waste management and resource conservation and recovery. EPA is also able to manage a participatory public education and information program, as well as develop and provide technical information concerning RCRA regulations, guidelines and programs. Section 2006(b) of RCRA mandates EPA to establish Technical Assistance Panels for the purpose of providing technical assistance to States, local governments, and Federal agencies upon request. These panels consist of experts from EPA, State and local officials (under the peer matching program), consultants under contract to EPA, or any other individuals serving voluntarily. Peer matching uses officials from one community to help another community solve a problem with which they have had similar experience.

The management of the Technical Assistance Panels program and implementation of a RCRA orientation training program are also included. The following program elements comprise this subactivity.

Technical Information Development -- This program element includes the management of hearings, meetings and other public participation activities necessary in the development of all regulations, guidelines and programs under RCRA. Management of RCRA orientation training courses for new Federal and State employees will be provided. EPA's management of a participatory public education and information program on solid waste management issues, and preparation, publication and dissemination of reports to Congress and the President and other publications are also included.

Technical Assistance - Regional Offices -- This program element includes regional management of the Technical Assistance Panels program for States and local governments and delivery of technical assistance by regional personnel.

Technical Assistance - Headquarters -- This program element includes national program management by EPA headquarters in establishing regional level-of-effort contracts for technical assistance and in managing an evaluation reporting system of the technical assistance provided. Management and monitoring of peer matching technical assistance grants is also included.

60-531 O - 80 - 51

TECHNICAL INFORMATION DEVELOPMENT

1979 Accomplishments

In 1979, extramural expenditures under this program element included a congressional add-on of $100,000 for an academic training program. Four universities were awarded grants under this program to develop and teach innovative model courses on hazardous waste management.

EPA published Final Regulations on Public Participation in Programs under the Resource Conservation and Recovery Act (RCRA), Clean Water Act (CWA), and Safe Drinking Water Act (SDWA). These regulations replaced the Interim Guidelines for Public Participation in Solid Waste Management. Thirteen (13) public hearings and six public meetings were held in 1979 on proposed RCRA regulations, guidelines and programs under development.

The 4-year public education program on RCRA implementation, Waste Alert!, was successfully begun 1979. Citizen fear of hazardous waste sites is the basis of opposition to new hazardous waste facility siting and has become a major problem of waste management. This program has begun to enhance public understanding of the various components of the problem, and create support for regulatory programs to deal with hazardous and solid waste siting, disposal and recovery. Five citizen education grants were awarded in 1979, and these grantees developed, organized and managed four regional Waste Alert! conferences.

In response to approximately 17,000 requests from the public, over 790,000 technical and public information documents were distributed. EPA prepared and published 254 new information projects, including reports to Congress and the President, journal articles, news releases, technical reports and graphic presentations. The Agency also completed development of an orientation training workshop for new Federal and State employees involved in all aspects of solid waste management.

1980 Program

The total current estimate for this program element is 10 permanent workyears and $1,748,400, of which $968,400 is for Salaries and Expenses and $780,000 is for Abatement, Control and Compliance. In 1980, EPA will continue to manage public participation activities, providing an open process of government and promoting public awareness and comment in the course of making decisions on RCRA programs. This will include 10 public hearings and meetings on RCRA regulations, guidelines and programs in 1980.

The 4-year public education program, Waste Alert!, will enter its second year. The initial two years are focusing on identifying and educating citizen leaders, developing proposals for implementing public participation under RCRA at the State level, planning for State Waste Alert! conferences, and identifying State action groups for participation in such conferences. Six additional regional conferences will be held in 1980.

The orientation training workshop, aimed at enhancing the ability of new Federal and State employees to assume their responsibilities under RCRA, will be scheduled.

The preparation, publication and distribution of information materials will continue, particularly as implementation of the Subtitle C program begins. EPA plans to distribute an additional 800,000 copies of technical and public information documents to the public. Approximately 250 new solid waste information projects will be prepared and published during the year.

1980 Explanation of Changes from Budget Estimate

The net increase of $683,800 results from several actions. An increase of $18,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional increase of $1.5 million to academic training resulted in an increase of $90,000 to this activity. An overall reprogrammingthrougnout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $8,200 to this activity.

A reprogramming of $183,900 was made within the solid waste media, from hazardous waste regulations, guidelines and policies, to cover projected costs as based on 1979 expeditures. A reprogramming of $400,000 was made within the solid waste media, from hazardous waste regulations, guidelines and policies to fund the Waste Alert! program, a citizen education program for hazardous waste.

1981 Plan

EPA requests a total of 10 permanent workyears and $1,693,800 under this program element, of which $1,093,800 is for the Salaries and Expenses appropriation and $600,000 is for the Abatement, Control and Compliance appropriation. This reflects a decrease of $54,600 from the 1980 level.

Public participation in RCRA programs will continue in 1981, including public hearings and meetings on all regulations, guidelines and programs. Management of the orientation training workshops will continue to be provided, including the periodic updating of course material such as training manuals.

The public education program, Waste Alert!, will continue into its third year. Waste Alert! conferees will begin forming coalitions and serve as a corps to help citizens at the local level understand solid waste management projects and issues, such as landfill siting, resource recovery and the problems of abandoned waste sites. Citizens in all 50 States will ultimately be involved in shaping national, State and local programs and policies concerning waste management.

The preparation, publication and distribution of information documents and reports is expected to continue at the 1980 level of output.

TECHNICAL ASSISTANCE DELIVERY - REGIONAL OFFICES

1979 Accomplishments

In 1979, obligations totalled $571,700. EPA regions continued operation of the Technical Assistance Panels program, in order to meet the RCRA mandate of providing State and local governments within their jurisdictions with technical assistance on all aspects of solid waste management. In 1979, EPA regions responded to 288 requests through the use of regional personnel (62), contractors (136), and peer matching (90).

In 1979, the Panels program began providing an increasingly wider scope of technical assistance than in the past. As an example, hazardous waste management requests increased from 15 percent to 23 percent of the requests for technical assistance in 1979. Further increases are expected with promulgation of the Subtitle C regulations. This program has been highly successful in supplying information for rational decision-making at the State and local level, thereby expediting the implementation of waste management programs by one to three years. Two examples of such assistance in 1979 were:

- Region I, as part of a Technical Assistance Panels effort, produced a seminar on the codisposal of solid waste and sludge to be presented in each region. The seminar will provide State and local decision-makers with up-to-date and comprehensive information on the benefits of this disposal alternative, including technologies, procurement strategies and financing opportunities.

- The Minnesota Pollution Control Authority received technical assistance in developing alternative solutions to problems of soil and groundwater contamination at four hazardous waste sites. Through the Panels program existing data on the sites was analyzed and recommendations for remedial action and follow-on monitoring were presented.

1980 Program

The total current estimate for this program element is 19 permanent workyears and $514,400 for Salaries and Expenses. The program will remain structured to include individual consultant contracts for each regional office. This support and the other services enable each region to maintain comprehensive coverage of its jurisdiction's needs. These services will act as a catalyst for States and local governments as they begin to implement their responsibilities under Subtitles C and D of RCRA, such as the inventory of all solid waste disposal sites and State hazardous waste management program development and implementation.

This assignment of primary responsibility for provision of technical assistance to the regions has become increasingly significant, as unique regional, State, and local differences and needs are encountered. EPA realizes that the regions are more familiar with the specific waste management problems of its jurisdiction and can better integrate the Panels program with the development of RCRA's regulatory programs.

1980 Explanation of Changes from Budget Estimate

The net decrease of $2,300 results from several actions. An increase of $20,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $3,300. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $2,700 to this activity.

Regional reprogrammings within the solid waste media resulted in a transfer of $20,300 to other activities; a transfer of $6,700 to the air media; and $4,900 from the water quality media.

1981 Plan

EPA requests a total of 19 permanent workyears and $386,500 under this program for the Salaries and Expenses appropriation. This reflects a decrease of $127,900 from the 1980 level.

The resources will enable EPA regions to continue coordinating and administering the delivery of technical assistance through the RCRA mandated Panels program. This will include receiving and responding to minor technical assistance inquiries, reviewing and evaluating requests for assistance, selecting modes of assistance and developing workscopes. Technical assistance will continue to be provided through contractor, peer matching and EPA regional personnel.

EPA will also use Older Americans, IPAs and other special employment categories that do not affect the Agency's ceiling. They will participate in the management and actual provision of technical assistance in each region.

TECHNICAL ASSISTANCE DELIVERY - HEADQUARTERS

1979 Accomplishments

In 1979, obligations totalled $2,845,300, of which $2,448,900 was for extramural purposes. EPA headquarters awarded funds to 10 regional contracts and 6 public interest groups for peer matching services under the RCRA mandated Technical Assistance Panels program. EPA headquarters policy was to provide direct technical assistance on all aspects of solid waste management only when regional personnel, consultants or peer matching was either insufficiently developed or unable to respond in a timely manner.

EPA developed and issued a regional projects officer's guidance document, revised a document explaining the Panels' program to State and local officials, and issued a summary report of 1978 Panels program activities.

1980 Program

The total current estimate for this program element is 3 permanent workyears and $3,260,000 of which $121,200 is for Salaries and Expenses and $3,138,800 is for Abatement, Control and Compliance. By 1980, the regions will have fully developed their own expertise in all areas of solid waste management potentially needing technical assistance. However, EPA headquarters will continue to be responsible for managing the Technical Assistance Panels program nationally. National management will ensure consistency of the overall program among the regions, provide a mechanism for the development and distribution of general policy and guidance documents, and provide the regions with a central contact point for providing input into the program.

EPA will award 10 new level-of-effort contracts in 1980. These contracts will provide for quicker response to client communities, will be easier to administer, and will have lower cost per effort due to less contractor paperwork in processing requests. Six public interest group peer matching grants will be awarded and monitored, and the overall Panels program will be evaluated.

1980 Explanation of Changes from Budget Estimate

The net increase of $292,300 results from several actions. An increase of $4,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $69,500 to this activity.

A reprogramming of $400,000 was made within the solid waste media from hazardous waste regulations, guidelines and policies for contracts related to the development and implementation of Office of Solid Waste's hazardous waste regulations. Also, a reprogramming of $42,700 was made within the solid waste media to hazardous waste regulations, guidelines and policies to cover increased hazardous waste activities.

1981 Plan

EPA requests a total of 3 permanent workyears and $4,613,500 under this program element, of which $119,700 is for the Salaries and Expenses appropriation and $4,493,800 is for the Abatement, Control and Compliance appropriation. This reflects an increase of $1,353,500 over the 1980 level.

In 1981, national management of the Technical Assistance Panels program will continue to be provided. This will include negotiating, awarding and monitoring consultant contracts and public interest group peer matching grants; conducting reporting and recordkeeping activities; and evaluating the overall program to enable EPA to ascertain the effectiveness and responsiveness of the various technical assistance provided.

SOLID WASTE

Uncontrolled Hazardous Waste Sites

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Salaries and Expenses		$504	$558	$1,737	+$1,178
Abatement, Control and Compliance		17,429	16,537	16,570	+33
Total		17,933	17,095	18,307	+1,211
Permanent Positions		15	17	19	+2
Full-time Equivalency		15	17	19	+2

Budget Request

The Agency requests $18,307,000 and 19 permanent workyears for this subactivity in 1981, an increase of $1,211,400. Included in this request are $1,736,500 for the Salaries and Expenses appropriation and $16,570,000 for the Abatement, Control and Compliance appropriation. A portion of the increase is to cover purchase of special equipment for emergency response and investigative work by regional offices. This special equipment is necessary because the highly toxic nature of the wastes encountered requires specialized field handling and protective equipment such as an activated carbon treatment trailer and mobile stream diversion systems. This subactivity, when combined with the resources requested under the "Hazardous Waste Enforcement" subactivity, define the total Agency resources directly committed to the uncontrolled hazardous waste sites problem.

Program Description

The uncontrolled hazardous waste site program is an interim program to address the worst known problems associated with uncontrolled hazardous waste sites. The interim strategy encompasses site discovery actions, investigations to determine the potentially most serious sites, emergency assistance and containment of those sites where eligible under Section 311 of the Clean Water Act of 1977 or through enforcement actions. This interim approach will only bridge the gap until "Superfund" legislation is enacted and is not intended to be a major program of cleanup or containment in advance of funds and authorities available under the proposed new legislation.

The primary objective of the program is to eliminate threats to public health and welfare and ecologically sensitive areas from uncontrolled hazardous waste sites. Rough preliminary estimates reveal that there may be 30,000 to 50,000 sites containing hazardous wastes, of which 1,200-2,000 may present potentially significant problems. To date, EPA and the States have merely "scratched the surface" of the hazardous waste site problem. Only a small number of these sites have been inventoried and the extent of risks posed by them is in most cases still unknown. Current authority limits remedial measures to spill response actions and restricts enforcement action to those sites which pose an "imminent and substantial" danger to public health and the environment. Because of this limited authority, actual and potential damage to public health from these sites has gone unabated in the past. Prior to the presently developing interim strategy, Federal action against the dangers of uncontrolled hazardous waste sites was largely a response to chance discovery of such a site and/or the development of an emergency situation that threatened or actually exposed people to harm or injury.

Consequently, the major objects of the present program are to implement, manage and coordinate the overall Federal response to the uncontrolled hazardous waste site problem. The program strategy is three-fold: (1) to identify and investigate sites (which will be performed primarily by contract personnel); (2) to assess the degree of hazard at sites; and (3) to provide all possible support to EPA enforcement officials in developing and prosecuting cases against culpable persons.

1980 Program

In 1980, the Agency has allocated a total of $17,095,100 and 17 permanent workyears to this program, of which $558,100 is for Salaries and Expenses and $16,537,000 is for extramural purposes under the Abatement, Control and Compliance appropriation. Additional resources for this program are provided by the Office of Enforcement and the Office of Research and Development.

The uncontrolled hazardous waste site program was developed in late 1979 as a result of an EPA task force study on an "Agencywide Hazardous Waste Site Enforcement and Response System". The interim plan resulting from this study was presented as a 1980 budget amendment to Congress for $20 million and was appropriated by Congress at the end of the fiscal year. During 1979, a substantial number of serious health threats from past practices of indiscriminate disposal of highly toxic hazardous wastes were discovered. The effects of the uncontrolled waste disposal sites ranged from contamination of surface and ground waters, including drinking water supplies, to fish and wildlife kills, vegetation destruction, threats to public safety because of fires or explosions, and direct exposure and injury as happened at Love Canal. EPA's response is primarily through enforcement actions using the emergency authority of Section 311 until passage of "superfund."

During 1980, the uncontrolled hazardous waste site program will begin to implement the interim strategy as delineated in the June 27, 1979, and November 27, 1979, memoranda from EPA's Deputy Administrator. This strategy is based on the policies established during 1979 and includes on site identification and discovery, field investigations, emergency response, and enforcement actions.

The 1980 program relies extensively on contractor support included under this subactivity to provide dedicated field investigative personnel to the regions, the National Enforcement Investigation Center (NEIC), and the Environmental Response Team (ERT), and to perform site identification, investigation and enforcement case preparation. The contractor will also provide other non-dedicated services such as drilling sample wells, retaining expert consultants such as epidemiologists, and procuring engineering services to determine remedial measures. The $16.5 million in contracts will include a $7-$8 million field investigation contract, which should be awarded by February 1980, and a $8-$9 million series of chemical analysis contracts for analyzing samples obtained during the site investigations. An additional contract will be awarded to manage and control the shipment of samples to and from the regional offices and the laboratories. It is projected that the program will conduct, through the national contract, preliminary investigations on 500 sites, full investigations on 70 sites and support for enforcement cases against 35 sites. It is estimated that 5,000 samples will be analyzed for organics, inorganics and heavy metals by the contracted laboratories.

The overall "Hazardous Waste Site Management Information System" will be implemented in 1980, as defined in the November 9, 1979, memorandum of the EPA Deputy Administrator. The system is designed to provide a consistent framework for regional decision making by developing and documenting the information available on each site from the point of initial identification through the investigation, cleanup and enforcement stages. The system will be used both as a management tool and a source for policy makers. Top priority in 1980 is

to ensure that the most serious hazardous waste sites are addressed first, given the large number of potentially dangerous sites EPA must address in the short time period available.

1980 Explanation of Changes From Budget Estimates

The net decrease of $837,500 results from several actions. An increase of $20,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $23,100 and $800, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $515,100 to this activity. A transfer of $478,000 was made within the solid waste media to hazardous waste monitoring and technical support for the hazardous waste sites admendment and $121,000 was transferred to management and support for support costs associated with the hazardous waste amendment; for budgetary purposes, these resources were requested within this activity. A reprogramming of $208,500 was made within the solid waste media from hazardous waste management regulatory strategies implementation ($141,100) and from hazardous waste regulations, guidelines and policies ($67,400) for response to uncontrolled hazardous waste sites. A reprogramming from other media was implemented in order to support hazardous waste site responsibilities, $54,700 from the water quality media; $171,100 from the drinking water media.

1981 Plan

The Agency requests a total of $18,306,500 and 19 permanent workyears in 1981 for this program, of which $1,736,500 is for the Salaries and Expenses appropriation and $16,570,000 for the Abatement, Control and Compliance appropriation. Additional resources for this program are provided by the Office of Enforcement and the Office of Research and Development.

The program plans to continue to develop, implement and maintain the interim strategy for response to hazardous waste sites in 1981, as established in policy memoranda during 1980. Pending enactment of "superfund" legislation, most corrective actions at uncontrolled hazardous waste sites will be limited to short term remedial action using available Section 311(k) funds. As more sites are identified, increasing emphasis will be placed on the priority system in order to determine which sites to investigate with the limited available resources. Particular emphasis will also be given to integrating the Section 311, enforcement and investigation program efforts in order to make maximum use of expertise and available resources.

The investigation and sample analysis contracts should be fully in place by 1981 to augment and support regional resources efforts. Both contracts will continue to be funded in 1981 at about the same level ($16,570,000 total) as in 1980. In 1981, it is projected that 500 preliminary site investigations, 70 full investigations, and support for 35 enforcement cases will be completed. The number of samples to be analyzed will reach approximately 5,000 during the year.

SOLID WASTE

Hazardous Waste Enforcement

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Hazardous Waste Enforcement:					
Salaries and Expenses.	$928	$2,174	$1,516	$3,161	+$1,645
Abatement, Control and Compliance.....	587	...	783	632	-151
Uncontrolled Hazardous Waste Site Enforcement:					
Salaries and Expenses.	...	2,000	2,031	1,925	-106
Abatement, Control and Compliance.....	...	...	...	...	...
Total:					
Salaries and Expenses.	928	4,174	3,547	5,086	+1,539
Abatement, Control and Compliance.....	587	...	783	632	-151
Grand Total.....	1,515	4,174	4,330	5,718	+1,388
Permanent Positions					
Hazardous Waste Enforcement.....	26	46	41	83	+42
Uncontrolled Hazardous Waste Site Enforcement.	...	53	61	53	-8
Total.....	26	99	102	136	+34
Full-time Equivalency					
Hazardous Waste Enforcement.....	31	52	49	98	+49
Uncontrolled Hazardous Waste Site Enforcement.	...	53	61	53	-8
Total.....	31	105	110	151	+41

Budget Request

The Agency requests a total of $5,718,300 for 1981, an increase of $1,388,400 over 1980. Included in this total is $5,086,100 for Salaries and Expenses and $632,200 for Abatement, Control and Compliance, with an increase of $1,538,800 and a decrease of $150,400, respectively. The request of 136 permanent workyears for 1981 represents an increase of 34 over the workyears available to this program in the previous year.

Program Description

The Resource Conservation and Recovery Act of 1976 (RCRA) provides for comprehensive control over the handling of solid and hazardous wastes. The Act authorizes EPA to promulgate regulations to control hazardous wastes from the point of generation to the point of final disposal.

The hazardous waste enforcement program is at this time organized into two major, separate components: (1) the hazardous waste enforcement program and (2) the uncontrolled hazardous waste site enforcement program. In July of 1979, EPA determined that the clean-up by responsible parties of hazardous waste dumpsites threatening public health would be given "highest Agency priority" and established an agency-wide Hazardous Waste Enforcement and Emergency Response System. Consequently, a "National Hazardous Waste Enforcement Task Force" was established to coordinate and manage the imminent hazard cases initiated under Section 7003 of RCRA, Section 1431 of the Safe Drinking Water Act, Section 504 of the Clean Water Act, and the Toxic Substances Control Act. Since its inception, the Task Force has been active in evaluating potential hazards at sites known to contain hazardous waste and in assisting in legal action and emergency Federal actions to contain the spread of contaminants where existing local authority and funding is insufficient. The Task Force was established as a separate component to expedite handling of uncontrolled hazardous waste site cases in conjunction with a newly-formed Hazardous Waste Section in the Department of Justice. (Task Force functions and activities are discussed under the Uncontrolled Hazardous Waste Site Enforcement justification.

The hazardous waste enforcement program is responsible for development of an overall enforcement strategy to implement a monitoring program designed to ensure compliance with RCRA Subtitle C regulations. The regulations will require generators and transporters of hazardous waste to comply with certain procedural standards, such as recordkeeping, reporting, and proper containerization, and will also require that all transported hazardous wastes be accompanied by a manifest document and that such wastes be taken only to permitted hazardous waste management facilities. Hazardous waste management facjlities will be required to obtain a permit from EPA or an authorized State. Procedures for routine inspection and sampling of facilities which generate, transport, treat, store, or dispose of hazardous wastes will be developed, and guidelines will be promulgated establishing standards of evidence needed to support enforcement actions in cases of manifest system or permit violations. This unit will also be responsible for promulgatng rules of practice governing the issuance of compliance orders and hearings conducted to assess administrative penalities or suspend or revoke permits.

HAZARDOUS WASTE ENFORCEMENT

1979 Accomplishments

Obligations in 1979 totaled $1,514,700, of which contract funds totalling $587,100 were expended in 1979 to support development of the overall enforcement strategy and to assist the Office of Solid Waste in developing an ADP system to meet anticipated program needs. Funds were also used to develop a RCRA penalty policy for use in administrative, civil, or criminal proceedings.

Program activities in 1979 focused on efforts to formulate a comprehensive enforcement strategy for the implementation of a hazardous waste enforcement program in the later part of 1980 or the beginning of 1981. Included in this effort was the preparation of a draft document entitled "Enforcement Priorities Model," designed to provide national guidelines for establishing and operating enforcement programs and for addressing suspected

manifest and permit violations. The program also provided extensive assistance and support to the Office of Solid Waste in the development of draft regulations and guidelines under RCRA. The Agency completed an initial draft of a "Case Proceedings Manual" for use in taking enforcement actions. Also nearing completion in 1979 was a "General Inspections Manual" to be used to inspect permitted sites. The purpose of the manual is to provide the necessary administrative guidance needed to properly conduct inspections of hazardous waste facilities. In addition, hazardous waste enforcement personnel were involved in developing amendments to RCRA which would eliminate certain internal inconsistencies and strengthen the regulatory and enforcement mechanisms of the Act. Prior to establishment of the Task Force in June of 1979, and as part of the Agency's effort to assess the imminent and substantial hazard presented by designated sites, staff resources were also devoted to investigation of uncontrolled sites and preparation of enforcement cases.

1980 Program

In 1980, the Agency has allocated a total of $2,298,500 to this program, of which $1,515,900 is for Salaries and Expenses and $782,600 for the Abatement, Control and Compliance appropriation. Permanent workyears allocated in 1980 total 41, an increase of 15 over the 1979 program level.

The highest priority for the 1980 hazardous waste enforcement program will be assisting the Office of Solid Waste in the development and completion of final RCRA regulations. In 1980, regional staff also will finalize plans to conduct hazardous waste enforcement programs in States most likely to receive interim or final authorization during 1981. The headquarters, in preparation for 1981, will design ADP systems to maintain and monitor manifest, inspection, and enforcement information. The regions will participate in headquarters sponsored training sessions to establish an adequate level of regional expertise on inspection procedures and enforcement case preparation. EPA will develop criteria for use in 1981 to assess and approve enforcement portions of applications from 37 states seeking interim or final authorization. Criteria will also be developed for use in evaluating the adequacy of authorized state programs in 1981 and subsequent years.

Contract funds available in 1980 total $783,500 and will be used to support ADP system development and operation, and additional assistance in completion of the overall RCRA implementation strategy.

1980 Explanation of Change from Budget Estimate

The net increase of $124,300 results from several actions. An increase of $51,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $5,900 and $20,900, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $230,100 to this activity.

A transfer of $7,000 was made from the water quality media to support travel costs. A transfer of $50,000 was made to management and support to the Office of Enforcement program management to support work with the Special Assistant for Litigation management associated with imminent hazards under RCRA. A reprogramming of $68,900 was made within this media to uncontrolled hazardous waste sites in support of those activities.

Regional reprogrammings to cover projections based on 1979 expenditures resulted in transfers to the water quality media, $17,700; to the air media, $3,000; and within the solid waste media, $2,000 from technical assistance delivery.

1981 Plan

The Agency requests a total of $3,793,100 for this program, of which $3,160,900 is for the Salaries and Expenses appropriation and $632,200 for the Abatement, Control and Compliance appropriation, an increase of $1,645,000 and a decrease of $150,400 respectively. A total of 83 permanent workyears will be available to the program in 1981, an increase of 42 over the 1980 level.

The 1981 program will consist of the following activities. Regions will establish and conduct compliance monitoring and enforcement programs for all States not granted interim or final authorization. As the authorized States begin implementing their programs, EPA will provide legal and technical assistance, as requested, and evaluate the adequacy of the state enforcement programs. Regions will be responsible for maintaining management information systems in order to manage notification, manifest system, compliance monitoring, and inspection activities in unauthorized States.

Contract funds totaling $632,200 will support ADP system design improvements, the updating or expanding of existing training manuals covering compliance inspection and case development procedures, qualitative evaluation of State hazardous waste management plans, the public outreach program, and development and implementation of consolidated inspection procedures.

UNCONTROLLED HAZARDOUS WASTE SITE ENFORCEMENT

1979 Accomplishments

In July 1979, the Hazardous Waste Enforcement Task Force was established to take enforcement actions against uncontrolled hazardous waste sites posing the most immediate threats to health and the environment. The authority to remedy hazardous waste sites and spills that present an "imminent and substantial" hazard is included in the emergency provisions of several acts, including Section 7003 of RCRA, Section 1431 of the Safe Drinking Water Act, TSCA, and Section 504 of the Clean Water Act.

In August of 1979 the Task Force began developing a Hazardous Waste Site Tracking System. This computerized system, which became operational in January 1980, tracks the status of potential hazardous waste sites from initial identification through the site investigation, remedial, and enforcement stages. As of November 30, 1979, 3,913 potentially hazardous sites had been identified and entered into the system. The system provides Agency management with statistical summaries on accomplishments, milestones and the status of enforcement actions against individual sites.

1980 Program

The Agency has allocated a total of $2,031,400 to this program for 1980 all of which is for Salaries and Expenses. A total of 61 permanent workyears have been allocated for 1980, an increase of 8 over the 1979 program level.

During 1980, the uncontrolled hazardous waste site enforcement program will continue to place high priority on enforcement actions concerning uncontrolled waste sites that pose an imminent threat to public health and safety and to the environment.

The Hazardous Waste Site Tracking System will be fully implemented during 1980. This will provide the Agency with an inventory of known and potentially dangerous hazardous waste sites. The information gathered by this system will be used to determine what enforcement or remedial actions will be required to neutralize any current or potential danger presented by these sites.

The Agency will continue to bring enforcement actions against uncontrolled hazardous waste sites using available authorities from the Resource Conservation and Recovery Act, the Safe Drinking Water Act, the Clean Water Act, and the Toxic Substances Control Act.

Approximately 40 cases will be initiated during 1980 against sites that pose the greatest imminent hazard to health and the environment. The cases will require the responsible parties to either stop activities and/or undertake costly cleanup actions at their own expense. The Agency will conduct hundreds of preliminary assessments and site inspections to develop these cases and determine the need for remedial actions.

Training sessions for Agency and State personnel on topics such as site investigations, use of the safety manual, chain of custody and document control will continue. Enforcement will continue to work closely with Department of Justice, regional, and State enforcement personnel to develop and negotiate regionally and nationally managed enforcement cases.

1980 Explanation of Change from Budget Estimate

The net increase of $31,400 results from several actions. An increase of $65,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $15,200 and $13,200, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $400 to this activity.

A transfer of $2,500 was made within the solid waste media to hazardous waste management regulatory strategy implementation to support the continued cooperative education program. A transfer of $57,000 was made from the water quality media and $30,000 from the pesticides media to reflect the transfer of 50 percent of the oil spill enforcement capability since these activities are closely related. This reprogramming gives formal recognition to otherwise hidden responsibilities which draw on other abatement and control and enforcement resources; in this case some pesticides and water enforcement capability is being diverted to initiate enforcement actions where hazardous waste disposal presents an imminent danger to public health and welfare. A transfer of $160,000 was made to the management and support media of resources received under hazardous waste amendment to regional and nationwide support costs; for budgetary purposes these funds were requested in this element. A transfer of $68,900 was made within the solid waste media from hazardous waste enforcement and $1,500 from air stationary source enforcement to support projected costs based on 1979 expenditures.

1981 Plan

In 1981, the Agency requests an appropriation of $1,925,000, all of which is for the Salaries and Expenses appropriation. This is a decrease of $106,200 from 1980. The request for 53 permanent workyears represents a decrease of eight from 1980.

The highest priority will continue to be the initiation and management of enforcement actions involving hazardous waste sites and spills that present imminent and substantial hazards to public health and the environment. During the 1981 time period, an increasing percentage of Task Force time will be devoted to litigation support activities as previously field cases come to trial. The program will also concentrate on the identification of additional uncontrolled sites and take appropriate enforcement action. Enforcement, working with the regions, will investigate and assess hazardous waste sites. Finally, headquarters will continue to provide technical and legal support to the States to augment their hazardous waste enforcement efforts.

Contract support available through the uncontrolled hazardous waste site element of the Office of Water and Waste Management will be used to supplement in-house site investigation and sample analysis resources.

SOLID WASTE

Hazardous Waste Permit Issuance

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Salaries and Expenses...	...	...	...	$4,090	+$4,090
Abatement, Control and Compliance.....	...	...	...	25	+25
Total.....	...	...	...	4,115	+4,115
Permanent Positions.....	...	...	...	121	+121
Full-time Equivalency...	...	...	...	175	+175

Budget Request

The Agency requests a total of $4,114,300 for hazardous waste permitting in 1981. This is the first year the program will be funded. The request includes $4,089,600 for Salaries and Expenses and $24,700 for Abatement, Control and Compliance. All of the 121 permanent workyears requested are an increase from 1980.

Program Description

The hazardous waste permit program is part of the comprehensive effort required by the Resource Conservation and Recovery Act (RCRA) to manage hazardous waste. The Act prohibits treatment, storage or disposal of hazardous waste except in accordance with an EPA or approved State-issued permit. RCRA permits are a mechanism for controlling hazardous waste by imposing performance standards on treatment, storage, and disposal facilities. These standards, set by the hazardous waste management program, will assure that hazardous waste is managed according to environmentally acceptable practices. EPA estimates there are a total of 30,000 sites that will require permits, 7500 of which will be issued by EPA. The remaining 22,500 permits will be issued by States with approved RCRA programs.

Development of adequate State hazardous waste permit programs is another significant aspect of the permits issuance program. RCRA places great emphasis on approving state programs allowing them to issue permits with either temporary "interim authorization" or full authorization if they meet RCRA's requirements. EPA's role in the State authorization process is twofold. First, EPA will support State efforts to develop adequate State permit programs by providing them with technical, legal, and adminstrative assistance. Secondly, EPA will oversee approved programs to assure that State permits are issued in conformance with national program policies. EPA's success in authorizing State programs will affect the volume of permitting done by the Agency.

As part of its continuing effort to improve the regulatory process, EPA is consolidating permit issuance procedures for five permit programs. Coordination and consolidation of the permitting process will benefit both the public and the Agency by reducing delay and simplifying permitting procedures.

1979 Accomplishments

The regulatory framework for the hazardous waste permitting program was advanced significantly in 1979 with proposal of the consolidated permit regulations. Included in this proposal are both permitting and standards for State program approval authorized by Sections 3005 and 3006 of RCRA.

Work also moved forward in 1979 on development of a permitting strategy which will provide national guidance for the hazardous waste permit program.

1980 Program

The first priority for the 1980 hazardous waste permit program is to promulgate final consolidated permit regulations and application forms. This will enable EPA to begin approval of state permitting State programs. Promulgation of these regulation will provide the framework for the hazardous waste permit program.

Permit resources in 1980 are carried under the hazardous waste enforcement program. They will be devoted to the review of State hazardous waste permit programs to determine if they qualify for interim authorization under Section 3006 of RCRA, and to provide national guidance and coordination of permit issuance procedures.

1981 Plan

The Agency requests a total of $4,114,300 for this program, of which $4,089,600 is for the Salaries and Expenses appropriation and $24,700 is for the Abatement, Control and Compliance appropriation. All of the 121 permanent workyears requested are an increase from 1980.

In 1981, EPA will begin implementation of a 6-year program to permit an estimated 7,500 hazardous waste management facilities. The major component of this program will be permit issuance to facilities that treat, store, or dispose of hazardous waste. EPA will begin issuing permits to both off- and on-site hazardous waste management facilities in 1981, in accordance with guidance provided by EPA's hazardous waste permitting strategy. Challenges to permit terms and conditions or permit denials are also expected to require EPA efforts. This is necessary to provide fully effective permits and clear the way for implementing the hazardous waste control provisions and enforcement action.

In 1981, approximately 37 States are expected to receive interim authorization to begin issuing an estimated 22,500 hazardous waste permits. EPA intends to provide States with legal, technical, and administrative assistance to enable them to develop permit programs that qualify for full authorization.

EPA is requesting $24,700 in contract support to provide technical assistance for hearings on RCRA permit terms and conditions.

PESTICIDES

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
APPROPRIATION						
Salaries and Expenses	$32,369	$24,657	$33,721	$30,928	-$2,793	
Research and Development	7,401	3,358	5,922	3,780	-2,142	
Abatement, Control and Compliance	30,469	34,235	28,513	39,292	+10,779	
Total	70,239	62,250	68,156	74,000	+5,844	
Permanent Workyears	936	979	985	914	-71	
Full-time Equivalency	1,044	1,117	1,128	1,034	-94	
Outlays	58,210	58,600	57,000	63,000	+6,000	
Authorization levels	81,998	*	*	*		
			*Authorization pending.			
PROGRAM HIGHLIGHTS						
Health and Ecological Effects:						P-12
Salaries and Expenses	4,904	6,010	6,520	5,021	-1,499	
Research and Development	3,225	2,288	2,014	949	-1,065	
Industrial Processes:						P-23
Salaries and Expenses	...	...	26	117	+91	
Research and Development	4,091	900	3,860	2,783	-1,077	
Monitoring and Technical Support:						P-28
Salaries and Expenses	407	270	500	517	+17	
Research and Development	85	170	48	48	...	
Total:						
Salaries and Expenses	5,311	6,280	7,046	5,655	-1,391	
Research and Development	7,401	3,358	5,922	3,780	-2,142	
Total, Research and Development Program	12,712	9,638	12,968	9,435	-3,533	
Registration and Tolerances:						P-31
Salaries and Expenses	7,848	6,788	11,212	10,593	-619	
Abatement, Control and Compliance	3,039	5,402	296	1,148	+852	
Standards Setting and RPAR:						P-38
Salaries and Expenses	13,336	6,455	10,591	10,070	-521	
Abatement, Control and Compliance	15,062	18,105	15,522	27,112	+11,590	
Federal and State Program Support:						P-44
Salaries and Expenses	1,802	1,728	1,652	420	-1,232	
Abatement, Control and Compliance	3,514	1,978	3,780	...	-3,780	
Total:						
Salaries and Expenses	22,986	14,971	23,455	21,083	-2,372	
Abatement, Control and Compliance	21,615	25,485	19,598	28,260	+8,662	

P-1

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
Total, Abatement and Control Program	44,601	40,456	43,053	49,343	+6,290	
Pesticides Enforcement:						P-47
Salaries and Expenses	4,072	3,406	3,220	4,190	+970	
Abatement, Control and Compliance	8,854	8,750	8,915	11,032	+2,117	
Total, Enforcement Program	12,926	12,156	12,135	15,222	+3,087	
Permanent Positions						
Health and Ecological Effects	128	124	128	80	-48	P-12
Industrial Processes	...	...	...	...	...	P-23
Monitoring and Technical Support	9	9	12	23	+11	P-28
Total, Research and Development Program	137	133	140	103	-37	
Registration and Tolerances	314	361	341	341	...	P-31
Standards Setting and RPAR	348	335	331	316	-15	P-38
Federal and State Program Support	48	39	64	17	-47	P-44
Total, Abatement and Control Program	710	735	736	674	-62	
Pesticides Enforcement, Total Enforcement Program	116	116	111	137	+26	P-47
Full-time Equivalency						
Health and Ecological Effects	167	172	185	119	-66	P-12
Industrial Processes	...	...	...	...	...	P-23
Monitoring and Technical Support	10	9	13	24	+11	P-28
Total, Research and Development Program	177	181	198	143	-55	
Registration and Tolerances	314	396	381	381	...	P-31
Standards Setting and RPAR	356	364	356	336	-20	P-38
Federal and State Program Support	58	52	71	20	-51	P-44
Total, Abatement and Control Program	728	812	808	737	-71	
Pesticides Enforcement, Total Enforcement Program	139	124	122	154	+32	P-47

OVERVIEW AND STRATEGY

Since 1970, annual pesticide production and application has increased by 70 percent to 1.7 billion pounds. There are approximately 35,000 products on the market. These products contribute to major societal benefits such as increased agricultural productivity, lower domestic food prices, esthetic amenities for American consumers, more favorable balance of payments due to increased exports of agricultural products, and control of human disease vectors. On the other hand, pesticides, designed to be injurious to living organisms and deliberately introduced into the environment for this purpose, have the potential of causing unacceptable harm to human health and the environment. Since most of these products are used on human or animal food crops wherein human exposure is unavoidable, or in other situations with the potential for human exposure, their potential for causing unacceptable harm is heightened.

The objective of the pesticide program is to protect the public health and the environment from unreasonable pesticide risks while permitting the use of necessary pest control technologies. This objective is pursued through four principal means: (1) review of existing and new pesticide products, (2) use management, (3) enforcement, and (4) research and development.

Review of Existing and New Products

New pesticide products are reviewed and registered upon a finding that the product will not pose unreasonable risks to humans or the environment, taking into consideration the economic, special, and environmental costs and benefits stemming from use of the pesticide. Risk is often quantified in terms of the number of or probability of certain health effects in a given population, while benefits are most often stated in dollar valuations of such effects as increased crop yields, lower food costs, reduced chance of disease or the cost savings with respect to the use of alternative control measures. Prior to any registration the benefits of a particular pesticide must be demonstrated to exceed the risk. The review and reregistration of all federally and State-registered products now on the market is required by the 1972 Amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Most existing products were originally registered before the chronic effects (e.g. cancer, birth defects, gene mutations, etc.) of exposure to toxic chemicals were well understood. Their reregistration will thus require more thorough and consequently more resource intensive review of all test data for both acute and chronic effects and in many cases, the collection of the basic data itself.

The Federal Pesticide Act of 1978, which amended the FIFRA, endorsed the regulatory reforms requested by EPA that would streamline the review process and allow the agency to increase and improve its regulatory decision making options. Major changes approved in the review and registration approach include generic pesticide registration, conditional registration, and the elimination of certain legal obstacles that were severely hindering the registration process and blocking the entry of new products to the market.

In the past, registration entailed an examination of risk for each product, one at a time. However, generic registration of pesticides entails a single, comprehensive evaluation of risks and benefits of the active ingredient chemicals common to numerous products, based on all data relevant to the registration decision. For every pesticide chemical and its formulations, performance standards and safety criteria will be set, to which registrants must adhere, in order to register and reregister products. In addition, standards for registration will state tolerable levels of exposure for fool, consumers, field workers, applicators, and other persons and organisms unintentionally exposed to pesticides.

Because of the extraordinary technical resource requirements that the registration standards development program will place on the Office of Pesticide Programs, major support will be derived from contracts outside the government. Not only are these efforts intended to augment existing facilities, as in the case of scientific literature searching and evaluation, but they are also intended to provide expertise in areas where adequate numbers of trained and experienced people are simply unavailable, such as in toxicology. In all cases, the Agency will provide stringent quality control oversight on all extramural activities. In no case will contractors be called upon to make regulatory decisions or recommendations.

The generic approach was implemented because of the opportunity it presents for increased economy and efficency in the pesticides registration process. This approach (The Registration Standards Program) provides an opportunity to broaden and validate the data base the Agency uses in decision making to systematically review earlier submitted data and decisions, to encourage and permit fuller public participation in the regulatory process, and to document the rationale employed at each step in the process. Continuing will be efforts to: eliminate inconsistency in label directions and warnings for similar products, assure that pesticide products previously registered for intrastate use meet Federal safety standards, reassess tolerances, and restrict use of those products that are significantly hazardous.

The program will most directly impact the public health and the quality of the environment through the imposition of a variety of regulatory restrictions. EPA's regulatory options range from cancellation of uses to unconditional registration. Where unreasonable adverse effects are identified, the Agency may initiate rebuttable presumption against registration (RPAR) proceedings, in which suspect chemicals are subjected to focused risk/benefit assessment and alternative chemicals are considered, so as not to adversely impact agricultural productivity or pest control ability. In cases where a lesser degree of hazard may exist, the Agency may consider such risk reducing measures as: precautionary labeling, childproof packaging restriction to use by certified applicators, and mandated use of protective clothing.

Other key elements of the program to review pesticide products include the following:

Registration, which enables new products to enter the market. Under this program, new pesticide products are registered, and current registrations are amended for new uses and/or new formulations. Registration (pre-market clearance) of pesticides is a comprehensive process designed to optimize the safe and effective use of pesticides. Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), all pesticides legally marketed in the United States must be registered by the Agency.

Amendments to the FIFRA have authorized a program of generic pesticides registration. In the past, registration entailed an examination of risk of each product one at a time. However, generic registration of pesticide entails a single comprehensive evaluation of risks and benefits of the technical material common to numerous products based on all data relevant to the registration decision. The new system will demand less time and money both from EPA and the registrant.

Development of generic pesticide standards will take time and until such standards are developed and the complete new reregistration program is put in place, Congress has authorized a program for EPA to grant conditional registrations. Conditional registration will allow EPA to process applications of new products which are similar to ones already registered, and thus permit the new products to enter the market on an equal footing with others already registered and in turn provide consumers with a wider range of comparable products. Ultimately, all products will be reviewed comprehensively when reregistered under generic pesticide registration standard.

New use of "old" chemicals and new chemicals will also be eligible for conditional registration if EPA determines that enough information is available to evaluate unique hazards that may be posed by the new uses. The Agency is also authorized to issue conditional registration of new chemicals if the public interest would be served by a registration, and if risks during the period required to complete and submit additional studies are not unreasonable.

Central to the conditional registration program is incremental risk assessment. The law requires the Agency to focus its attention only on the increased risks (incremental risks) posed by the registration of "old" pesticides and new uses of "old" pesticides. Specifically, conditional registration of both identical and substantially similar products and uses and new uses is authorized only if the new product or use would not significantly increase the risk of unreasonable adverse effects on the environment.

In the future, conditional registration will be useful for allowing time to meet new data requirements or, in some special cases, for permitting early registration of brand new chemicals.

Litigation challenging both the constitutionality of the new amendments and also the Agency's authority to consider all pertinent data in making decisions on the registerability of pesticide products has been initiated by 17 pesticide manufacturers, unless resolved in the Agency's favor, it could have the effect of halting the conditional registration program and, utimately, standards development as well.

Special Registration, which encompasses: (a) the issuance of experimental use permits under Section 5 of the FIFRA to generate data for registration, (b) establishment of temporary tolerances to cover safe levels of pesticide residues in food and feed from pesticide use for experimental purposes, (c) granting of emergency exemptions under Section 18 of the FIFRA to permit the temporary use of unregistered pesticides, (d) issuance of Section 24(c) special local need registrations, largely handled by the States with Federal oversight, and (e) issuance of minor use registrations through liaison with public interest user-oriented groups.

Congress has provided the authority to issue Experimental Use Permits (EUP's) to allow large scale experimentation necessary for the development of data for new pesticides or new uses of currently registered pesticides. These data are necessary to allow the Agency to evaluate the potential hazards to man and the environment when application is made for registration of the new chemical. Because of the importance of biologicals and third-generation pesticides to integrated pest management programs, special efforts will be made to process EUP applications for these pesticides so that data gathered may be used to allow them to enter the registration system rapidly.

These efforts are particularly important if the proposed use is on food or feed crop, since testing under an EUP usually involves thousands of acres of valuable food or feed crops. In such cases, destruction of the crop is not economically feasible or desirable; thus the Agency must establish temporary tolerances for residues of the pesticide which may remain on the food or feed commodity, thereby allowing for safe marketing and consumption of the commodity. Sufficient data must be submitted to allow the Agency to determine that the residue levels of the pesticide which result from its use are adequate to protect the welfare of the consumer.

The issuance of an EUP and the establishment of a temporary tolerance require a technical or scientific determination of the Agency, on a case-by-case basis, that the human and environmental risks and the benefits to be derived from the issuance of the EUP and temporary tolerance are within the goals and objectives of the Agency, as mandated by law.

FIFRA allows the Agency to issue emergency exemptions authorizing the use of unregistered pesticides or uses when it has been determined that such pesticides are necessary to alleviate the emergency, without undue risk to man and the environment.

Finally, FIFRA permits State agencies to issue pesticide registrations when the pesticide will be distributed and used only within the registering state. At the same time, Congress provided that EPA should have overview authority concerning these regulations, including the right to disapprove registrations issued contrary to Congress' intent. These usually involve food and feed uses for which tolerances have not been established, or uses of pesticides which have been suspended or cancelled by the Agency.

State also have special needs to issue experimental use permits on occasion. Such permits are usually needed to allow an interested pesticide producer to conduct the experimentation that will be needed to support a later State registration for a particular purpose. Congress has provided that States may issue such experimental use permits, subject to EPA overview, in the same manner as for the state registrations.

Special registration provides data for the registration of pesticides, flexibility in responding to emergency situations, and offers support to State and local governments in registering pesticides for local use only.

Tolerances. Under the Federal Food, Drug, and Cosmetic Act, as amended, (FFDCA), the Agency establishes tolerance levels and exemptions from the requirement of a tolerance for pesticide residues in or on raw agricultural commodities and processed foods. These tolerance levels protect the public health while giving appropriate consideration to the necessity for the production of an adequate, wholesome, and economical food supply.

Determination of tolerances involves careful review and evaluation of residue chemistry and toxicology data to ensure that maximum residue levels likely to be found in foods are safe for human comsumption. Included in this consideration is the cumulative affect of the same pesticide chemical and other related substances with the same physiological activity. Analytical methods are tested to ensure that adequate enforcement of the established tolerance can be achieved.

EPA will implement more flexible minor use tolerance data review procedures involving data requirements and scientific decision making. This will parallel conditional registration and other newly authorized registration remedies to EPA's pesticide registration program.

Use Management

Pesticides are classified, based upon their potential harm through misuse, for either general or restricted use. Restricted use pesticides may be applied only by certified applicators. This method of regulation provides a major tool in risk reduction for use of an essential pesticide which might otherwise be cancelled. In 1981, responsibility and resources for the certification and training of applicators of restricted use pesticides will be transferred to the enforcement program under the Office of Enforcement to operate Federal certification and training programs in Colorado and Nebraska, to provide grants in support of state certification programs and to fund applicator training conducted by the Department of Agriculture Extension Service. The use management program will provide technical assistance to upgrade training materials to the 12th grade level; assist the States by providing assistance with regard to pesticide spills, kills and fires; conduct limited evaluation activities; and handle pesticide inquires from farmers, registrants and the public.

Enforcement

The pesticides enforcement program is designed to support the objectives of regulating pesticide supply and use. The program emphasizes increased State involvement through Federal/State cooperative enforcement grants. Through such grants, the States are able to support comprehensive enforcement programs and bring local expertise into the national regulatory effort. In 1981, EPA will continue its efforts to involve most or all of the States and Territories in this program. Enforcement activities, either carried out by participating States, or by EPA in States not having grants, will focus on the general areas of insuring user compliance with label directions, and industry compliance with registrations, classification, and labeling requirements. Criminal investigations will continue on alleged data fraud in private testing laboratories.

Management of the certification and training program will be transferred from use management to enforcement in 1981 and the enforcement resources will be used to operate Federal certification and training programs in Colorado and Nebraska, to provide grants in support of State certification programs and to fund applicator training conducted by the Department of Agriculture Extension Service. This transfer is intended to strengthen the environmental benefits of the program, provide a programmatic linkage between the certification and training program and the state enforcement programs, and re-emphasize the priority of implementing certification and training programs in Colorado and Nebraska along with increased enforcement in these same States. Training materials will be upgraded to the 12th grade level and will emphasize the risks associated with pesticides.

Research and Development

The research and development program supports the Agency's pesticides regulatory activities through the development of data required to support administrative reviews and litigation. Such data are required on the major classes of pesticides now registered by EPA and in common use as well as on chemicals considered as possible substitues for cancelled pesticides. The program places emphasis on three basic elements necessary to evaluate overall human health and environmental hazards from pesticides: (1) identification of population at risk, (2) assessment of individual exposure, and (3) determination of adverse effects. Exposure assessment research will improve and develop protocols to determine occupational exposure to pesticides through their use, determine potential exposure of the general population to pesticides in air, freshwater, coastal waters, soil, sediment, plants, and fish and other animals, and determine the exposure of nontarget fish and wildlife. In addition, research is carried out to obtain data which will permit safety evaluations of the "new generation" pest control agents, such as insect viruses, sterility agents, and insect hormones, and to develp alternative means of pest management which can economically and acceptably reduce the quantity of pesticides introduced into the environment.

Research and Development activities provide scientific data to support the pesticide program by means of the Health Effects, Ecological Effects and Exposure Assessment programs. In addition, R&D will develop biological methods for controlling pests, to be used as alternatives to or integrated with chemical pesticides for management of agricultural and urban pests (Integrated Pest Management), and provide Quality Assurance methods for ensuring high quality testing and other protocols required for risk assessment.

Registered uses of pesticides determine the population group at risk. As increased amounts of exposure assessment data become available, it will be possible to make accurate and meaningful identifications of overall populations at risk. Registrants have provided much data on adverse effects and, although there is a continuing need for health and ecological effects data, particularly on new compounds, highest priority will be placed on exposure assessment due to the lack of available data on this topic. Exposure assessment research will be geared to the development of protocols to determine exposure to pesticides through use, population exposure through all media, and exposure of non-target organisms.

The Quality assurance program develops methods for analyzing and monitoring pesticides and their residues. Both internal quality control and external quality assurance will be applied to every protocol. Additional efforts will be made to ensure that in-house and extramural pesticide laboratories are routinely involved in quality assurance programs for chemical analysis.

Finally, the Integrated Pest Management program will develop systems for use with chemical pesticides to provide a necessary alternative for the pesticide registration process. Expanded emphasis will be directed to major ecosystems (corn, cotton, soybeans, alfalfa, and apples) and urban pests.

SUMMARY OF INCREASES AND DECREASES	(in thousands of dollars)
1980 Pesticides Program	$68,156
Salaries and Expenses	-2,793
The net reduction results from a decrease to health and ecological effects ($1.5 million); registrations and tolerances ($.6 million) standards setting and RPAR ($.5 million); pesticides use management ($.2 million).	
Research and Development	-2,142
The net decrease results from reductions to health and ecological effects ($1 million) and industrial processes ($1.1 million).	
Abatement, Control and Compliance	+10,779
The net increase is for the standards setting and RPAR (+$11.6 million) as offset by a reduction in pesticide enforcement grants (-$.8 million).	
1981 Pesticides Program	74,000

SUMMARY OF BUDGET ESTIMATE

1. Summary of Budget Estimate

An appropriation of $73,999,700 is requested for 1981. This request by appropriation account, is as follows:

Salaries and Expenses	$30,927,300
Research and Development	$3,780,200
Abatement, Control and Compliance	$39,292,200

This represents an increase of $5,843,500 from the 1980 level. Increased funding in the amount of $11,069,200 for standards setting and RPAR will provide for the continued development of pesticide registration standards which are crucial to improve the efficiency of future pesticides registration and reregistration activities; for the continuation of rebuttable presumption against registration (RPAR) actions which are necessary to properly assess the risks and benefits of compounds and to implement restrictions on compounds suspected of causing unreasonable adverse health effects; for the lab audit program to ensure the validity of data presented by registrants in support of past, current and future registrations; and to implement agreements made with Silvex registrants subsequent to the Administrator's emergency suspension of the product's major uses.

The registration and tolerances activity is being increased by $223,800 to provide increased support for the conditional registration process. The pesticides enforcement grant program is being reduced by $830,000. The pesticides use management activity is being decreased, primarily to reflect a transfer of certification and training resources to the pesticides enforcement activity.

The health and ecological effects activity is decreased by $3.3 million primarily to shift resources to toxic substances health activities where common needs exist for such things as certain analytical testing methodologies, equipment, and toxicological testing methodologies; and to reflect a redirection of activities to engage in pesticide exposure assessment research that will determine the concentrations of pesticides to which organisms and populations are exposed. A new program, exposure assessment, is funded by an increase of $787,500 and will be utilized to develop methodologies for exposure assessment and to conduct exposure analyses on 20 Office of Pesticides Program designated pesticides in fresh water, marine, and terrestrial environments.

The industrial processes activity is being decreased by $986,000 due to co-funding of a project with USDA-Science and Education Administration.

2. Changes from Original 1980 Budget Estimate

Changes from the Budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$62,250
Congressional increases/decreases:	
Travel.....	-133
ADP.....	-11
Supplies and Expenses.....	-12
Integrated pesticides management multicrop experiment.....	+2,500
Mosquito control research.....	500
Pesticides applicator training.....	+1,750
Reprogramming for salary costs.....	+62
Proposed pay raise supplemental.....	+1,216
Miscellaneous reprogramming.....	+34
Current estimate 1980.....	68,156

The Congress reduced Agency travel costs and supplies and expenses by $2 million each. This resulted in a decrease of $133,000 and $12,000, respectively. A congressional reduction of $1 million to ADP costs created a decrease of $11,000 to this media. The Congress increased the pesticides media for an IPM multicrop experiment, $2.5 million; for mosquito control research, $500,000; and for pesticides applicator training, $1,750,000.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $62,000 for this media. The proposed pay raise supplemental to partially fund the October 1979 pay raise will increase the pesticides media by $1,216,000.

Miscellaneous reprogrammings resulted in transfers to the air media, $51,100; to the solid waste media, $30,000; to management and support, $105,000; from water quality, $100,400; from the drinking water media, $42,200; from the noise media, $6,000; from radiation, $6,700; from the toxic substances media, $16,700; and from the interdisciplinary media, $50,000.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$70,240	$67,255
Effect of congressional changes	+2,768	...
Effect of pay raise supplemental	+1,216	...
Change in amount of carryover funds available	-3,065	+901
Program changes	-4,000	+5,000
Effect of reprogrammings	+96	...
Change in rate of obligations	...	...
Total estimated obligations	67,255	73,156
(From new obligation authority)	(66,000)	(71,000)
(From prior year funds)	(1,255)	(2,156)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The congressional changes referred to in the previous section are estimated to increase obligations by $2,768,000. The partial funding of the October 1979 pay raise through a proposed supplemental is expected to increase obligations by $1,216,000.

The amount of carryover funds estimated to be obligated in 1980 is $1,255,000, a decrease of $3,065,000 from the 1979 level. In 1981, it is estimated that $2,156,000 will be obligated from carryover funds, an increase of $901,000 over the 1980 level.

The program change in 1980 was previously estimated to result in a decrease of $4 million. In 1981, the program increase is expected to increase obligations by $5 million.

PESTICIDES

PROGRAM LEVELS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase+ Decrease - 1981 vs. 1980
Registration Standards					
Registration Standards completed	1*	47	10-20	20-40	+ 10-20
RPAR Decisions:					
Final RPAR Decisions	15	20	15	15	----
Lab Audits	33	70	25-35	25-35	----
Registration					
New Chemical Registrations	17	32	15-22	15-22	----
Old Chemical Applications	1,457	3,340	5,330	5,330	----
Amendments and Supplemental Applications	22,978	29,600	22,240	22,240	----
Reregistrations	---	1,440	0-500	3,000-10,000	+3,000-9,500
Special Registration					
Emergency Exemptions	285	260	350	350	----
Experimental Use Permits	176	240	240	240	----
24 (c) State Registrations	1,086	1,500	1,200	1,200	----
Tolerances:					
Tolerance Petitions	137	135	160	160	----
Amendments	110	125	150	150	----
Inert Ingredient Requests	9	60	40	40	----
Enforcement:					
Establishment Inspections	3,910	1,860	4,105	4,300	+195
Use/Reentry and Experimental Use Observations	7,588	3,795	7,970	8,350	+380
Market place Investigations	9,635	4,660	10,100	10,600	+500
Import Investigations	215	190	200	200	----

* Completion of prototype

PESTICIDES

Health and Ecological Effects

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs 1980
		(dollars in thousands)			
Health Effects:					
Salaries and Expenses...	$2,912	$4,035	$4,135	$2,439	-$1,696
Research and Development	2,617	1,703	1,712	321	-1,391
Ecological Effects:					
Salaries and Expenses...	1,992	1,975	2,386	2,178	-208
Research and Development	609	585	301	244	-57
Exposure Assessment:					
Salaries and Expenses...	...	...	...	404	+404
Research and Development	...	...	...	384	+384
Total:					
Salaries and Expenses...	4,904	6,010	6,521	5,021	-1,500
Research and Development	3,226	2,288	2,013	949	-1,064
Grand Total.....	8,130	8,298	8,534	5,970	-2,564
Permanent Positions					
Health Effects.....	80	72	71	31	-40
Ecological Effects....	48	52	57	49	-8
Exposure Assessment	...	...	...	11	+11
Total	128	124	128	91	-37
Full-time Equivalency					
Health Effects	104	100	99	43	-56
Ecological Effects....	63	72	86	75	-11
Exposure Assessment...	...	...	...	11	+11
Total.....	167	172	185	129	-56

Budget Request

In 1981, the Agency requests $5,970,400 and 91 permanent workyears for this program, of which $5,021,200 is for the Salaries and Expenses appropriation and $949,200 for extramural purposes under the Research and Development appropriation. This represents a net decrease of $2,563,500 and 37 permanent workyears; decreases of $1,499,100 and $1,064,400, respectively. Included in this net decrease are several actions: a decrease of $3,086,900 and 40 permanent workyears in the health effects area and a decrease of $264,100 and eight permanent workyears in the ecological effects program. There is an increase of $787,500 and 11 permanent workyears for exposure assessment, a new program

which will provide specialized information on exposure estimation and testing methodologies on pesticides for risk assessment under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Program Description

The pesticide health effects research program addresses three major areas: 1) the assessment of human exposure methodologies and the development of suitable human exposure protocols which can be applied by industry; 2) the assessment and generation of data to predict and document the public health impact of biological pest control agents (biorationals); and 3) the continued evaluation of carcinogenicity and other toxic effects of pesticides through screening tests and animal toxicology studies.

The pesticdes ecological effects program conducts research to determine cumulative ecological impacts of pesticides on target and non-target organisms, and, through this role, supplies technical support to the registration/reregistration processes. The program also evaluates the impact of pesticides being considered as substitutes for pesticides whose registrations are not being renewed; develops and validates new toxicological and analytical methods; and provides technical support to the Office of Pesticides Programs (OPP), the enforcement program, and the regional offices to aid in administrative decision-making under FIFRA.

The ecological effects research program has two components: (1) the study of the ecological effects of pesticides in general; and (2) the determination of the ecological effects of specific candidate substitute pesticide chemicals. The general ecological effects portion of the program deals with the determination of fate, transport, and the effects of pesticides and substitute chemicals in estuarine, marine, freshwater and terrestrial habitats. The substitute chemical portion of the program deals with the determination of the adequacy, suitability, and availability of substitute pesticides or chemicals to act as replacements for pesticides determined to be unsuitable by the Agency. This program is instrumental in the development of testing protocols and the determination of pesticide transport and fate within ecosystems and relating this information to hazard assessments for regulatory purposes.

The pesticides exposure assessment program includes the formulation of cost-effective, standardized protocols for generating exposure concentration estimates and improved techniques for assessing the resultant human exposure to pesticides in air, water (fresh water and marine), soil, and in sediments. This will be accomplished by studies of (1) the transport, transformation, and concentration of 20 pesticides (selected by OPP) in air, freshwaters, estuaries, and coastal waters; (2) the bioaccumulation of these pesticides by biota; and (3) their leaching from soils.

HEALTH EFFECTS

1979 Accomplishments

In 1979, the program obligations totaled $5,528,800, of which $2,912,400 was expended for salaries and expenses and $2,616,400 for extramural activities. Accomplishments under this program include:

- Studies to determine skin and respiratory exposures during home and garden use of diazinon, endosulfan, and carbaryl were carried out to establish a data base for product labeling. A comparison study of diazinon exposures from different application procedures indicated exposure from garden hose sprayers was greater than from a hand pressure sprayer with approximately 90% of the exposure to the skin and less than 10% being respiratory for both application methods.

- Cooperative studies with Washington State University were carried out to evaluate hazards for agricultrual workers who re-enter apple orchards containing phosalone and phosmet residue. The results will be used to determine if the treatment-re-entry time interval is adequate.

- Guthion (an organophosphate insecticide) was studied for possible teratogenic effect in rats and mice. Although guthion produced toxic effects on the fetus when given to the pregnant female at high doses, it was not possible to show embryo toxicity at doses below the maternal toxic level. It was concluded that guthion does not present a teratogenic hazard under normal use conditions.

- The metabolism of decamethrin (a synthetic pyrethroid) was studied in both plants and animals. No toxic metabolites were found. This information will aid in the comparison of toxicities of natural and synthetic pyrethroids.

- The toxicity of the herbicide, dinoseb, was studied in the rat. The compound produced testicular pathology and inhibited sperm production at high dosage levels. The significance of this information to exposed workers will be further explored.

- Pharmacokinetic studies with two insecticides heptachlor and EPN (an organophosphate insecticide), were completed in the rat. Both compounds produce metabolites which produce a significant toxic hazard. An understanding of the pharmacokinetics is basic to the overall understanding of the safe use of the compounds.

- Teratology studies were carried out on endrin (a chlorinated hydrocarbon insecticide) in hamsters and mice. Studies were also carried out in rat and mice on maneb (a fungicide) and two substances resulting from the bodies metabolizing maneb and dacamethain. These studies were necessary to close gaps in the existing data on these pesticides.

- Studies on the neurotoxic effects of EPN (an organophosphate insecticide) and two cotton defoliants (DEF and merphos) were made on chickens to define the minimally toxic subchronic dietary dose and to elucidate the potential skin absorption. The results of the studies will aid in the hazard evaluation of the test compounds.

- Twenty-five (25) pesticide compounds were screened for mutagenic effects using gene mutation and DNA damage in bacteria and yeast as indicators. The work was performed as part of a larger effort to develop and validate new screening tests for mutagenic effects.

- The usefulness of isozymes of lactate dehydrogenase and creatinine phosphokinase as indicators of potential teratogenic effects of chemicals was evaluated. Both parameters show promise as predictors of teratogenic effects. This work will be continued in 1980.

- Toxicity tests for use in predicting human health hazard of NPV (Nuclear Polyhedisis Virus) and other new generation biological pesticides were evaluated. This work was performed as part of an ongoing program to devise an adequate safety testing protocol for biological pesticides.

- Impurity studies with technical grades of malathion and acephate (both organophosphate insecticides) showed contaminants with high mammalian toxicity. These contaminants appear to be implicated in human poisoning cases with malathion occuring in Pakistan. Representative samples of products marketed in the country have not been found to contain hazardous levels of these contaminants.

1980 Program

In 1980, the Agency has allocated a total of $5,847,400 to this program, of which $4,134,800 is for the Salaries and Expenses appropriation and $1,712,600 is for extramural purposes under the Research and Development appropriation.

The pesticides health effects program provides research information and technical assistance in support of Agency activities under the legal requirements of the FIFRA. Activities emphasize research to develop new and improved methodologies for use by registrants in establishing safety for human health of currently used and proposed new pesticides. Tests are also being carried out on specific compounds to meet regulatory needs in RPAR and other programs.

Research areas include exposure measurement and human health effects. Exposure tests are being carried out under actual field conditions to estimate human exposure. The effects studies utilize selected animal models to predict possible human health effects from pesticide chemicals.

In 1980, the program will:

- Develop and validate new methodologies for accumulating pesticide exposure data to be used in determining pesticide registration standards.

- Determine the level of exposure to pesticides by persons either occupationally or environmentally exposed.

- Determine health effects of major classes of chemical pesticides now registered by EPA. During 1980, re-testing will be carried out on approximately 20 individual compounds.

- Evaluate the health effects of selected biological pest control agents. Initial emphasis will be given to the study of insect viruses.

- Develop, validate and apply new toxicological analysis and evaluation methods which may have use in pesticide registration, application or approval.

- Improve, refine, develop, validate and apply the application of analytical chemical methods and good laboratory practices for detecting and measuring pesticides which may have adverse health effects.

- Provide technical assistance and rapid response capability in the area of pesticide toxicology to other EPA offices.

- Continue work initiated in 1979 to determine the feasibility of extrapolating human pesticide exposure data between compounds and between different exposure situations to aid in the development of regulatory testing requirements.

- Continue the on-going laboratory effort to refine, develop, and validate animal and cell culture methods for assessing the potentially mutagenic and carcinogenic effects of pesticides.

- Increase the scope of analytical chemical methods by evaluating more pesticides in a broad variety of human tissues and environmental media. Emphasis will be placed on the detection of metabolites in human and animal tissues, excreta, air and other environmental media. Analytical methods needed in exposure measurement procedures will be given priority.

1980 Explanation of Change from Budget Estimate

The net increase of $109,400 results from several actions. An increase of $118,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $5,200 and $100, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $53,700 to this activity.

A reprogramming of $50,000 was made from the interdisciplinary media, anticipatory research, to cover personnel reassignments of individuals with special capabilities as a result of the abolishment of the Criteria Development and Special Studies Division.

1981 Plan

The Agency requests a total of $2,760,500 and 31 permanent workyears for this program, of which $2,439,200 is for the Salaries and Expenses appropriation and $321,300 for extramural purposes under the Research and Development appropriation. This represents a decrease of $3,086,900 and 40 positions. The decrease reflects: the desire to strengthen exposure assessment activities outside the health research area, the shifting of resources to toxic substances health activities where common needs exist for such things as certain analytical testing methodologies, equipment, and toxicological testing methodologies, and lessening of RPAR activity. Some redirection occurred to augment other agency priority needs.

Specific activities planned for 1981:

- Conduct acute, subchronic and chronic toxicity studies for prediction of human health hazards in order to verify and increase our understanding of the results of industry sponsored studies.

- Develop in vitro and in vivo screening models for neurotoxic and behavioral effects.
- Identify reproduction dysfunction indicators which are reflective of pesticide toxicity.
- Continuing review of clinical pathology and toxicology of poisoning cases.
- Conduct toxicological evaluation generic chemicals as requested by the OPP.
- Develop methods for identification and detection baculoviruses.
- Conduct toxicological evaluation of selected biological agents.
- Determine pharmacokinetics of selected pesticides.
- Provide technical assistance to the OPP to include rapid responses to requests for hazard and risk assessment.

ECOLOGICAL EFFECTS

1979 Accomplishments

In 1979, this program obligated $2,601,300, of which $1,992,100 was for inhouse expenses and $609,200 for extramural expenses. During 1979 the program:

- Developed techniques for determining the aquatic hazards of encapsulated or slow release pesticides as compared to standard technical grade pesticide materials. Generated toxicity data and collected information to determine how long effective concentrations of two insecticides, methyl-parathion and Dursban, persist in the environment.
- Conducted fresh water micro-ecosystem studies in which the sensitivity of aquatic communities was compared to the sensitivity of single species in standard toxicity tests. Several important differences were observed that cannot be detected in single species tests.
- Obtained acute and chronic aquatic toxicity data for several pesticide compounds of imminent concern to the Office of Pesticide Programs.
- Issued results of a terrestrial microcosm studies indicating that ninety percent of the radioactive material was accounted for. Broken down, it was found that 55 percent was in soil, 30 percent in plants, and 5 percent in other components of the system. Such partitioning values are important in determining the amounts of pesticides degraded or which may enter other environmental food chains or habitats. Rodent test animals contained sixty times more material per unit mass than soil. The results relate well to chemical behavior in the natural environment.

60-531 O - 80 - 53

- Conducted studies and published "Soil Core Microcosms - A Potential Screening Tool." This effort was to evaluate the suitability of soil core techniques to examine organic chemical materials (e.g. Hexachlorobenzene, 2,4,5 - T, methyl-parathion and Dieldrin). Results show that the majority of these chemicals remain in the top 2 centimeters of soil and that 2,4,5, - T had no effect on soil nutrient losses. The other pesticide chemicals showed slight effects at low treatment levels.

- Studied the disposition of four fungicides (pentachloronitrobenzene, pentachlorophenol, hexachlorobenzene and captan) in terrestrial microcosm chambers and compared the results to the reference compound Dieldrin. Results were published in a report titled "Fate of Selected Fungicides in a terrestrial Laboratory Ecosystem." Captan and PCP degraded rapidly in soils and plants. The majority of all the test materials was found in soil except for captan which volatilized. With the exception of HCB and Dieldrin, little ecological magnification occurred.

- Tested pesticides for toxicity to marine organisms including several insecticides Pydrin, Permethrin, Bolero, Fentrifanil, Larvin, Dursban, and Bux. Pydrin and Permethrin were found to be highly toxic to most estuarine biota. Pydrin, Permethrin and Dursban were tested for persistence in estuarine sediments and water and results compared with other pesticides' persistence values.

- Conducted chronic tests using Mysid shrimp which show that the insecticide, endosulfan, reduced both survival and reproduction rates.

- Tested macrobenthic animal communities against the pesticide Trithion. Trithion had no significant effect on the total number of individuals and species inhabiting sand. Trithion was bioaccumulated in the clam and thus could enter the human food chain.

- Measured the toxicity, bioconcentration and presistence of the pesticides acephate, methyl parathion, phorate, aldecarb, carbophenothion, and ethoprop in bioassays (acute and chronic tests) using various marine species.

- Conducted studies which show that chlorination by-products in seawater may be accumulated in oysters and may pose a treat to humans.

- Completed acute static 96 hour tests of creosote on fish and shrimp which revealed that a number of sublethal effects were possible.

- Investigated pentachlorophenol, a biocide, and found that it is biodegradable but may require a combination of organisms acting in concert in order to carry out the degradation process.

- Conducted studies dealing with the adsorption/desorption equilibria of Kepone in sediments which show that partition coefficients are dependent upon sediment concentration. This effect is similar in occurrence to other organic chemicals, heavy metals and radioactive substances adsorbing to clays, soils and sediments.

1980 Program

In 1980, the Agency has allocated a total of $2,686,500 to this program, of which $2,385,500 is for the Salaries and Expenses appropriation and $301,000 is for extramural purposes under the Research and Development appropriation.

The 1980 research program will continue studying particular compounds of interest to the Agency's regulatory and enforcement offices. Emphasis is being given to the development, standardization, and validation of methods to be used in assessing the environmental exposure and effects of pesticides. These tests include acute, chronic, bioaccumulation, community, behavioral and microbial effects methodologies. The development of terrestrial, marine and freshwater test systems and microcosms is continuing. Specific protocols for pesticide types are being developed and procedures validated through intra-laboratory comparative testing. New methods are being developed to determine the environmental effects of newly developed but characteristically different pesticides. Emphasis is also being directed toward the measurement of the effects of pesticide exposure to aquatic and terrestrial organisms, populations and ecosystems. A data base for important pesticides will be developed for use by the OPP in establishing generic standards for pesticides, RPAR procedures, etc. Specific protocols for effects assessment are being developed.

Major efforts are also being made toward the measurement of the concentration, duration, and timing of environmental exposure to pesticides. Results from this research will be integrated with the effects information into a hazard assessment for each compound or class of compounds.

The following are some of the specific activities planned for 1980:

- Develop a protocol for assessing hazards to non-target fish and wildlife from applications of pesticides on farmlands, forests, lawns, and other sites and insure that the protocol can be transformed to data requirements for industry.

- Test RPAR pesticides and suggested RPAR alternatives (representing families of pesticides) to determine "no effect" levels on terrestrial and aquatic indicator plants and animals, as well as expand RPAR and alternates tested to include "no effect" levels on communities and in microcosms. Pesticides will be selected in cooperation with the OPP either by using the RPAR process or by assessing available data and proposing research to fill identified gaps.

- Develop a protocol to determine transport, fate, and transformation related to effects assessments in the terrestrial, freshwater, and marine environments.

- Continue the development of fate and transport protocols.

- Review data and identify knowledge gaps for hazard assessments. Conduct laboratory tests on ecological effects of additional RPAR compounds. Provide synthesis of fate and effects data into hazard assessment model.

- Expand development of protocol work on experimental environments or microcosms and microbial effects.

- Expand quick screening tests for mutagenicity, teratogenicity, carcinogenicity in aquatic organisms caused by specific pesticides.

- Study the effects of alternate methods of pest control (viruses) on aquatic arthropods.

1980 Explanation of Change from Budget Estimate

The net increase of $126,500 results from several actions. An increase of $89,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $3,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $46,100 to this activity.

A reprogramming of $93,800 was made from between media within the Office of Research and Development, as a result of the reorganization of the programmatic functions of the Corvallis and Las Vegas labs after 1979 RIF.

A reprogramming of $38,000 was made from the water quality media from freshwater ecological effects to reflect the reassignment of an employee as a result of the overall cut in positions at the Duluth lab. A reprogramming of $41,000 was made to the management support media to lab support for lab maintenance costs due in part to the increasing costs of energy. A reprogramming of $5,000 was made to the toxic substances media for toxic substances transport and fate to help cover the cost of a symposium on the state of the art of the use of lab rate data in predicting environmental fate of new chemicals.

1981 Plan

The Agency requests a total of $2,422,400 and 49 permanent workyears for this program, of which $2,178,100 is for the Salaries and Expenses appropriation and $244,300 is for the Research and Development appropriation. The net decrease of $264,100 and eight permanent workyears reflects a redirection of activities to engage in pesticide exposure assessment research that will determine the concentrations of pesticides to which organisms and populations are exposed. This will allow a more complete analysis of risk/hazard potentials.

The 1981 research program is directed toward commonly used pesticides and their metabolites, new generation pesticides, and substitute or alternative pesticides which are, or may be used, in various environments. Studies will focus on a variety of trophic levels and investigations will range from effects assessment on the simplest planktonic organisms to complex aquatic and terrestrial ecosystem interactions. Toxicology studies will be carried out to obtain dose/response functions for varying durations of exposure in samples of single species.

Studies will be conducted regarding the potential pesticide effects on species populations and on population/community structures. At the most complex level, determinations will be made on how pesticides can affect entire ecosystems, i.e., how pollutant stress can alter the structure and dynamic functional interrelationships among the ecosystem's many components.

Activities will continue the development, refinement and utilization of experimental methods and techniques to study and evaluate pesticide impact on biotic and abiotic components in estuarine, marine, freshwater and terrestrial habitats. This includes rapid screening tests, bioassays and analytical capabilities as well as complex microcosms. These testing systems allow experimentation under controlled conditions and form a basis for developing testing protocols which will be used in future laboratory evaluations by both public and private sector investigators.

Other projects will include tests on the lethal and sublethal effects of pesticides on organism growth and development. Investigations will determine the life stages of representative organisms which are most sensitive to various compounds and/or their degradation products as well as the effects of pesticides on reproduction, viability of succeeding generations and potential behavioral effects. Validation of laboratory studies will be carried out via field conformation efforts and where applicable risk/hazard assessments will be documented.

Specifically, this research program will:

- Test chemicals undergoing the RPAR review process, as well as RPAR-alternate, generic standards and other specific pesticides with appropriate aquatic and terrestrial organisms as requested by the OPP. For each chemical tested this includes (1) assistance in determining gaps in scientific knowledge, selection of test organisms and specific life cycle tests, (2) conducting bioassays on approximately 20 compounds, (3) interpreting and assessing bioassay and chemical residue data in relation to hazard assessment and (4) serving as an expert witness as required.

- Continue to evaluate existing aquatic and terrestrial test methods to insure the Agency maintains state-of-the-art status in the testing program to determine relationships between short-term and chronic tests as well as relationships between freshwater and marine species. Alternate test species for existing aquatic tests will also be developed.

- Develop tests and supportive data to permit maximum extrapolation from laboratory tests to the environment at a minimum cost. Develop methods necessary to conduct acute and chronic avian toxicity tests.

- Generate data on effects of specified compounds on fish and wildlife. Approximately five chemicals will be tested. In addition, 12 chemicals of choice will be used in avian toxicity tests.

- Participate in development and refinement of "good laboratory practices."

- Provide analytical chemical support concerning effects assessment and methods development.

EXPOSURE ASSESSMENT

1981 Plan

The Agency requests a total of $787,500 and 11 permanent workyears for this program, of which $403,900 is for the Salaries and Expenses appropriation and $383,600 for extramural purposes under the Research and Development appropriation. This is a new program prepared to meet a high priority need of the Office of Pesticides Program (OPP). The resources will be utilized to develop methodologies for exposure assessment and to conduct exposure analyses on 20-OPP designated pesticides in fresh water, marine, and terrestrial environments. Work will also be carried out to provide some improved and standardized protocols for studies of the fate of pesticides for possible inclusion in the pesticide registration guidelines.

The program will be concerned with:

- The transport and tranformation of pesticides in marine and terrestrial environments: Data on the concentration of eight pesticides and their degradation or metabolic products in these environments will be generated. From these data, laboratory methods will be developed for estimating potential exposure to pesticides and improved protocols for testing the transport and transformation, including bioaccumulation of pesticides in the marine evironment. The improved protocols may be incorporated into the pesticide registration guidelines.

- The concentration of pesticides in areas where they are applied and in surrounding sediments, soils, plants, and animals: The volatilization, photolysis, hydrolysis, and microbial degradation of the 20 pesticides selected by OPP will be studied. The results will be used to develop improved protocols for conducting such studies and serve as basic information for the OPP risk analyses.

- The establishment of a Pesticide Environmental Exposure Assessement Team (PEEAT): PEEAT will involve several EPA laboratories and is intended to provide highly specialized technical assistance to OPP on estimates of potential human exposure to pesticides in air, freshwater (surface and ground), coastal waters, soil, sediment, plants and fish and other animals.

PESTICIDES

Industrial Processes

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Integrated Pest Management:					
Salaries and Expenses	...	...	$26	$117	+91
Research and Development	$4,091	$900	3,860	2,783	-1,077
Grand Total	4,091	900	3,886	2,900	-986
Permanent Positions					
Integrated Pest Management	...	...	...	...	...
Full-time Equivalency					
Integrated Pest Management	...	...	...	...	...

Budget Request

The Agency requests a total of $2,900,000 for 1981, a decrease of $986,000 from 1980. Included in this total is $117,000 for the Salaries and Expenses appropriation and $2,783,000 for extramural purposes under the Research and Development appropriation, with an increase of $91,000 and a decrease of $1,077,000, respectively. There is a net decrease of $986,000 from 1980 to 1981. However, due to the $1,000,000 cut in the 1981 program and the co-funding of the "15 University IPM Consortium" project with USDA-Science and Education Administration, there is an increase of $514,000 in available funds. This increase will assure that IPM mosquito control strategies are integrated into holistic rice production IPM pest control programs.

Program Description

The integrated pest management research program is authorized under Section 20 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The objective of this program is to reduce dependence upon chemical pesticides by providing economically acceptable alternative pest controls for agricultural and urban pests. Such alternatives would be equal in efficacy to current methods and be able to be implemented with reasonable ease. The program is designed to couple ecological and biological information with economically acceptable practices to keep insect or plant pest populations at levels that do not cause economic hardship to the producer or urban dweller.

This program supports the Agency's policy to minimize the exposure of chemical pesticides to humans and the environment. The principal objective is the development of alternative control strategies that utilize a holistic or total systems approach. Research is conducted to enlarge the basic knowledge of major managed ecosystems. This knowledge is then used for the development of ecologically-oriented past management systems for

agricultural and urban areas. These systems are designed to hold pest populations below agricultural crop damaging densities and below economic threshold levels in urban situations; they are less energy dependent, optimize economic returns to producers and society, and minimize adverse effects on the environment.

Large acreage crops with heavy pesticide usage currently receive the major attention. This research program is developing Integrated Pest Management (IPM) control strategies for cotton, alfalfa, apples, soybeans, corn, and the control of mosquitos in rice production systems through three multi-university research consortium projects. Each consortium project is being closely coordinated and integrated with related IPM research and extension activities within the USDA Science and Education Administration (SEA).

The strategy of research is similar for all crops. Major insect weed and disease pest are identified for intensive study. For each crop, insect population dynamics, and biological and ecological influences, are carefully determined and their interactions with the plant community are identified. The effects is natural field control mechanisms such as predators, temperature, moisture, diseases, and similar controls are identified and studied. The research information is incorporated into mathematical models so that control tactics and control strategies may be developed for a range of situations in each crop system.

Close working relationships are maintained by the EPA program staff with the researchers and in turn with the agricultural experiment stations, extension service agents, farmers, and other pesticide applicators who ultimately implement the research findings. Integrated pest management strategies have been successfully demonstrated in a number of field studies arising from EPA sponsored research.

The distribution of research findings and technology transfer are necessary steps in the research program. In addition to publication in the scientific and popular literature, seminars and workshops are sponsored to meet these needs. In a pilot program in one State, farmers may phone their county extension service agents to obtain computer based, up-to-date recommendations for pest control for their specific location.

The use of pesticides within and around homes and urban work places is of continuing concern especially when people, unaware of the danger, are in close proximity to potentially hazardous pesticide compounds. To combat this, an urban IPM program has been structured to investigate alternative controls for pests found in and around urban structures. Improved sanitation coupled with trapping and the use of predator insects is the present emphasis of the program. Information is also being gathered on pesticide use practices and social attitudes regarding pests and pest management in urban situations. Research activities are closely coordinated with the technology transfer activities to assure that the latest results are available. The short-term strategy is to support the transfer of readily available technology and to identify research needs. Identified needs will be prioritized and investigations started to provide data needed to develop comprehensive urban IPM strategies.

INTEGRATED PEST MANAGEMENT

1979 Accomplishments

In 1979, the program utilized $4,091,300 of which $400 was for inhouse expenses and $4,090,900 was for extramural expenses.

The second year of a 4-year study on, "IPM Systems For Corn Soil Insects" was completed. Research showed that black cutworm pheromone trap catches will be useful as an early warning system by being able to predict when the cutworms reach the life stage that causes damage to the corn plant. Significant progress is also being made on determining the black cutworm economic damage thresholds.

New techniques being investigated for controlling corn rootworms include new chemicals, preventative planting time treatments vs. curative cultivation time insecticides, and the influence of tillage operations and crop residues on the effectivenss of insecticides.

A new wireworm sequential sampling approach was developed that will allow growers, pest management personnel, and researchers the flexibility of selecting risk levels for making decisions regarding planting time applications of insecticides for the reduction of crop damage. Additional research will validate the sequential sampling approach during the last two years of the study.

A farm level decision model is being developed that addresses the questions that growers face regarding the control of cutworms and rootworms. Data collection on corn yields, pest control practices, weather factors cultural practices and infestation levels is underway and will be used to validate the models.

Control methods for the "imported" fire ant utilizing chemical, physical, and biological control techniques were developed and evaluated in a three-year study completed in 1979. Mound knockdown plus spot treatment procedures offer promise for mechanized fire ant control.

A strategy of insect control was developed which utilized a defined mixture of pheremone components for a complex of closely-related apple pests. This strategy should be applicable in pest management programs now underway in New YorK apple orchards.

The EPA provided direct financial support for the 9th International Congress of Plant Protection and for a 2-day working conference on Pest Control Strategies for the Future.

Two congressionally mandated IPM research projects were initiated in 1979. The "15-University IPM Consortium" project will develop IPM strategies for cotton, alfalfa, apples and soybeans. This project was initially funded in 1978 for the purpose of developing the final 5-year research program and to begin research studies. A communications and coordination mechanism was developed to assure close working relationships between EPA, USDA-SEA, and the "15-University IPM Consortium." Work continued during this transition year to develop control techniques for the four crops (cotton, alfalfa, apples and soybeans).

The "Mosquito-Riceland IPM Consortium" project was initiated in 1979. This 5-year project will develop strategies optimizing nonchemical approaches to managing mosquito populations in freshwater irrigated cropping systems using the riceland agroecosystem as a model. This project is also being closely coordinated with USDA-SEA.

1980 Program

In 1980, the Agency has allocated a total of $3,886,000 to this program, of which $26,000 is for the Salaries and Expenses appropriation and $3,860,000 is for extramural purposes under the Research and Development appropriation. This level of funding will permit the continuation of the three large consortium projects.

The second year of the "15-University IPM Consortium" project is being funded to develop alternative nonchemical methods of pest control; methods for using chemical pesticides in a more selective, judicious, economical and environmentally compatible manner; computerized integrative models for optimizing crop management and pest control practices; economic analysis of each new crop-pest management program; identification and characterization of new agents for pest control; basic studies on pest population dynamics, interactions of pests with hosts and natural enemies, dispersion and migration, dormancy, behavior, and biotic and abiotic factors affecting survival and rates of increase; training of pest management specialists and decision-makers; IPM demonstration areas in cooperation with extension personnel to illustrate the practicality and economic benefits of IPM to farmers; and optimal crop-pest management systems.

The second year of funding for the "Mosquito-Riceland IPM Consortium" project will aid in developing alternative nonchemical methods of riceland mosquito control; methods for using chemical pesticides in a more judicious, economical, and environmentally compatible manner; efficacy and safety tests on new pesticides being proposed for mosquito control; nonchemical approaches for riceland mosquito control; survey and prediction technology; computerized integrative models for forecasting mosquito outbreaks and for optimizing the effectiveness of mosquito control strategies; economic analysis of mosquito management strategies; training of pest management specialists and decision-makers; and training of farmers and the general public will be accomplished by using workshops and demonstration areas being used in conjunction with extension personnel to illustrate the efficiency of the IPM approach to mosquito management in the riceland ecosystem. The importance of controlling riceland mosquitos lies in both the direct effects on the healthy well-being and human and l vestock populations resulting from the pestiferous biting and their indirect role as vectors for disease causing agents of man and his domestic animals.

The final year of "IPM Systems for Corn Soil Insects" is being funded. New IPM control tactics are being demonstrated for the black cutworm, corn rootworm, and wireworms. Decision making models coupled with economic studies will be available for growers to use. During 1980, this project will be coordinated with the new USDA-SEA regional IPM program that have identified the corn crop production system as a high priority. Future research in this area will be expanded in cooperation with USDA to develop total IPM systems for all pests (weed, insects, diseases) of corn.

The second year of a 3-year project on the biological control of aphids in urban shade trees is being funded. EPA is developing a comprehensive urban IPM research and demonstration program for major urban pests, including structural pests, lawn and garden pests and parks, trees and other right-a-way pests. This project is also being closely integrated with the new USDA-SEA regional IPM programs that have identified urban IPM as a high priority.

1980 Explanation of Change from Budget Estimate

The net increase of $2,986,000 results from several actions. A congressional increase was made for the integrated pest management multicrop experiment, $2,500,000, and mosquito control research, $500,000.

A reprogramming of $14,000 was made to management and support to lab support for lab maintenance costs due in part to increasing costs of energy.

1981 Plan

The Agency requests a total of $2,900,000 for this program, of which $117,000 is for the Salaries and Expenses appropriation and $2,783,000 is for the Research and Development appropriation. The net decrease of $986,000 does not present a cut in the actual research to be performed, since the "15-University IPM Consortium" will be jointly funded by EPA and USDA-SEA; both agencies have requested $1,500,000 for funding the third year, which is estimated to cost $3,000,000 total.

During 1981, EPA and USDA-SEA will continue the joint communications and coordination mechanism implemented in 1980 which will assure that EPA research and implementation programs are fully integrated with SEA's IPM research, extension and education program. The "15-University IPM Consortium" project will utilize a joint EPA-USDA technical guidance and oversight review team to assure that this project is fully integrated with the USDA-SEA regional IPM programs which are being developed.

The third year of the "Mosquito-Riceland IPM Consortium" will be funded. Joint project management and review will be continued to assure that IPM mosquito control strategies are integrated into holistic rice production IPM pest control programs.

An expanded urban IPM research program on urban pests, including technical assistance and demonstrations will be supported. An extension and education plan based on the results will be developed in cooperation with USDA-SEA.

Documentation of the environmental benefits and reduced human exposure of pesticides from implementing IPA crop ecosystem strategies is a high priority. In cooperation with USDA, multi-crop multi-pest regional IPM demonstrations will be conducted. These studies will demonstrate the benefits to producers and users of IPM strategies. Economic studies coupled with predictive models will assist producers in making pest control decisions.

The remainder of the IPM program will provide support for (1) special pest problems like the fire ant; (2) planning and support of USDA-SEA regional IPM programs; (3) technology transfer activities; and (4) in-house program support.

PESTICIDES

Monitoring and Technical Support

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Quality Assurance:					
Salaries and Expense.....	407	270	500	517	+17
Research and Development.....	85	170	48	48	...
Grand Total.....	492	440	548	565	+17
Permanent Positions					
Quality Assurance....	9	9	12	12	...
Full-time Equivalency					
Quality Assurance....	10	9	13	13	...

Budget Request

The Agency requests a total of $565,400 and 12 permanent workyears for 1981, an increase of $16,900 from 1980. Included in this total is $517,400 under the Salaries and Expenses appropriation and $48,000 for extramural purposes under the Research and Development appropriation with an increase of $16,900 for Salaries and Expenses. The program will continue at the 1980 level of effort.

Program Description

The objectives of the pesticides quality assurance program are to provide standarized analytical measurement systems of verified performance characteristics which are capable of generating accurate and intercomparable data of known quality, and to provide quality control materials which assure that these measurement systems continue to provide data of known quality. These controls are necessary so as to allow regulatory decisions to be made which cannot be successfully challenged based on quality of the data expressed in terms of precision and accuracy, and to assure that data used by EPA are produced above this minimal level of quality.

A repository of pesticide chemicals of known purity is maintained to supply the analytical community with suitable reference and calibration materials. Pesticide chemicals incorporated into a variety of environmental materials (biological tissues, soil, or water) also serve as reference samples for maintaining the satisfactory performance of measurement systems. Analytical supplies, rigorously examined for compliance with quality control specifications, are furnished to help the national mentoring network develop comparable data on human and environmental pesticide residues.

1979 Accomplishments

During 1979, obligations totaled $491,500. Included in this total is $406,700 for salaries and expenses and $84,800 for extramural purposes. Specific accomplishments include the following:

- Distributed pesticide reference materials to over 1,000 laboratories. Over 20,000 samples were furnished from the more than 500 compounds currently stocked.

- Conducted a 12-laboratory collaborative study of an improved method for determination of hexachlorbenzene and mirex residues in adipose tissue.

- Expanded the ongoing program of determining the stability of pesticide standard solutions to include carbamates and triazines.

- Maintained quality control of critical analytical supplies for the national network through rigorous acceptance testing program.

- Provided continual repair and calibration service support to epidemiology study laboratories, EPA Regional laboratories, and the Health Effects Research Laboratory at Research Triangle Park, North Carolina. Conducted on-site visits to two participating laboratories. Approximately 854 instruments were serviced and 13 gas chromatograph units were rebuilt.

- Established in-house certification and chemical characterization for pesticide reference standards.

1980 Program

In 1980, the Agency has allocated a total of $548,500 to this program, of which $500,500 is for the Salaries and Expenses appropriation and $48,000 is for extramural purposes in the Research and Development appropriation. Specific outputs include:

- Upgrade quality of pesticide calibration material respository through in-house certification of purity for at least 200 compounds.

- Provide pesticide reference materials to support legal measurements made by FDA and EPA.

- Complete method performance evaluation for analytical procedure for alkyl phosphate in urine.

- Continue quality assurance support of human health and epidemiological monitoring programs.

- Develop standardized protocols for biological testing of pesticides and quality control guidelines for use in biological testing laboratories.

- Develop special pesticide reference materials for toxaphene in milk, soil, and urine.

- Institute an annual meeting of pesticide residue chemists to exchange information on new techniques and analytical pitfalls dicovered through the performance evaluation.

1980 Explanation of Change from Budget Estimate

The net decrease of $108,500 results from several actions. An increase of $16,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $400. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $7,400 to this activity.

A reprogramming of $100,000 was made from pesticides registration standards to reflect a transfer of staff as a result of the reorganization of the programmatic functions of the Corvallis and Las Vegas labs after a 1979 RIF.

1981 Plan

The Agency requests a total of $565,400 and 12 permanent workyears for this program, of which $517,400 are in the Salaries and Expenses appropriation and $48,000 are for extramural purposes in the Research and Development appropriation. The increase of $16,900 reflects increased administrative costs. In 1981 the program will:

- Maintain the repository of pesticide calibration materials and improve the quality of the repository to support the legal measurement requirements of the Food and Drug Administration and Environmental Protection Agency.
- Provide the Office of Pesticide Programs epidemiology monitoring laboratories with standardized analytical support materials such as Gas Chromatography column packing, florisil, etc.
- Maintain electronics calibration and repair service.
- Develop certified pesticide calibration materials.
- Assist the Office of Pesticide Programs epidemiology monitoring laboratories in estimating the quality of their performance.
- Expand support to the Office of Pesticide Programs epidemiology monitoring laboratories by providing performance evaluations of analytical systems through "unknowns" analysis.
- Perform an on-site inspection to evaluate the adequacy of instrumentation and capabilities of the Office of Pesticide Programs epidemiology laboratories' monitoring activities.
- Expand the scope of available analytical tools and calibration materials to address high priority pesticides.
- Add pesticide metabolites and environmental breakdown products to the pesticide repository.

PESTICIDES

Registration and Tolerances

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Appropriation					
Registration:					
Salaries and Expenses..	$4,179	$4,419	$7,391	$6,876	-$514
Abatement, Control and Compliance.....	2,653	3,831	103	709	+606
Special Registration:					
Salaries and Expenses..	2,100	1,241	2,001	1,869	-132
Abatement, Control and Compliance.....	277	380	27	273	+246
Tolerances:					
Salaries and Expenses..	1,569	1,128	1,820	1,848	+28
Abatement, Control and Compliance.....	109	1,191	166	166	...
Total:					
Salaries and Expenses..	7,848	6,788	11,212	10,593	-619
Abatement, Control and Compliance.....	3,039	5,402	296	1,148	+852
Grand Total.....	10,887	12,190	11,508	11,741	+233
Permanent Positions					
Registration.....	156	235	222	222	...
Special Registration....	84	66	62	62	...
Tolerances.....	74	60	57	57	...
Total.....	314	361	341	341	...
Full-time Equivalency					
Registration.....	162	245	246	245	-1
Special Registration....	82	84	68	69	+1
Tolerances.....	70	67	67	67	...
Total.....	314	396	381	381	...

Budget Request

The Agency requests a total of $11,740,900 for 1981, an increase of $233,800 over the current 1980 estimate. Included in this total is $10,592,600 for Salaries and Expenses and $1,148,300 for Abatement, Control and Compliance, with a decrease of $618,400 and an increase of $852,200, respectively.

Program Description

The focus of this program is on the registration and special registration of pesticides and on the establishment of residue tolerances for each registered product.

Since 1947, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) has been the primary vehicle for regulating pesticides. Until 1972, the law was focused on the proper labeling of pesticide products shipped in interstate commerce. In 1972, however, P.L. 92-516 strengthened the law considerably, changing it from a labeling law to a comprehensive regulatory statute. The 1972 Amendments reflected the public concern about potential adverse health impacts of pesticides only then becoming apparent, the need to adequately assess the "reasonableness" of the risks posed by these products and to permit continued sale and use of those products found not to pose unreasonable risks. P.L. 92-516 charged EPA with the responsiblity not only for requiring adequate premarket data review of new products, but also for reexaminig previously registered products, and reregistering those which continue to meet today's safety standards.

The Agency encountered numerous obstacles in attempting to carry out the registration responsibilities imposed by the 1972 law. Registration came to a near standstill due to ongoing litigation over use of one company's data by another, and because for many products data sufficient to meet today's data requirements had not yet been generated. At the same time, however, the law allowed earlier-registered products, identical to those for which registration is now sought, to remain on the market pending reregistration, giving rise to a "double standard" among manufacturers of like products. The 1978 Amendments to the FIFRA recognized the inequities of the previous system, and permitted some far-reaching changes in the registration program which have simplified the regulation of pesticides in this country.

The new law incorporated several important amendments which build upon the major areas covered by previous laws, including registration of pesticides to prevent unreasonable hazards to humans or the environment. Registration (premarket clearance) of pesticides is a comprehensive process designed to help ensure the safe and effective use of pesticides. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), all pesticides legally marketed in the United States must be registered by the Agency.

Under the new law, the EPA is authorized to develop generic pesticide standards for each pesticide active ingredient encompassing all of its approvable formulations and uses. In the past, registration entailed an examination of the risk of each product, one at a time. However, generic registration of pesticides entails a single, comprehensive evaluation of risks and benefits of the technical material common to numerous products based on all data relevant to the registration decision. The new system will demand less time and money both from EPA and the registrant.

Development of pesticide generic standards will take time and until such standards are developed and the complete new reregistration program is put in place, Congress has authorized a program for EPA to grant conditional registrations. Conditional registration will allow EPA to process applications for registration of new products which are like ones already registered without additional data, and thus permit the new products to enter the market on an equal footing with others already registered and in turn provide consumers with a wider range of comparable products. Utimately, all products will be reviewed comprehensively when reregistered under generic pesticide registration standards.

New uses of "old" chemicals and new chemicals will also be eligible for conditional registration if EPA determines that enough information is available to evaluate unique hazards that may be posed by the new uses. The Agency is also authorized to issue conditional registration of new chemicals if the public interest would be served by a registration, and if risks during the period required to complete and submit additional studies are not unreasonable.

In the future, conditional registration will be useful for allowing time to meet new data requirements or in some special cases, for permitting early registration of brand new chemicals.

The registration process will focus on new chemicals, new products containing previously registered pesticides, new uses and use restrictions, new formulations, labeling changes, supplemental registrations and reregistrations. Priority will be given to environmentally protective pesticides and innovative technologies.

The special registration of pesticides encompasses: (a) the issuance of experimental use permits under Section 5 of FIFRA to generate data for registration, (b) establishment of temporary tolerances to cover safe levels of pesticide residues in food and feed from pesticide use for experimental purposes, (c) granting of emergency exemptions under Section 18 of FIFRA to permit the temporary use of unregistered pesticides, (d) issuance of Section 24(c) special local need registrations, largely handled by the States with Federal oversight, and (e) issuance of minor use registrations through liaison with public interest user-oriented groups. Special registration provides data for the registration of pesticides, flexibility in responding to emergency situations, and offers support to State and local governments in registering pesticides for local use only.

Under the Federal Food, Drug, and Cosmetic Act, as amended, (FFDCA), the Agency establishes tolerance levels and exemptions from the requirement of a tolerance for pesticide residues in or on raw agricultural commodities and processed foods. These tolerance levels protect the public health while giving appropriate consideration to the necessity for the production of an adequate, wholesome, and economical food supply.

Determination of tolerances involves careful review and evaluation of residue chemistry and toxicology data to ensure the maximum residue levels likely to be found in foods are safe for human consumption. Included in this consideration is the cumulative effect of the same pesticide chemical and other related substances with the same physiological activity. Analytical methods are tested to ensure that the adequate enforcement of the established tolerance can be achieved.

EPA will implement more flexible minor use tolerance data review procedures involving data requirements and scientific decision making. This will parallel conditional registration and other newly authorized registration remedies to EPA's pesticide registration program.

Current operations give high priority to tolerance petitions, innovative pesticide chemicals and biologically integrated alternatives for pest control. Both of these Integrated Pest Management (IPM) techniques reduce the amount of conventional pesticide chemicals applied and significantly reduce environmental and human risk. In addition, fee requirements for petitions for tolerances of such products are adjusted or waived. Tolerance petitions are the only pesticide actions for which fees are charged.

REGISTRATION

1979 Accomplishments

In 1979, resources spent for the registration process totalled $6,831,800 which included $4,178,900 for Salaries and Expenses, and $2,652,900 for Abatement, Control and Compliance activities.

60-531 O - 80 - 54

Accomplishments in 1979 focused on implementation of the 1978 Amendements to the FIFRA designed to streamline the regulatory process, reduce the burdens on industry, and insure public accessibility to basic health and safety studies while closely guarding industry's property rights and rewarding innovation. In response to these amendments, the Agency promulgated regulations governing conditional registration, waivers of efficacy requirements, compensation for the use of data and registrant's responsibilities for data submission. Over 200 conditional registrations for products similar to already registered products were issued. Four brand new chemicals were granted conditional registration to combat cotton pests. In addition, 12 conditional registrations for new chemicals were granted. Over 24,000 registration actions (old chemical applications, new chemical applications, amendments and supplemental applications, etc.) were processed in 1979.

1980 Program

In 1980, the Agency has allocated a total of $7,493,300 to this program, of which $7,390,300 is for Salaries and Expenses and $103,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

In 1980, the Agency will process applications for new chemicals on a priority basis while giving special attention to new chemicals that offer an extra measure of protection to the environment. Tasks to be completed during 1980 are the processing of: applications for the registration of products that contain new chemicals both for food uses and non-food uses, 70; applications for the registration of new products that contain old chemicals, but are identical or substantially similar to those that are currently registered, 5,300; applications to amend current pesticide product labels to add uses (food and non-food), 440; applications for administrative amendments and supplemental registrations, more than 20,000; and minor amendments, 1,800. Additional tasks include the follow-up on submission and review of data as conditions for the conditional registration of products and the review of adverse effects data submitted under Section 6(a)(2) of the FIFRA.

A plan for the upgrading of labeling on currently registered products will be completed and implemented. Promulgation of the regulations and guidelines for biologicals, will be completed. Environmentally protective pesticide products and other items with review priority will be processed more rapidly.

In 1980, development of an automated system will be initated to permit tracking of applications in the registration process flow. A series of simplified instructions to help registrants apply for registration is being prepared, in order to reduce the number of applications returned to registrants for additional information, before the Agency can either register or deny an application. In addition, during 1980, most sections of the proposed Registration Guidelines will be revised and written into the final form.

1980 Explanation of Changes from Budget Estimates

The net decrease of $756,100 results from several actions. An increase of $263,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $1 million to ADP costs resulted in a decrease of $11,100.

A reprogramming of $1,008,500 was made to pesticide RPAR review to realign the program contract support for the internal analytical methodology.

1981 Plan

The Agency requested a toal of $7,584,900 for this program, of which $6,875,700 is for the Salaries and Expenses appropriation and $709,200 for Abatement, Control and Compliance.

In 1981, conditional registration of pesticide products containing currently registered active ingredients will be used extensively until pesticide generic standards are developed. The program will also highlight the registration of environmentally protective pesticides for which complete hazard data are available.

The Agency expects to process 96 new chemical applications (48 food and 48 non-food) through scientific and regulatory reviews to assess the potential hazards associated with the use of new products. Expeditious processing will be provided for environmentally protective pesticides.

Applications involving old chemicals will be processed for conditional registration of products. Conditional registration activities will be undertaken for 100 products involving a significant variation in formulation and for 5,200 products involving formulations similar to already registered products.

Applications to amend registration will focus on a number of areas. New food and non-food use applications will total 220 and 220 respectively. The Agency will process 1,800 applications for minor changes, and 4,000 adminstrative amendments. An estimated 200 products will be the subject of conditional registration follow-up actions to ensure full compliance with all conditions placed on conditionally registered products. Data reviews, under Section 6(a)(2) of FIFRA, will be undertaken for 25 data submissions to determine if any unacceptable adverse affects are expected from legal uses of registered pesticides. Supplemental registration applications are expected to total 16,000 and will be processed within six weeks of receipt.

Other accomplishments under these programs will include the development of 40 re-registration call-in packages based on generic standards. Continuing efforts will include direct dissemination of information to the farm worker and other representative groups at the Federal, State and local levels, and improved product labeling and monitoring techniques. A management information system will be developed which will permit the consolidation of specialized farm worker, pesticide use, and industry data into a pesticide data base. Suitable guidelines will be developed for evaluating the potential hazards of new pesticides to agricultural workers, along with guidelines establishing suitable reentry intervals for farm workers for treated fields. An attempt will be made to finalize scientific, technical and other data necessary for assessment of farm worker risk and to assess the most effective methods to minimize this risk.

SPECIAL REGISTRATION

1979 Accomplishments

In 1979, resources spent on the special registration process totaled $2,376,800, which included $2,099,500 for Salaries and Expenses and $277,300 for Abatement, Control and Compliance activities.

As in the case of registration, the Agency moved to implement key provisions of the 1978 Amendments to the FIFRA, particularly relating to the authority of States to issue product registration for special local needs. In light of these statutory changes, the Agency published a statement reflecting its thinking on minor use pesticide registration and tolerances. The Congress has clarified that EPA is to make minor use pesticide registration data requirements "commensurate with anticipated extent of use, pattern of use, and the level and degree of potential exposure of man and the environment to the pesticide". The Agency processed 285 emergency exemptions, 1086 State Registrations and issued 176 experimental use permits. EPA also processed 32 temporary tolerance petitions.

1980 Program

In 1980, the Agency has allocated a total of $2,027,800 to this program, of which $2,000,700 is for Salaries and Expenses and $27,100 is extramural purposes under the Abatement, Control and Compliance appropriation.

The Agency will continue the special registration program by (a) issuing experimental use permits to support registration requirements, (b) establishing temporary tolerances to cover safe levels of pesticide residues, (c) granting emergency exemptions to allow the use of unregistered pesticides and (d) providing guidance and directions to States which issue pesticide registrations and experimental use permits to meet local needs. The Agency expects to process 240 experimental use permits, 55 temporary tolerance petitions, and 350 emergency exemptions, and will review 1,200 State registrations. Agency oversight and guidance will be provided for an estimated 100 State issued experimental use permits.

1980 Explanation of Changes from Budget Estimate

The net increase of $406,600 results from several actions. An increase of $76,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a increase of $7,300 to this activity.

A reprogramming of $323,200 was made from pesticide tolerances for improvement in internal analytical methodology which identified base program contract support.

1981 Plan

The Agency requests a total of $2,142,400 for this program, of which $1,869,300 is for the Salaries and Expenses appropriation, and $273,100 is for the Abatement, Control and Compliance appropriation.

During 1981, the special registration program will evaluate in terms of risks and benefits, an expected 350 Section 18 emergency exemption requests to allow pesticides to be used to control unexpected agricultural or public health pest outbreaks, and to either grant or deny such requests as expeditiously as possible. Approximately 240 applications for experimental use permits will be evaluated each within the statutory limit of 120 days. This will allow pesticide research and development to continue for new pesticides and for new uses of currently registered pesticides. Biologicals and third-generation pesticides will be given special attention; an attempt will be made to process these within 100 days. An estimated 55 petitions for temporary tolerances, and 80 resubmissions supporting experimental use permits, will be evaluated. The Agency will review an estimated 1,200 Section 24(c) State registrations which provide for the use of a pesticide in a special local need situation within a given State, and 100 Section 5(f) State experimental use permits to allow continuing research and development of pesticides to meet special local needs.

TOLERANCES

1979 Accomplishments

In 1979, resources spent for the tolerance setting process totaled $1,677,700, which included $1,568,700 for Salaries and Expenses and $109,000 for Abatement, Control and Compliance activities.

Accomplishments during 1979 include the processing of 137 petitions, 110 amendments, and nine inert ingredient requests to establish residue levels. An estimated 400 telephone an 260 written requests for tolerance information were processed, with a written response time averaging less than two weeks.

1980 Program

In 1980, the Agency has allocated a total of $1,986,000 to this program, of which $1,820,000 is for Salaries and Expenses, and $166,000 is for extramural purposes under the Abatement, Control and Compliance appropriation.

These resources will permit the Agency to review all incoming tolerance actions to establish residue levels that will protect human health, and provide written replies (acknowledgements) to tolerance petitions within two weeks. The Subcommittee on Oversight and Investigations, Committee on Interstate and Foreign Commerce, U.S. House of Representatives, and EPA's Science Advisory Board have made recommendations concerning the tolerance-setting process. In response to these recommendations, the Agency is now actively developing proposed program changes. Once these are agreed upon, additional resources may be required. An estimated 160 new petitions, 150 amendments, and 40 inert ingredient requests will be processed. This processing includes administrative handling, coordination and data review, scientific review of data, regulatory decision making, and preparation of Federal Register notices. Replies will be made to 300 written and 450 telephone requests, including both specific congressional inquiries and general correspondence. Replies to written inquiries will average two weeks turnaround time.

1980 Explanation of Changes From Budget Estimates

The net decrease of $333,000 results from several actions. An increase of $71,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A reprogramming of $404,200 was made to pesticide special registrations ($323,200) and to pesticide RPAR reviews ($81,000) to realign the program contract support for the internal analytical methodology.

1981 Plan

The Agency requests a total of $2,013,600 for this program, of which $1,847,600 is for the Salaries and Expenses appropriation and $166,000 for Abatement, Control and Compliance.

These resources will enable the Agency to carefully evaluate chemistry and metabolism data for 160 petitions and 150 amendments to determine the nature and level of pesticide residues expected to remain in or on food crops when used according to the proposed label directions. Toxicology data for 160 petitions and 150 amendments will be evaluated to determine if foods containing these residue levels are safe for human consumption. These evaluations will also take into account the cumulative effect of the tolerances already established for the pesticide chemical and other pesticide chemicals with related pharmacological activity. Specific analytical methods will be evaluated to determine their suitability for enforcement of proposed tolerances. The Agency expects to publish in the Federal Register seventy notices establishing tolerances.

PESTICIDES

Standards Setting and RPAR

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Registration Standards:					
Salaries and Expenses..	$8,068	$3,861	$5,958	$5,592	-$366
Abatement, Control and Compliance.....	6,844	8,591	6,561	11,846	+5,285
RPAR Reviews:					
Salaries and Expenses..	5,114	2,531	4,551	4,394	-157
Abatement, Control and Compliance.....	8,218	9,514	8,961	15,266	+6,305
EIS Preparation:					
Salaries and Expenses..	154	63	82	84	+2
Total:					
Salaries and Expenses..	13,336	6,455	10,591	10,070	-521
Abatement, Control and Compliance.....	15,062	18,105	15,522	27,112	+11,590
Grand Total.....	28,398	24,560	26,113	37,182	+11,069
Permanent Positions					
Registration Standards.	158	197	183	168	-15
RPAR Reviews.....	188	135	145	145	...
EIS Preparation.....	2	3	3	3	...
Total.....	348	335	331	316	-15
Full-Time Equivalency					
Registration Standards.	194	203	200	181	-19
RPAR Reviews.....	157	158	153	152	-1
EIS Preparation.....	5	3	3	3	...
Total.....	356	364	356	336	-20

Budget Request

The Agency requests a total of $37,182,200 for 1981, an increase of $11,069,200 from 1980. Included in this total is $10,069,900 for Salaries and Expenses and $27,112,300 for Abatement, Control and Compliance, a decrease of $521,900 and an increase of $11,591,100, respectively. This level of funding will provide for the continued development of pesticide registration standards, which are crucial to improve the efficiency of future pesticide registration and reregistration activities. The budget will also permit the continuation of rebuttable presumption against registration (RPAR) actions which are necessary to properly assess the risks and benefits of compounds and to implement restrictions on compounds suspected of causing unreasonable adverse health effects. The RPAR investigative process will be made a part of the registration standards

setting system in 1981. By then, any newly suspect chemicals will enter the standards process and will be subjected to RPAR review when unreasonable adverse effects are identified. The laboratory audit program will be continued to ensure the validity of data presented by registrants in support of past, current and future registrations. Funding is also requested to implement agreements made with Silvex registrants subsequent to the Administrator's emergency suspension of the product's major uses. These agreements provide that the Agency must accept for disposal all Silvex products registered by the registrants which are voluntarily cancelled by them and delivered to disposal facilities designated by EPA.

Program Description

In order to use resources efficiently, the Agency developed a new approach to reregistration which was ratified by Congress--developing registration standards for each of the active ingredient chemicals currently used in pesticide products. This approach, however, is currently the subject of litigation which could cause redirection or major changes in the program. The uncertainties caused by this litigation and its possible impacts are described later in this section. EPA will concentrate its efforts on the approximately 500 chemicals currently used as active ingredients, which will permit decisions on the reregistration of all existing products. Many of the approximately 1,400 chemicals originally identified as discrete active ingredients are not in production or have chemical forms that allow them to be judged as a family rather than one by one.

The development of a registration standard is divided into five phases: (1) data gathering and preparation, (2) scientific review, (3) identification and analysis of regulatory options, (4) regulatory standard drafting and distribution, and (5) integration of comments and preparation of the revised standard. Several mixture and formulation standards will probably be developed for each chemical standard produced. Pesticide residue tolerances, already established under authority of the Federal Food, Drug and Cosmetic Act, will also be reviewed and respecified for each of the food or animal crops to which the chemical is applied. (The establishment of new residue tolerances is funded under the registration and tolerances subactivity). Finally, all pesticide products that use the chemical as an active ingredient and meet the specifications of the standard will be reregistered. (Reregistration, as distinguished from standards production, is funded under the registration and tolerances subactivity, as are resources for new product registrations and amendments to existing registrations). Incorporating this standard setting approach into the Agency's entire pesticides abatement, control, and compliance program will facilitate registration and reregistration actions.

Due in part to the uncertainties caused by litigation challenging the constitutionality of basic FIFRA data use and disclosure provisions, the Agency may not be able to actually produce the number of published standards planned for 1980 and 1981. While EPA believes that the legal underpinnings of the program are fundamentally sound, the delays and Agency effort associated with pending challenges are likely to affect output in the form of actual published standards. In the event, however, that litigation or other exogenous events prevent or significantly delay final publication of standards, the Agency will nonetheless continue the process of systematically reviewing the data base upon which registration of current pesticides is based. In short, the actual number of completions for both 1980 and 1981 may vary dependent upon events largely outside EPA's control. If the court rulings are not favorable to EPA, the Agency will return to the Authorization and Appropriations Committees for guidance.

Special reviews of pesticide products that are candidates for rebuttable presumptions are carried out under a program established to scrutinize chemicals which are suspected of causing undue hazards. The decision to cancel the use of any chemical or family of chemicals requires a risk/benefit determination after an in-depth review of potential hazards on a use by use basis. Public hearings are conducted, if necessary, to reach final determinations. The RPAR process includes analysis of the exposure of humans and the environment to the pesticide, including environmental impact analysis; analysis for oncogenicity, mutagenicity and teratogenicity risk; review of the benefits of the pesticide's uses; review of the possible substitutes for the chemicals; and assessment of the possible regulatory options. In 1981, the registration standards system will include the RPAR program, assuming that current litigation does not preclude the development of standards. The RPAR and registration standards systems are similar in their need to review all available data, and similar in outputs; therefore it is reasonable to combine the two in order to maximize effectiveness and efficiency.

The Agency will continue to conduct systematic audits of laboratories and the quality of laboratory studies to evaluate their impact on decision making. This is being done because of indications that there are defects in basic studies used to support pesticide registrations. These lab data validations are important to the registration, RPAR, and tolerance setting processes since reliable data is needed to proceed with actions to identify and restrict or remove hazardous pesticides from use, as well as to establish pesticide standards for streamlined registration and reregistration.

On February 28, 1979, the Administrator issued an emergency suspension, the first in the Agency's history, for major uses of the pesticides 2,4,5-T and Silvex. This action was taken due to the apparent correlation between human miscarriage and uses of these products, as well as extensive animal data. Subsequent to this and as mandated in the FIFRA, agreements were made with Silvex registrants that the Agency must accept for disposal all Silvex products registered by the registrants which are voluntarily cancelled by them and delivered to disposal facilities designated by EPA. Specific disposal activities include contracting for performance testing of disposal techniques, development of Environmental Impact Statements to cover shipment and disposal operations, cleansing and disposal of Silvex containers, securing required governmental permits, coordinating and supervising shipping and disposal operations and contracting with facility operators for actual disposal.

REGISTRATION STANDARDS

1979 Accomplishments

In 1979, a total of $14,911,700 was spent, including $6,843,600 for information services, scientific data review, and other contracts. These resources were used to gather and prepare data, to develop one registration standard as an example of the type of standards that will be produced, to gather pesticide use and usage information, to perform economic impact analyses of various regulatory recommendations, to support toxicology and chemistry data evaluations, and to evaluate health effects. The registration standard system was initiated and the initial phases were tested in 1979. Standard setting activities focused on identification and resolution of major policy issues, development of detailed internal procedures to complete the data gathering and data evaluation phases of the registration standards process, and identification of procedures to facilitate the integration of the RPAR process into the standards setting process. The data gathering phase was initiated for 28 active ingredients, and was completed for 16.

1980 Program

In 1980, the Agency has allocated a total $12,518,700 to this program, of which $5,958,400 is for Salaries and Expenses and $6,560,300 is for extramural purposes under the Abatement, Control and Compliance appropriation. The extramural resources are for information service and scientific data review contracts to support the development of registration standards.

During 1980, the system will start in earnest and the emphasis will shift from a development mode to a production mode. Using a chemical prioritizing system, work is expected to be initiated on an additional 25-40 standards, and between 10 and 20 registration standards are expected to be completed.

1980 Explanation of Change from Budget Estimates

The net increase of $66,700 results from several actions. An increase of $224,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $40,000.

A reprogramming of $100,000 was made to the Office of Research and Development within the pesticides media to implement a transfer of staff at the Corvallis lab. A reprogramming of $17,700 was made to pesticide RPAR reviews for improvement in internal analytical methodology which identified base program contract support.

1981 Plan

The Agency requests a total of $17,438,500 for this program, of which $5,592,100 is for the Salaries and Expenses appropriation and $11,846,400 for the Abatement, Control and Compliance appropriation for information services and scientific data review contracts.

These resources are expected to permit the completion of 20-40 standards started in 1979 and 1980 and the initiation of an additional 25-40 standards in 1981. Extensive extramural resources will be used to gather, evaluate, and analyze scientific data. However, the Agency may not be able to complete the planned number of standards due to the uncertainties caused by litigation attacking the constitutionality of basic FIFRA data use and disclosure provisions. In the event that litigation prevents or significantly delays completion of the standards, EPA will nonetheless continue the process of systematically reviewing the data base upon which registration of current pesticides is based. If the court rulings are not favorable to EPA, the Agency will return to the Authorization and Appropriations Committees for guidance.

The registration standard setting program will incorporate the RPAR investigative process in 1981 unless exogenous factors, such as litigation, inhibit the integration. The two systems are similar in their need to review all available data, and similar in outputs; therefore, it is reasonable to combine the two in order to maximize effectiveness and efficiency. The absorption is primarily a matter of integrating current RPAR procedures into the parallel registration standards development process and defining the exact RPAR-related outputs which the Agency will develop as part of the standards process.

REBUTTABLE PRESUMPTION AGAINST REGISTRATION (RPAR) AND EIS PREPARATION

1979 Accomplishments

A total of $13,486,600 was spent for this program, including EIS preparation; $8,218,300 was spent for contracts for information services, site/pest information, use analyses, scientific exposure/hazard assessments and risk/benefit information.

In 1979, the Agency reached substantive decisions on 15 chemicals including chlorobenzilate, BAAM, Endrin, and Benomyl, although the administrative and appellate proceedings could run on for some years. A special effort was initiated to review the RPAR process and develop new procedures and management structures to improve its efficiency and effectiveness. Major contracts for scarce risk and benefit analytical expertise were put in place in 1979. The contractors, both private and public organizations, supplemented the Agency's limited in-house specialists, e.g. toxicologists, entomologists, etc. Support for three hearings which resulted from RPAR decisions was provided.

Thirty-three (33) lab audits were performed and 190 audits were conducted on registrant validations of possibly faulty lab data. The lab audit process identified several new suspect chemicals and four labs which had significant problems. The results of the lab audit program were fed back into the RPAR and registration processes with a view toward identifying data gaps and the need for revised decisions.

After emergency suspension of Silvex in 1979, agreements were reached with major registrants of Silvex in which they agreed to request voluntary cancellation of their products and EPA agreed to arrange for disposal. The Agency initiated actions to investigate and determine the legal requirements for and quantities, location, and nature of the products to be disposed. The Agency also suspended major uses of the pesticide 2,4,5-T in 1979 and will continue to review this chemical through the RPAR process in 1980.

1980 Program

In 1980, the Agency allocated a total of $13,594,300 to this program, including EIS preparation, of which $4,633,400 is for Salaries and Expenses and $8,960,900 is for extramural purposes under the Abatement, Control and Compliance appropriation. The extramural resources are for information services, site/pest information, use analyses, scientific exposure/hazard assessments and risk/benefit information.

Substantive decisions are projected on up to 15 chemicals and 10-15 chemicals are expected to begin review under the RPAR process. In late 1980, the emphasis will gradually shift towards the later phases of RPAR action as the process is merged with the registration standards system. Support will be provided for 2 to 4 hearings resulting from RPAR decisions. Major contractual efforts will continue, and new procedures and management structures will be developed as the result of reviews of the RPAR process initiated in 1979. During 1980, a shift will occur toward the development of ecological-effects laboratory audit procedures and 25-35 laboratory audits are projected. Agency activities initiated in 1979 concerning Silvex disposal will continue.

1980 Explanation of Changes from Budget Estimate

The net increase of $1,486,300 results from several actions. An increase of $172,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $3,600 to this activity.

A reprogramming within the Office of Pesticide Programs was made from pesticide registration standards ($17,700); pesticide registrations ($1,008,500); pesticide tolerances ($81,000); and pesticide use management ($203,200), for improved internal analytical methodology which identifies base program contract support.

1981 Plan

The Agency requests a total of $19,743,700 for this program, including EIS preparation, of which $4,477,800 is for the Salaries and Expenses appropriation and $15,265,900 for the Abatement, Control and Compliance appropriation for contracts for information services, use analyses, scientific exposure/hazard assessment and risk/benefit and site/pest information. Increased extramural resources will be devoted to small mission contracts to provide additional exposure analysis, benefit analysis, and other analysis associated with risk/benefit assessments of suspect chemicals or groups of suspect chemicals.

At this level of resources, substantive decisions are expected on approximately 15 chemicals and 5-10 chemicals may be identified for review under the RPAR process as spin-offs from the registration standard reviews. In 1981, the RPAR investigations will be integrated with the registration standard development system unless exogenous factors, such as litigation concerning the standards system, hinders Agency plans. Chemicals will usually be initiated into RPAR review only when the preliminary registration standards review reveals evidence of possible unreasonable adverse effects. The process will continue to rely heavily on contractors in 1981 to supplement Agency resources. Technical support is expected to be provided to 5-9 hearings resulting from RPAR decisions. In 1981, the laboratory audit program will shift emphasis from health effects to include studies on ecological effects and chemical fate. In 1981, approximately 25-35 laboratory audits will be performed; other audit activities will include evaluating reports of registrants (whose pesticide products are supported by studies done by laboratories whose practices are suspect) and reassessing past regulatory decisions, such as tolerances, which were based on a pivotal study found to be invalid through the audit program.

In 1981, $4,000,000 is requested which will allow continuation of Silvex disposal operations begun in earlier years as these products continue to be collected from distributors and retailers by registrants. The specific disposal activities will include contracting for performance testing of disposal techniques in order to obtain disposal permits and clearances; contracting for development of Environmental Impact Statements to cover shipping and disposal operations; contracting with disposal facility operators to dispose of Silvex pesticides; contracting for cleansing and disposing of Silvex pesticide containers; securing necessary federal, state, and local permits; and coordinating and supervising shipment and actual disposal operations. The Agency may also have to accept 2,4,5-T products as well as the rest of Silvex if cancellation proceedings are completed and the final decision is to cancel some or all of the originally suspended uses.

PESTICIDES

Federal and State Program Support

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Appropriation					
Pesticide Use Management: Salaries and Expenses..	$1,802	$1,728	$1,652	$420	-$1,232
Abatement, Control and Compliance.....	3,514	1,978	3,780	...	-3,780
Total.....	5,316	3,706	5,432	420	-5,012
Permanent Positions.....	48	39	64	17	-47
Full-time Equivalency....	58	52	71	20	-51

Budget Request

The Agency requests a total of $420,000 for 1981, a decrease of $5,012,200 from 1980. The full request is for Salaries and Expenses and no funds for Abatement, Control, and Compliance. This is a decrease of $1,231,800 and $3,780,400, respectively.

Program Description

EPA is committed to ensuring that State and local governments assume a large responsibility for pesticide control programs. The Agency has been working with States in the implementation of cooperative Federal/State programs, in particular those involving the certification and training of applicators to apply restricted use pesticides. EPA believes that this will not only result in better control of pesticides and fewer accidents, but will also be more cost effective and responsive to local needs. The States are now extensively implementing these programs. EPA is also working with other Federal agencies and Indian tribes that apply significant amounts of pesticides in the development of their programs for training and certification. In order to insure necessary continuity, EPA will continue to assist the States, Federal agencies and Indian tribes in upgrading existing programs and will support Federal certification programs in Colorado and Nebraska where the States have not assumed responsibility. In 1981, these responsibilities will be undertaken by the enforcement program.

The Agency also provides information to the public and industry on activities associated with pesticide registration and conducts activities directed at educating the public on safe use practices. In accord with Section 4(c) of FIFRA, instructional materials on pest management practices, especially integrated pest management (IPM) techniques, are being distributed to the public.

PESTICIDE USE MANAGEMENT

1979 Accomplishments

In 1979, $5,315,900 was spent for pesticide use management activities of which $3,514,100 was for Abatement, Control and Compliance. Of this amount $930,000 was transferred to the Department of Agriculture Extension Service for the applicator training program. EPA has approved 47 State Certification plans which have been fully implemented. Federal certification plans have been implemented in Colorado and Nebraska and one Federal certification plan (DOD), was approved. Fifty-four (54) State training plans have been funded through USDA and are now operating. Indian certification policy has been developed and approved. A grant to the Association of American Pesticide Control Officials (AAPCO) to maintain the State FIFRA Issues Research and Evaluation Group (SFIREG) has enabled the Agency to evaluate alternatives to Federal funding assistance to the States' certification and training programs. Under a contract with the General Services Administration, all EPA pesticide mailing lists were consolidated and computerized. This has resulted in the development of 28 mailing lists containing almost 7,000 addresses.

In addition to supporting the nationwide certification and training of applicators, regional pesticide branches provided assistance to pesticide manufacturers, formulators, and distributors on all aspects of registration requirements; assisted states in the development of, and evaluated, emergency use exemptions and local use registrations; supported public health and safety needs by providing assistance with pesticide spills and fires, farm worker safety programs, poison control centers, hospitals and worker clinics; conducted pesticide accident investigations, which resulted in improved data on pesticide accidents and misuse and which will in turn be used to support registration decisions and label changes; provided technical assistance to their counterparts in the water programs to improve pesticide use practices around water; represented and disseminated information regarding the full range of Agency policies and programs to all affected governmental and private entities; and responded to congressional, public, press, and FOI requests for information.

These activities have had several major positive impacts. The certification and training program, by reaching over 1.5 million applicators, has lessened the incidence of accidental pesticide misuse. The presence of the pesticide classification/applicator certification program as a viable, relied-upon alternative to pesticide cancellation has protected agricultural production costs from further upward pressure. Finally, the information outreach program has broadened State and public understanding of pesticide issues, and has thereby facilitated implementation of the FIFRA.

1980 Program

In 1980, the Agency has allocated a total of $5,432,200 to this program, of which $1,651,800 is for Salaries and Expenses and $3,780,400 is for extramural purposes under the Abatement, Control and Compliance appropriation. Federal funding will be provided to the States for support of certification and training programs. The Federal share for this support may be up to 50 percent of program costs. A contract has been let for the evaluation of training in six States and will provide the basis for upgrading all programs.

Regional program activities have a high degree of continuity. No new initiatives are anticipated for 1980. The program will continue activities started in prior years.

1980 Explanation of Changes from Budget Estimate

The net increase of $1,726,200 results from several actions. An increase of $61,000 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $8,700 and $10,000 respectively. The Congress also provided an increase of $1,750,000 for pesticides applicator training. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $85,800 to this activity.

Regional reprogrammings in order to support projections of costs based on 1979 expenditures resulted in transfers from pesticides enforcement ($25,600); from radiation program implementation ($6,700); from drinking water underground injection control program ($22,400); to ambient air quality monitoring ($7,300); from pesticides special registrations ($19,800); to water quality municipal waste treatment facility construction ($88,600); from noise program implementation ($6,000); from toxics management ($21,700); to pesticides RPAR reviews ($203,200); and from water quality NEPA compliance/municipal waste treatment facility construction ($45,000).

1981 Plan

The Agency requests a total of $420,000 for the Salaries and Expenses appropriation.

This request reflects a major reprogramming of pesticide use management activities in which certification and training resources will be transferred to the enforcement program. This transfer will include $3,000,000 requested to operate Federal certification and training programs in Colorado and Nebraska, to provide grants in support of State certification programs, and to fund applicator training conducted by the Department of Agriculture Extension Service. This transfer is intended to strengthen the environmental benefits of the program, provide a programmatic linkage between the certification and training program and the State enforcement programs, and reemphasize the priority of implementing certification and training programs in Colorado and Nebraska along with increased enforcement in these same States. Resources remaining in pesticide use management will: maintain liaison with the Office of Enforcement on upgrading training materials to the 12th grade level; ensure dissemination of current knowledge on restricted use classification; provide assistance to the States on pesticide spills, kills, and fires; process pesticide inquiries; and conduct limited evaluation studies.

PESTICIDES

Pesticides Enforcement

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Pesticides Enforcement:					
Salaries and Expenses	$3,598	$3,406	$2,765	$3,753	+$ 988
Abatement, Control and Compliance	57	8,750	165	112	- 53
Pesticides Enforcement Grants Support:					
Salaries and Expenses	474	...	455	437	- 18
Pesticides Enforcement Grants:					
Abatement, Control, and Compliance	8,797	...	8,750	7,920	- 830
Pesticides Certification and Training Grants:					
Abatement, Control and Compliance	...	...	...	3,000	+3,000
Total:					
Salaries and Expenses	4,072	3,406	3,220	4,190	+ 970
Abatement Control, and Compliance	8,854	8,750	8,915	11,032	+2,117
Grand Total	12,926	12,156	12,135	15,222	+3,087
Permanent Positions					
Pesticides Enforcement	110	116	97	121	+ 24
Pesticides Enforcement Grants Support	6	...	14	16	+ 2
Grand Total	116	116	111	137	+ 26
Full-time Equivalency					
Pesticides Enforcement	127	124	105	137	+ 32
Pesticides Enforcement Grants Support	12	...	17	17	...
Grand Total	139	124	122	154	+ 32

Budget Request

A total of $15,220,800 and 137 permanent workyears is requested for the 1981 pesticides enforcement program. Included in this total is $4,189,200 for the Salaries and Expenses appropriation and $11,031,600 for the Abatement, Control and Compliance appropriation with increases of $969,000 and $2,116,300, respectively. The total request reflects an increase of 26 permanent workyears and $3,085,300, resulting from the transfer of the applicator certification and training program to the Office of Enforcement from the Office of Pesticides and Toxic Substances, involving an increase of $3,987,000 and 26 permanent workyears, offset in part by a decrease of $830,000 for pesticides cooperative enforcement grants.

Program Description

The EPA pesticides enforcement program, covering approximately 8,000 firms involved in the production of pesticides sold and distributed in the United States and millions of persons using those pesticides, is administered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. The first priority of the program is initiating enforcement actions in energency situations involving substantial threats to public health and safety. The program also emphasizes compliance on the part of the pesticide industry with registration, classification, and labeling requirements, and compliance by users and applicators of pesticides in observing proper label directions for use. As a result of Federal/State enforcement agreements, the program is conducted largely by cooperating State agencies. Included in the overall program are: observation of pesticide applications; sampling and label checks of pesticides at production sites and in the marketplace; registration of pesticide-producing establishments; and initiation of enforcement actions including civil penalties, criminal prosecutions, seizures, stop sales, and injunctive actions. In addition, the pesticides enforcement program in FY 1981 will include the administration and oversight of the applicator certification and training program. This resonsibility includes the funding of State certification and training programs, EPA oversight of such programs, administration and enforcement of Federal certification and programs in Colorado and Nebraska, and administration of certification and training programs among Indian tribes.

EPA is committed to ensuring that State governments participate to the maximum extent in the national pesticides enforcement program. The Agency has worked with the States in the implementation of cooperative Federal/State programs, particularly in establishing cooperative enforcement grants and applicator certification and training programs. With State participation, the breadth and effectiveness of the enforcement program have been greatly enhanced, the control over the use of pesticides has improved, and increased responsiveness to local needs has been realized.

1979 Accomplishments

Total obligations for this program in 1979 were $12,925,800, of which $4,072,100 was for salaries and expenses and $8,853,700 was for extramural purposes. The extramural funds included $105,200 for contracts (including an evaluation of the effectiveness of the State grant program, training for laboratory inspection program, and ADP support), and $8,797,000 for support of cooperative enforcement grants with 43 States and Territories.

In 1979, the Agency developed cooperative enforcement grants-in-aid in 43 States and Territories. Under these agreements, States conducted 11,075 use and reentry inspections and 7,652 inspections of pesticide-producing establishments.

During 1979, the program accomplished the following: 977 inspections of pesticide-producing establishments; 396 use and reentry inspections; 215 inspections at ports of entry; and 1320 marketplace inspections. As a result of these efforts, the Agency issued: 228 civil actions for product/producer/use violations; 588 Section 9 notices of warning for product/producer violations; and 184 stop sale, use, or removal orders. The Agency also participated in four investigations of incidents of alleged falsification of data submitted in support of product registration, and published Notices of Judgment, detailing the legal disposition of those civil and criminal actions instituted under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended.

1980 Program

The 1980 planned resource level for this program is 111 permanent workyears and $12,135,500, of which $3,220,200 is for the Salaries and Expenses appropriation and $8,915,300 is for the Abatement, Control and Compliance appropriation. Contract funds in the amount of $170,800 will be used for specialized training for pesticides enforcement personnel in the laboratory inspection program and for ADP support. A total of $8,750,000 will be used to fund cooperative enforcement grants.

The 1980 pesticides enforcement program will have as its first priority, at both headquarters and in the regions, the initiation of enforcement actions in emergencies involving substantial threats to public health and safety. Other programwide responsibilities include emphasis upon enforcement of pesticide use and application, improvement of enforcement methods through greater cooperation with States, and development of cases of national or regional significance. Other important activities, including establishment of cooperative enforcement grants with States, will be continued. The grants will provide for participation by approximately 56 States and Territories in all areas of pesticides enforcement. As in previous years, the pesticides enforcement program will be directed toward the general objectives of ensuring user compliance with label directions for use, and ensuring adherence to the product requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Federal pesticides enforcement activities will focus on those States not participating in the grant program and those States having programs which do not adequately address EPA's enforcement concerns within resource limits. EPA user compliance activities will include 396 use, re-entry, and experimental use inspections. Product and producer compliance activities conducted by EPA will include 928 establishment inspections, 1254 marketplace inspections, and 200 inspections at ports of entry. Additional use, establishment, and marketplace inspections will be conducted by State agencies under the terms of cooperative enforcement grants.

1980 Explanation of Change from Budget Estimate

The net decrease of $21,000 results from several actions. An increase of $122,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs and supplies and expenses resulted in a decrease of $75,900 and $2,400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $72,000 to this activity.

60-531 O - 80 - 55

A reprogramming of $30,000 was made to solid waste for hazardous waste site enforcement giving formal recognition to otherwise hidden responsibilities which draw on other abatement and control and enforcement resources; in this case some pesticides and water enforcement capability is being diverted to initiate enforcement actions where hazardous waste disposal presents and imminent danger to public health and welfare.

Reprogramming in order to support costs on the basis of 1979 actual expenditures resulted in regional transfers to air statioary source enforcement ($27,300); to pesticides use management ($25,600); to air stationary source enforcement ($16,500); from water quality enforcement ($5,100); and from water quality permit issuance ($7,100).

A reprogramming of $50,000 was made to the media for litigation management support and establishment of a special investigations unit in the immediate office of the Assistant Administrator for enforcement.

1981 Plan

In 1981, plans are to include the participation of all or nearly all States and Territories in the enforcement grant program. State activities will include use, reentry, and experimental use inspections, establishment inspections and marketplace inspections. As a consequence of this enhanced State role in the overall program, the Federal role will continue to be that of program management, oversight, and training. In States without grants, and in States having programs which do not adequately address certain enforcement concerns, Federal enforcement activities will continue within resource limits. In addition, the enforcement program will include the funding of State applicator certification and training programs, oversight of such State programs, administration and enforcement of Federal applicator certification and training programs in Colorado and Nebraska, and administration of certification and training programs among Indian Tribes.

The 1981 request for this activity is $15,220,800 and 137 positions; these figures represent an increase of $3,085,300 and 26 positions: Included in this total is $4,189,200 for salaries and expenses and $11,031,600 for abatement, control, and compliance. Of the total budget, $7,920,000 is available for the support of 56 cooperative enforcement grants with States and Territories. An additional $3,000,000 in grant funds will be available to support the administration, enforcement, and oversight of applicator certification and training programs. Contract funds will total $106,600 and will be used for ADP support and specialized training for pesticides enforcement personnel in performing laboratory data inspections and subsequent enforcement case development.

In 1981, the pesticides enforcement program has as its first priority the initiation of enforcement actions in emergencies involving substantial threats to public health and safety. Emphasis will also be placed upon enforcement of pesticide use and application, upon improvement of enforcement methods through greater cooperation with States, and upon the development of cases of national or regional significance.

RADIATION

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
Appropriation						
Salaries and Expenses...	$6,923	$7,919	$8,936	$8,552	-$384	
Research and Development	738	1,572	840	1,433	+593	
Abatement, Control, and Compliance.....	1,796	7,710	7,486	7,797	+311	
Total.....	9,457	17,201	17,262	17,782	+520	
Permanent Positions.....	198	208	215	215	...	
Full-time Equivalency...	218	253	252	248	-4	
Outlays.....	8,589	13,000	14,400	15,100	+700	
Authorization Levels....	2,500	*	*	*		

*Authorization for the Environmental Research, Development, and Demonstration Authorization Act is pending. Remaining funds are authorized by virtue of the Appropriation Act.

PROGRAM HIGHLIGHTS

Health and Ecological Effects:						R-9
Salaries and Expenses	$1,107	$1,358	$2,110	$1,557	-$553	
Research and Development.....	738	1,572	840	1,433	+593	
Monitoring and Technical Support:						
Salaries and Expenses	...	...	182	191	+9	R-13
Total:						
Salaries and Expenses	1,107	1,358	2,292	1,748	-554	
Research and Development.....	738	1,572	840	1,433	+593	
Total, Research and Development Program....	1,845	2,930	3,132	3,181	+49	
Radiation Criteria Standard and Guidelines:						R-15
Salaries and Expenses	1,762	2,350	2,186	2,342	+156	
Abatement, Control and Compliance.....	1,078	4,600	4,576	4,735	+159	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
PROGRAM HIGHLIGHTS						
Environmental Impact Assessment:						R-17
Salaries and Expenses.	3,159	3,312	3,848	3,861	+13	
Abatement, Control and Compliance.....	697	3,000	2,910	3,062	+152	
Radiation Program Implementation:						R-21
Salaries and Expenses.	895	899	610	601	-9	
Abatement, Control and Compliance.....	21	110	...	...	...	
Total:						
Salaries and Expenses.	5,816	6,561	6,644	6,804	+160	
Abatement, Control and Compliance.....	1,796	7,710	7,486	7,797	+311	
Total, Abatement and Control Program.....	7,612	14,271	14,130	14,601	+471	
Permanent Positions						
Health and Ecological Effects.....	24	29	28	28	...	R-9
Monitoring and Technical Support.....	...	...	5	5	...	R-13
Total, Research and Development Program [a/] ..	24	29	33	33	...	
Radiation Criteria, Standards, and Guidelines	49	66	60	60	...	R-15
Environmental Impact Assessment.....	100	96	106	106	...	R-17
Radiation Program Implementation.....	25	17	16	16	...	R-21
Total, Abatement and Control Program.....	174	179	182	182	...	

a/ These figures do not include reimbursable positions associated with the off-site monitoring program. The ORD reimbursable program is the results of a long standing agreement between EPA and the Department of Energy (DOE) to provide monitoring services to the DOE in response to specific DOE requirements and programs at and around the Nevada Test Site.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
		(dollars in thousands)				
Full-time Equivalency						
Health and Ecological Effects	31	36	34	34	...	R-9
Monitoring and Technical Support	...	...	5	5	...	R-13
Total, Research and Development Program a/	31	36	39	39	...	
Radiation Criteria, Standards, and Guidlines	55	77	75	73	-2	R-15
Environmental Impact Assessments	103	114	120	118	-2	R-17
Radiation Program Implementation	29	26	18	18	...	R-21
Total, Abatement and Control Program	187	217	213	209	-4	

a/ These figures do not include reimbursable positions associated with the off-site monitoring program. The ORD reimbursable program is the result of a long standing agreement between EPA and the Department of Energy (DOE) to provide monitoring services to the DOE in response to specific DOE requirements and programs at and around the Nevada Test Site.

OVERVIEW AND STRATEGY

Exposure to ionizing radiation results from naturally occurring sources, medical and industrial applications of x-rays and radioactive materials, and from various aspects of nuclear power development. EPA accepts as a prudent public health assumption the concept that any radiation exposure results in some adverse health effects. While some public exposure to radiation is inevitable, no avoidable risk attributable to exposure to radiation should occur to individuals or to the environment without offsetting benefits.

Exposure to man-made non-ionizing radiation (NIR) at radio and microwave frequencies, which was negligible prior to World War II, has increased with both the number and power of NIR sources. This trend is expected to continue, and EPA is evaluating and acting on the associated risks.

EPA's mandate to protect the public health and environment from adverse effects of radiation exposure derives from (1) the Federal guidance authority transferred under the Atomic Energy Act by Reorganization Plan #3 of 1970, (2) the Clean Air Act Amendments of 1977 which provide authority to regulate radioactive air pollutants through the standard setting authorities of the Act, (3) the Resource Conservation and Recovery Act (RCRA) and the Uranium Mill Tailings Radiation Control Act (UMTRCA) which charges EPA with providing standards for protection from waste materials with radioactive content, and (4) other authorities contained in the Federal Water Pollution Control Act, the Marine Protection Research and Sanctuaries Act, the Safe Drinking Water Act, the Public Health Service Act, and the National Environmental Policy Act.

These legislative authorities generally prescribe an environmental assessment, technology assessment, and standard setting role for EPA. In some cases enforcement responsibilities are given to other agencies, notably the Nuclear Regulatory Commission. In these instances EPA performs some oversight functions to insure that established standards and guidance are followed.

Within the framework of the applicable legislation, the Radiation program strategy is to:

- Maintain a capability for environmental and technology assessment to quantify the nature of existing and emerging radiation problems and the potential impact of advanced technology still in the planning stages;

- Concentrate the application of assessment and regulatory capabilities in those areas which promise the greatest reduction in potential adverse health effects and environmental impacts from radiation;

- Respond to issues of serious public concern, utilizing EPA's expertise to evaluate these concerns and, if necessary, point out the need to control those situations where the corrective actions required are the responsibility of other Agencies;

- Emphasize EPA's regulatory mission to establish standards for air emissions of radionuclides, for radiation in specific environmental pathways; and where federal guidelines are used, place emphasis on meaningful interagency participation in both the development and the application of the guidelines;

- Assist in the development and testing of State, local, and Federal plans to respond to emergency situations involving nuclear events or large, unexpected releases of radioactivity;

- Employ the extensive research capabilities of the other Federal agencies whenever possible, and augment or complement the existing research when a special need exists or where there is a lack of other Federal effort.

Within this general strategy, activities mandated by the Clean Air Act of 1977 and those associated with radioactive waste management are accorded the highest priority in 1980 and 1981. The emphasis on the Clean Air Act activities is consistent with general public concern over radiation and the existence of a significant number of poorly defined and uncontrolled sources which may be emitting radioactive air pollutants. The role in the control of radioactive waste disposal which will result in environmentally sound solutions to radioactive waste disposal problems is highlighted by the report of the Interagency Review Group on Nuclear Waste Management (IRG). This report set forth schedules to be met by all Federal agencies to meet Federal Government commitments to energy development alternatives.

As a result of investigations of the Interagency Task Force on the Health Effects of Ionizing Radiation, in October 1979, the President approved the establishment of a Radiation Policy Council under the chairmanship of the Administrator of EPA. The Council will provide advice to EPA on concerns relating to regulation and interagency coordination beginning in 1980.

EPA's research and development program has stressed the identification and evaluation of health effects of chronic low level human exposure to non-ionizing radiation. Such research fills a gap in Federal research on radiation and is a prelude to the establishment of any required Federal guidance for acceptable environmental levels of such radiation.

Following the Three Mile Island incident, EPA reexamined its policies and procedures with respect to accidental releases of radionuclides from nuclear accidents. EPA's role in the coordination of monitoring has been clarified and strengthened. The Agency's ability to physically respond to radiation emergencies will be further strengthened in 1980 and 1981. In 1980, the regional radiation program staffs will stress the development of State emergency response plans. As soon as possible in 1980 and 1981 emphasis will be placed on the testing of such plans.

Purpose, Research and Development Program

The establishment of protective guidelines for permissible levels of radiation in the environment is an EPA responsibility. Reorganization Plan No. 3 of 1970 transferred all functions of the Federal Radiation Council to EPA. The reorganization also transferred to the Administrator the authority, under provisions of the Public Health Service Act, as amended in 1980, to conduct research as necessary to provide scientific data needed for the formulation of standards. EPA is conducting research on the potential health effects associated with those frequencies of non-ionizing radiation most commonly found in the general environment.

Purpose, Abatement and Control Program

The radiation program's abatement and control activities concentrate primarily on the establishment of specific criteria and standards for environmental radiation protection programs. Complementing the criteria and standards setting effort, EPA conducts programs of surveillance and monitoring to determine levels of environmental radiation; reviews federally supported or licensed projects which may be sources of environmental radiation; and provides technical assistance to other governmental agencies.

The principal objective of the radiation abatement and control program is to eliminate unnecessary potential health effects by minimizing exposure to radiation sources. This goal will be attained through environmental monitoring, risk assessments and, when necessary, by establishing standards, criteria and guidance to minimize risk in a cost-effective manner.

The abatement and control activities are grouped under the following subactivities:

Radiation Criteria, Standards, and Guidelines

This subactivity includes activities and outputs related to the development of environmental standards and Federal radiation guidelines for protection of the public health and environment from radiation exposures from nuclear energy applications, naturally-occurring radioactive materials, medical and occupational radiation, and non-ionizing radiation. Development of these standards and guidelines involves evaluation of health effects data, radiation measurements, technological and non-technological control measures, and the economics of control measures.

Environmental Impact Assessment

This subactivity includes activities and outputs related to (1) developing the support information and documentation necessary for the preparation of standards and guidelines; (2) ensuring that environmental radiation considerations are properly treated in major Federal decisions through the NEPA process, (3) responding to unplanned contaminating events, and (4) assisting other Federal agencies and States on specific environmental problems and radiation control actions.

Specific activities include reviewing other agencies' environmental impact statements, monitoring for radiation in the environment including laboratory analysis of the resulting samples, evaluating new and emerging technologies, developing methods for determining environmental pathways and identifying and locating specific sources emitting radioactive materials into air or water.

Radiation Program Implementation

This subactivity includes activities and outputs related to providing regional support to States in the implementation of their radiation control programs. It also includes the review of environmental impact statements for existing technologies and assistance to States and other Federal agencies on specific environmental problems and radiation control actions.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Radiation Program.....	$17,262
Salaries and Expenses..... The net decrease results primarily from a shift to extramural funds in the health effects activity, offset by an increase for equipment purchases.	-384
Research and Development..... The increase results from a shift of funds from Salaries and Expenses for the health effects activity.	+593
Abatement, Control and Compliance..... The net increase will provide contract support for field measurements needed in support of the regulatory program.	+311
1981 Radiation Program.....	17,782

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

A total of $17,782,200 is requested in 1981. This request, by appropriation account, is as follows:

Salaries and Expenses	$8,551,500
Research and Development	7,797,400
Abatement, Control and Compliance	1,433,300

This represents an increase of $520,400 over the 1980 level. The increase for the environmental impact assessment activity will provide contract support for field measurements needed in support of the regulatory program. The radiation criteria standards, and guidelines activity includes an increase for equipment purchases and additional contract support to standards setting.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate	$17,201
Congressional decreases:	
Travel	-9
ADP, Supplies and Expenses	-1
Reprogramming for authorized workyears	-319
Proposed pay raise supplemental	+296
Miscellaneous reprogrammings	+94
Current 1980 estimate	17,262

Congressional changes to the radiation media include a reduction of $9,000 to travel costs, $100 to ADP costs, and $400 to supplies and expenses.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $319,000 to this media. The proposed supplemental for partial funding of the October 1979 pay raise will increase the radiation media by $296,000.

Miscellaneous reprogrammings were made from the air media, $16,000; from water quality, $77,600; from noise, $6,000; to the pesticides media, $6,700; and $100 to the management and support media.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$9,456	$17,780
Congressional changes	-10	...
Proposed pay raise supplemental	+296	...
Reprogrammings	-225	...
Change in amount of carryover funds available	+358	-518
Program increase	+6,000	+300
Change in rate of obligation	+1,905	...
Total estimated obligations	17,780	17,562
(From new obligation authority)	(16,693)	(16,993)
(From prior year funds)	(1,087)	(569)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The items discussed in the previous section -- congressional changes, pay raise supplemental, and reprogrammings -- result in a net increase of $61,000 to obligations.

The amount of carryover funds to be obligated in 1980 is $1,087,000, an increase of $358,000 over the 1979 level. In 1981, it is estimated that $569,000 of carryover funds will be obligated, a decrease of $518,000 from the 1980 level.

The increase in budget authority in 1980 was previously estimated to increase obligations by $6 million; in 1981, the program increase is expected to increase obligations by $300,000.

RADIATION

Health and Ecological Effects

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Health Effects:					
Salaries and Expenses....	$1,107	$1,358	$2,110	$1,557	-$553
Research and Development.....	738	1,572	840	1,433	+ 593
Grand Total.....	1,845	2,930	2,950	2,990	+ 40
Permanent Positions					
Health Effects.....	24	29	28	28	...
Full-time Equivalency					
Health Effects.....	31	36	34	34	...

Budget Request

The Agency requests $2,990,200 and 28 permanent for the radiation health effects program, which $1,556,900 is for the Salaries and Expenses appropriation and $1,433,300 is for the Research and Development appropriation; a decrease of $553,100 and an increase of $593,300, respectively. There is a net increase of $40,200; program activities will not change from the current level.

Program Description

In recent years, there has been increasing public interest in the potential health effects that may be associated with non-ionizing radiation (NIR). To address such concerns, EPA is conducting a health effects research program which now accounts for approximately 25 percent of Federal research on non-ionizing radiation and is the largest intramural effort in this field in the United States. Present research focuses on radiofrequency and microwave radiation in the range of 300 to 300,000 megahertz. Such frequencies are most prevalent in the environment and are emitted from a variety of sources such as radar systems, microwave ovens, radios, televisions, and other communication devices.

The health effects program is designed to provide EPA and other concerned agencies with an understanding of the biological consequences of exposure to non-ironizing radiation. This is accomplished with several research approaches. Biological effects studies in animals are increasingly focused on chronic exposures to low-level radiation, that is, conditions analogous to the exposure circumstances for humans in the general environment. The primary research objectives are to determine if reproducible biological effects exist and then to establish dose-response models. Critical points to be evaluated include behavioral, immunologic, hematologic, physiologic, reproductive, genetic, and teratologic factors. As a necessary tool for effects research, efforts are also directed towards improving dosimetric methods and exposure systems.

Research in this program is also directed at improving our understanding of how non-ionizing radiation reacts biophysically on living systems. Such studies aim to identify which frequencies present the greatest potential for adverse effects by examining the relationship between frequency and energy deposition in tissue. Other studies focus on the

biochemical, metabolic, and other physiologic responses in sensitive, critical tissues such as the brain. Comprehension of the underlying mechanisms of action of non-ionizing radiation will aid in directing animal experimentation and in assessing potential hazards for specific exposure conditions.

A minor component of the non-ionizing health effects program utilizes epidemiological research approaches. While the bulk of the effort uses animal models, epidemiology studies are being phased into the program to complement the laboratory animal investigations.

Data developed in this program will be utilized in the development of environmental radiofrequency guidance. EPA's Office of Radiation Programs has announced its intention to develop interim guidance in 1981 and efforts undertaken through the research program will be critical to this action. This research program also provides technical assistance to Regional radiation offices regarding sources of public health concern.

1979 Accomplishments

In 1979, the radiation research and development program resources were $1,844,500; of this amount, $1,106,800 was spent on salaries and expenses and $737,700 on extramural research and development activities. During 1979 the program:

- Completed a major multidisciplinary evaluation of the effects of 100 megahertz (FM radio) on rats exposed throughout pregnancy and, for offspring, until 90 days postnatally. This is the first experimental work of 100 megahertz, a frequency which is an important contributor to total ambient levels of radiofrequency radiation and is close to frequencies at which maximum absorption of energy occurs in human tissue. The rate of energy absorption in the test animals was equivalent to that experienced by humans exposed to half of the occupational guideline level. No statistically significant differences between controls and exposed animals were found with regard to behavioral, immunological, hematological, teratological, and reproductive endpoints. Enzymatic changes in the brains of some animals were observed however, and are under further examination.

- Demonstrated a statistically significant rise in antibody levels following acute exposure (two hours per day for five days) of mice to a pulsed frequency (nine gigahertz-radar) at a power density of ten milliwatts per square centimeter. Subsequent challenge of the exposed animals to virulent pneumococcal bacteria did not, however, produce any differences in mortality or infection resistance between controls and experimental animals under this exposure regimen.

- Completed a pilot study intended to examine the feasibility of using persons employed at the Massachusetts Institute of Technology's Radiation Laboratory during World War II as a cohort in which to examine the long-term effects of radar exposure. A subset of the population was deemed suitable for epidemiological follow-up.

- Developed and tested a microwave spectrometer capable of sweeping frequencies ranging from 250 to 8000 megahertz (comprising high VHF, UHF, microwave oven and some radar frequencies) in order to determine the energy absorption spectrum of biological samples and systems.

- Constructed a circularly polarized waveguide (exposure) system for use in animal studies on health effects at 970 megahertz. The system is designed to allow continuous (24 hour) irradiation of a test animal. Development of such a capability is important for two reasons. First, this frequency was recently allocated by the Federal Communications Commission (FCC) for land mobile communications and, hence, is a potentially important source for human exposure. Second, 970 megahertz is close to the maximum energy absorption in rat tissue. The system, thus, has a high utility for experimentation with these species.

1980 Program

In 1980, the Agency has allocated $2,950,000 to this program of which $2,110,000 is for the Salaries and Expense appropriation and $840,000 for extramural purposes under the Research and Development appropriation.

The activities underway in 1980 represent new directions and important expansions of previous types of investigative approaches. Frequencies typical of those contributing the most to ambient levels of radiofrequency radiation are the subject of experimental research. Development of a new exposure system will allow the first investigations on 970 megahertz to begin this year. Chronic, lifetime studies of animals exposed to power densities lower than 5 milliwatts per square centimeter are emphasized. Application of varied exposure and experimental regimens will allow development of dose-response and time-dependency data.

Investigations with laboratory animals are continuing to evaluate the effects of varied frequencies and power densities on important biological parameters relative to behavior, physiology, hematology, teratology, and reproduction. Increased antibody response after acute exposure to a radar frequency is being evaluated further under varied exposure times and conditions to determine if the response is time dependent, a variable critical to standard setting. Squirrel monkey infant mortality following in utero exposure to 2450 megahertz (microwave oven frequency) is under investigation. The behavioral response of primates to the stresses posed by non-ionizing radiation at various levels is being examined to supplement similar research on rodent species. An important area of inquiry centers on the evaluation of physiological and behavioral responses of animals to microwave--induced thermal stress. The objective is to determine if thermosensitive structures may be stimulated by absorbed microwave energy to trigger changes in effecter responses that regulate body temperature.

The first epidemiological studies in this program are underway. Selected cancer incidence and mortality rates from the Portland, Oregon area are being enumerated and compared to available radio emission data as well as to other important etiological factors. Scientists involved in radar research and development during World War II will be traced to ascertain their overall and specific mortality and disease history. Prior to embarking on a more ambitious epidemiological program on non-ionizing radiation effects, a study is being undertaken to identify populations suitable for follow-up according to such evaluative criteria as sample size, population composition, follow-up feasibility, and the potential for accurate and precise exposure assessment.

Resources are being devoted to improving the Agency's capability for assessing radiofrequency exposure on the general population. Specifically, this program is providing pulsed mode measurement equipment for use in the Agency's environmental monitoring program. This capability will permit better, more complete estimates of ambient levels. In conjunction with the Office of Radiation Programs, regional radiation representatives will be provided, if necessary, with the appropriate monitoring equipment and training, for identifying sources and frequencies of potential public health impact and concern.

The identification of biologically important frequency ranges is continuing and represents a major, long-term commitment to clarifying the mechanisms of non-ionizing radiation acting on living systems. For example, a study is being conducted on the causes and significance of increased calcium release from brain tissues in relation to different power densities and frequencies. Calcium is important for the normal functioning central nervous system. Further, it is now known that non-ionizing radiation is not absorbed uniformly, but, can be distributed in patterns of concentrated energy termed "hot spots". The consequences of such "hot spots" to critical tissues is being examined in studies on energy production and metabolism in the brain, including interactions with neuronal membranes. Other research will concentrate on suggested radiation related alterations in the blood barrier where the potential exists for the entry of agents into delicate brain tissues. Frequency specificity and wave mode will be compared since pulsed mode radiation (e.g., radars) may be more effective in altering barrier permeability than continuous wave radiation.

1980 Explanation of Changes from Budget Estimate

The net increase of $20,000 results from several actions. An increase of $39,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs and $1 million ADP costs and resulted in a decrease of $1,600 and $100, respectively. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $18,000 to the activity.

1981 Plan

The Agency requests a total of $2,990,200 and 28 permanent workyears for this program, of which $1,556,900 is for the Salaries and Expense appropriation and $1,433,300 is for extramural purposes under the Research and Development appropriation.

Many activities started in 1980 will be continued in 1981. The current emphasis is on chronic effects of low-level radiation which requires long-term exposure conditions. In most cases, investigations on exposed animals will employ dose rates equivalent to those associated with human exposure to power densities equal to or less than 5 milliwatts per square centimeter. The effects of pulsed versus continuous wave (CW) radiation will continue to be an area of concentration, especially for immunological, behavioral, and neurophysiological research.

Immunological studies will evaluate the functional, structural, and biochemical integrity of components of the blood and of the immune system of animals exposed to various frequencies and power levels. Neurochemical and neuropathological responses will be investigated, including the continued assessment of potential blood brain barrier alterations. Behavioral studies emphasizing threshold sensitivity for heat stress, will be undertaken for primates exposed to a power density dose series. The study of the effects of intrauterine and postnatal exposures on infant mortality in squirrel monkeys will continue. The potential for dominant lethal/mutagenic effects in chronically exposed rats will be examined. Thermal physiology studies will continue to evaluate the physiological and neuroendocrine parameters which may be affected by microwave induced heat stress.

The epidemiological study of World War II radar researchers will continue. Increased emphasis will be placed on refining population exposure estimates through the development and improvement of methods to account for multiple confounding variables. Such methodology should improve from general population exposure surveys as well as improve exposure data for epidemiological studies.

Dosimetric research will continue to provide basic support for health effects research but will also work toward refining thermographic measurement techniques. Efforts will continue to validate experimentally both computerized predictive models of body heat flow and computer-generated analyses of data from infrared thermography. A larger, multi-animal exposure facility suitable for lifetime, long-term studies will be developed. Efforts will continue to define which specific frequencies of non-ionizing radiation are absorbed in biological systems. Resonant frequency/system interactions of biopolymers, subcellular organelles, and cellular systems will be sought. Isolated brain tissues and nerve cell membranes exposed in a dose-response series to both pulsed and CW radiation will be assessed in terms of effects on action potential, nerve conduction velocity, and impulse firing rates. The effects of non-ionizing radiation on biochemicals important to the metabolic processes of the brain will also continue to be studied.

RADIATION

Monitoring and Technical Support

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Quality Assurance Ionizing Radiation: Salaries and Expenses....	...	...	$182	$191	+$9
Permanent Positions					
Quality Assurance Ionizing Radiation.....	...	...	5	5	...
Full-time Equivalency					
Ionizing Radiation.....	...	...	5	5	...

Budget Request

The Agency requests a total of $191,100 and 5 permanent workyears for 1981 for the Salaries and Expenses appropriation. Program activities will continue at the 1980 level.

Program Description

This program was established in 1980 to document and improve the precision, accuracy and intercomparability of radiation measurements; to provide calibration facilities, expertise, equipment, guidelines, training, and performance evaluations needed by the program offices and states; and to supply quality control samples and reference materials containing radionuclides.

1979 Accomplishments

The program did not exist in 1979.

1980 Program

In 1980, the Agency has allocated a total of $182,200 to this program, within the Salaries and Expenses appropriation. Major activities include:

- Execution of 20 laboratory intercomparison studies with State, Federal, university and private nuclear laboratories.
- Testing and evaluation of two methods for radioactive pollutants.
- Maintenance of a centralized source of expertise in the area of radiation quality assurance, radiochemistry, and instrumentation.

1980 Explanation of Change from Budget Estimate

The net increase of $182,200 results from several actions. An increase of $7,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $300. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $4,700 to this activity.

A reprogramming of $90,000 was made from the air quality assurance area of the air media and $90,000 was made from the water quality assurance area of the water quality media to reflect the support of a new program dealing with ionizing radiation quality assurance.

1981 Plan

The Agency requests a total of $191,100 and 5 permanent workyears for 1981, of which the entire amount is for the Salaries and Expenses appropriation. During 1981 the program will:

- Conduct 20 routine laboratory intercomparison studies with State, Federal, university and private nuclear laboratories.
- Test and evaluate one measurement method for a radioactive pollutant.
- Provide a centralized source of expertise in the area of quality assurance for radiation, radio-chemistry and instrumentation.

RADIATION

Radiation Criteria, Standards, and Guidelines

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Environmental Standards and Guidelines:					
Salaries and Expenses.....	$1,762	$2,350	$2,186	$2,342	+$156
Abatement, Control and Compliance...	1,078	4,600	4,576	4,735	+159
Total.....	2,840	6,950	6,762	7,077	+315
Permanent Positions					
Environmental Standards and Guidelines.....	49	66	60	60	...
Full-time Equivalency					
Environmental Standards and Guidelines.....	55	77	75	73	-2

Budget Request

The Agency requests a total of $7,076,600 and 60 permanent workyears for 1981, an increase of $314,600. Included in this total is $2,341,500 for Salaries and Expenses and $4,735,100 for Abatement, Control and Compliance, with increases of $155,900 and $158,700 respectively. A decrease in total workyears results from a reduction of two other-than-permanent-full time workyears and results in a slight reduction in salaries and expenses. However, an increase in equipment purchases will result in a net increase in the salaries and expenses accounts. The additional increase in compliance will provide additional contract support to standards setting.

Program Description

Environmental standards and guidelines are developed and promulgated under this subactivity. These standards and guidelines protect the public health and the environment by minimizing risk from radiation exposures from nuclear energy applications, naturally occurring radioactive materials, medical and occupational radiation exposure and nonionizing radiation.

ENVIRONMENT STANDARDS AND GUIDELINES

1979 Accomplishments

Fiscal year 1979 resources included approximately $1,077,900 in contract support. In 1979, guidance on the risks of radon exposure from phosphate mined land was completed for the State of Florida. Federal guidance for the clean-up of plutonium contaminated lands

60-531 O - 80 - 56

was transmitted to the President and all major work was completed on the Determination and Listing of Radionuclides as hazardous air pollutants (Published first quarter of fiscal year 1980). Work was continued on high level waste standards, radioactive waste criteria, uranium mill tailings standards and Federal Guidance for occupational exposure, nonionizing radiation, and a protection action guide for accidental airborne releases.

1980 Program

In 1980, the Agency has allocated a total of $6,762,000 and 75.0 full time equivalents to this program, of which $2,185,600 is for salaries and expenses and $4,576,400 is for extramural purposes under the Abatement, Control, and Compliance appropriation. 1980 program efforts will focus on three regulatory areas: radioactive waste disposal, Federal Guidance, and control of airborne radionuclides under the Clean Air Act. Planned radioactive waste activities includes final action on criteria for the disposal of radioactive waste and standards for the management of uranium mill tailings from inactive sites. A standard for disposal of high level radioactive wastes and uranium mill tailing standard for active sites, will be proposed. Additional actions under development include siting criteria for ocean disposal of low Level radioactive wastes, packaging criteria for low level waste, a land disposal standard for low level waste, a decommissioning standard for nuclear facilities and three disposal standards under the Resource Conservation and Recovery Act (RCRA) (uranium mine wastes, phosphate mine and processing waste and zirconium processing wastes).

Planned Federal Guidance activities for 1980 include the proposal of guidance on general occupational exposure. Actions under development include a protection action guide (PAG) for accidental airborne release, a PAG for exposure via food pathways, and guidance for general exposure to nonionizing radiation in the radio frequency. Occupation Guidance for special groups of workers is also being pursued. Pursuant to the authority of the Clean Air Act, regulatory development is being concentrated on the radionuclide hazards of mineral extraction processes and on large scale coal combustion. It is anticipated that this effort will lead to the proposal of at least one standard during 1980.

1980 Explanation of Change from Budget Estimate

The net decrease of $187,600 results from several actions. An increase of $90,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $239,100 to this activity.

A reprogramming of $37,000 was made to the Air media to air emission testing, analysis and data support/preproduction compliance to support the fuel economy program.

1981 Plan

The Agency requests a total of $7,076,600 and 60 permanent workyears for this program of which $2,341,500 is for the Salaries and Expenses appropriation and $4,735,100 for Abatement, Control and Compliance. 1981 program efforts will continue to focus on radioactive waste disposal, Federal Guidance, and the control of airborne radionuclides under the Clean Air Act. Planned radioactive waste activities will include final action on a standard for disposal of high level radioactive wastes. Proposals will include: siting criteria for ocean disposal of low level radioactive waste, standards for decommissioning of nuclear facilities, and RCRA standards for disposal of zirconium processing wastes, uranium mine wastes and phosphate mining and processing wastes. Work will continue on standards for land disposal of low level radioactive waste and low level waste packaging criteria. 1981 Federal Guidance activities will include final actions on general occupation exposures and Protection Action Guides for accidental airborne release. Proposals will include a protection action guide for food pathways, guidance for nonionizing radiation and an occupation guide for special classes of workers. Clean Air Act radionuclide activities will continue to concentrate on resource extraction and larger scale coal combustion, although some work will begin on standards addressing other sources. It is anticipated that at least one Clean Air Act standard will be promulgated and two will be proposed during 1981.

RADIATION

Environmental Impact Assessment

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs 1980
			(dollars in thousands)		
Monitoring and Analysis:					
Salaries and Expenses..	$1,816	$1,972	$2,431	$2,496	+$65
Abatement, Control and Compliance.....	351	1,400	1,375	1,900	+525
Technology Assessment:					
Salaries and Expenses..	1,343	1,340	1,417	1,365	-52
Abatement, Control and Compliance.....	346	1,600	1,535	1,162	-373
Total:					
Salaries and Expenses..	3,159	3,312	3,848	3,861	+13
Abatement, Control and Compliance.....	697	3,000	2,910	3,062	+152
Grand Total.....	3,856	6,312	6,758	6,923	+165
Permanent Positions					
Monitoring and Analysis.....	59	58	67	67	...
Technology Assessment.....	41	38	39	39	...
Total.....	100	96	106	106	...
Full-time Equivalency					
Monitoring and Analysis.....	61	67	72	71	-1
Technology Assessment.....	42	47	48	47	-1
Total.....	103	114	120	118	-2

Budget Request

The Agency requests a total of $6,923,100 and 106 permanent workyears for 1981, an increase of $165,800. Included in this total is $3,860,800 for Salaries and Expenses and $3,062,300 for Abatement, Control and Compliance, with increases of $13,100 and $152,700, respectively. A decrease in total workyears results from a reduction of two other-than-permanent-full-time workyears. This reduction, along with efforts to adjust the skill mix between monitoring and analysis and technology assesment, will result in a net increase of only $13,000 in salaries and expenses. The increase requested for abatement control and compliance will provide contract support for field measurements needed in support of the regulatory program.

Program Description

Activities in this area provide the information necessary to identify and analyze potential radiological health problems having public health impact and to support the development of standards and guidelines. Also encompassed under this subactivity, is the review of environmental impact statements, the monitoring of environmental radiation, as well as laboratory analysis, data analysis and technology assessments.

Monitoring and Analysis

This program encompasses activities related to identifying and analyzing radiation problems for potential coverage by standards and guidelines, supporting technical review of EIS's, assessing the radiological quality of the environment, and executing EPA radiological emergency response responsibilities. It also includes environmental monitoring, laboratory analysis of environmental samples, development of monitoring and analytical procedures, special monitoring studies, the evaluation of data and subsquent preparation of reports.

Technology Assessment

This program includes activities related to: (1) providing engineering assessment of the impact of developing radiation technology on environmental radiation levels; (2) providing sound technological bases for EIS review; (3) providing data and information for setting technologically feasible standards and guidelines; (4) reviewing generic and programmatic environmental impact statements; and (5) exercising EPA responsibilities in assessing Federal facilities radiation control activities.

MONITORING AND ANALYSIS

1979 Accomplishments

In 1979, obligations totalled $1,689,000, of which $351,100 was for contract support. Field studies and evaluations were conducted to provide exposure information on a variety of airborne radionuclide sources which might be regulated under the Clean Air Act. Specific sources studied include coal fired electric generating plants, uranium fuel cycle facilities and radiopharmaceutical manufacturers. Monitoring and analytical support was also provided to the mill tailings effort and the Florida Phosphate Guidance. A pilot study was initiated to identify radon levels in public drinking water. The operation of the Environmental Radiation Ambient Monitoring System (ERAMS) was continued, the national radium repository was maintained and additional radium sources were collected. One major unplanned activity in 1979 was participation in the Federal response to Three Mile Island. This involvement included the deployment of field personnel, the provision of laboratory and analytical service and the calculation of dose estimates used by Federal and State officials.

1980 Program

In 1980, the Agency has allocated a total of $3,805,900 and 67 permanent workyears to this program, of which $2,430,900 is for the Salaries and Expenses appropriation and $1,375,000 is for extramural purposes under the Abatement, Control and Compliance Appropriation. During 1980, monitoring and analytic support to the Clean Air Act is being continued with particular emphasis placed on large scale coal combustion and on resource extraction and processing facilities. 1980 will see a major expansion of efforts to determine the nature and magnitude of the health risk associated with indoor radon exposure. The radon in drinking water pilot study will be completed with a total of 19 States surveyed and an average of 35 water supplies sampled per state. EPA's radiological emergency response capability will be expanded through the acquisition of additional monitoring equipment. Operation of the EPA Environmental Radiation Ambient Monitoring system will continue. The radium repository will be maintained and additional sources collected. A limited amount of laboratory and analytical support will be provided to States with special radiological problems.

1980 Explanation of Change from Budget Estimate

The net increase of $433,300 results from several actions. An increase of $80,500 results from the cost of October 1979 pay raise and is included in a proposal supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,500. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $36,900 to this activity.

A reporgramming of $409,700 was made within this media from radiation state program support to eliminate the vague distinction between work which is initiated by EPA in identifying actual or potential environment hazards and provide continuing assessments of risks associated with exposures to radiation from work performed in response to requests from Federal agencies, regional offices, States or localities.

A reprogramming of $18,500 was made to the air media to air emission testing, analysis and data support/preproduction compliance to support the fuel economy program.

1981 Plan

The Agency requests a total of $4,395,800 and 67 permanent workyears for this program, of which $2,495,800 is for the Salaries and Expenses appropriation and $1,900,000 for Abatement, Control and Compliance. Support to regulatory efforts will continue to be a major role for this program element with support to the Clean Air Act Regulations taking the lead. The investigation of emissions from large scale coal combustion and resource extraction facility will be continued, and some work covering other Clean Air Act sources initiated.

The indoor radon investigation initiated in 1980 will also be continued and a measurement program for radon in drinking water, growing out of the 1980 pilot study, will be conducted. Continued emphasis will be placed upon technical support to the regions and States in the development, review and testing of radiological emergency response plans. The Environmental Radiation Ambient Monitoring system will be expanded by bringing all 65 air sampling stations into full time operation. The radium repository will continue to be maintained and new sources collected.

TECHNOLOGY ASSESSMENT

1979 Accomplishements

1979 obligations of $1,689,000 included $346,400 in contract support. Studies were continued on control technologies available to manage radioactive sources under the provisions of the Clean Air Act. Assessments of problems associated with shallow land and ocean disposal of low level waste were continued and the major technology assessment needed for the high level waste standards was completed. Other 1979 activities included EIA Review.

1980 Program

Un 1980, the Agency has allocated a total of $2,951,400 and 39 permanent workyears to this program, of which $1,416,800 is for the Salaries and Expenses appropriation and $1,534,600 is for extramural purposes under the Abatement, Control and Compliance appropriation. The major 1980 activity for this program element is the assessment of control technology needs for the development of Clean Air Act and radioactive waste standards. Clean Air Act efforts will focus primarily on coal combustion and resource extration. Activities in support of waste standards will address low level land and ocean disposal, waste packaging, and transuranic waste disposal. EIS review will continue at a reduced level.

1980 Explanation of Change from Budget Estimate

The net increase of $11,400 results from several actions. An increase of $53,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $1,500. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in decrease of $22,500 to this activity.

A reprogramming of $18,500 was made to the air media to emission testing, analysis and data support to support the fuel economy program.

1981 Plan

The Agency requests a total of $2,527,300 and 39 permanent workyears for this program, of which $1,365,000 is for the Salaries and Expenses appropriation and $1,162,300 for the Abatement, Control and Compliance appropriation. In 1981, the focus of the Clean Air Act regulatory efforts will broaden to a wider variety of sources. Many of these sources will require the determination of the best available control technology for a variety of radionuclides. The analyses of control technologies for these sources will constitute the major activity of this program element in 1981. The review of EIS's will continue at the 1980 level.

RADIATION

Radiation Program Implementation

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Radiation					
State Program Support:					
Salaries and Expenses...	$342	$310	...	...	...
Abatement, Control and Compliance.....	...	100	...	...	...
Regional Program Implementation:					
Salaries and Expenses...	553	589	$610	$601	-$9
Abatement, Control and Compliance.....	21	10	...	...	...
Total:					
Salaries and Expenses...	895	899	610	601	-9
Abatement, Control and Compliance.....	21	110	...	...	...
Grand Total.....	916	1,009	610	601	-9
Permanent Positions					
State Program Support...	10	5	...	...	...
Radiation Program Implementation.....	15	12	16	16	...
Total.....	25	17	16	16	...
Full-time Equivalency					
State Program Support...	11	8	...	...	...
Radiation Program Implementation.....	18	18	18	18	...
Total.....	29	26	18	18	...

Budget Request

The Agency requests a total of $601,200 and 16 permanent workyears for 1981 A decrease of $9,100. The full request is within the Salaries and Expenses appropriation. The decrease in funds reflects a reduction in regional travel.

Regional Program Implementation

This subactivity includes activities related to EPA's regional offices including: reviewing routine environmental impact statements (e.g., for light-water reactors and uranium mining and milling); providing the public with technical information; providing direct assistance to State and local governments with special radiation problems of a short term nature; and the reviewing and testing of State emergency response plans.

REGIONAL PROGRAM IMPLEMENTATION

1979 Accomplishments

In 1979, obligations totalled $573,700, with no contract support. Accomplishments included the review of draft and final EIS's by the regional offices, technical assistance to States on emergency response plans, and providing radiological information to the public. Other regional activities included assistance to the water program on radionuclides in drinking water and investigations of special radiation problems, such as abandoned waste dumps and tailings from radium processing.

1980 Program

In 1980, the Agency has allocated a total of $610,300 and 16 permanent workyears to this program, all for Salaries and Expenses.

The major emphasis for the 1980 regional program is technical assistance to States in the area of emergency response planning. EPA will help States in the development of plans and will formally review these plans along with the NRC and other Federal agencies. In 1980, regional programs will continue to review EIS's and conduct other activities but at a reduced rate to allow for the expanded emergency preparedness program.

1980 Explanation of Change from Budget Estimate

The net increase of $11,000 results from several actions. An increase of $24,600 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million each to Agency travel costs supplies and expenses resulted in a decrease of $2,600 and $400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $2,600 to this activity.

Regional reprogrammings were made between media to support projected costs based on 1979 actual expenditures to pesticides use management ($6,700); from noise regional program implementation ($6,000); from NEPA compliance/municipal waste facility construction ($7,200); to environmental emergency response and prevention ($19,600); and to personnel management ($100).

1981 Plan

The Agency requests a total of $601,200 and 16 permanent workyears for this program, all of which is for the Salaries and Expenses appropriation. In 1981, the emphasis will remain on radiological emergencies response plans. However, with more plans completed and approved the testing of these plans will receive greater attention, since testing of plans on a regular basis provides the best chance for their successful execution in time of emergency. Other activities in 1981 will include assisting in the implementation of standards under the Uranium Mill Tailing Radiation Control Act and Federal Guidance for the clean-up of plutonium contaminated lands. In addition, the review of EIS's and Section 309 actions, assistance to the drinking water and solid waste program, and technical assistance to States will continue as in 1980.

State Program Support

1979 obligations totalled $341,700; in 1980 this program was merged with the radiation monitoring and analysis activity.

1980 Explanation of Change from Budget Estimate

The decrease of $409,700 resulted in a reprogramming within the radiation media to monitoring and analysis to eliminate the vague distinctions between work which is initiated by EPA in identifying actual or potential environment hazards and provide continuing assessments of risks associated with exposures to radiation work performed in response to requests from Federal agencies, regional offices, States or localities.

ENERGY

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Appropriation						
Salaries and Expenses	$10,142	$11,078	$11,489	$10,722	-$767	
Research and Development	102,446	91,383	89,875	96,877	+7,002	
Total	112,588	102,461	101,364	107,599	+6,235	
Permanent Positions	185	140	153	150	-3	
Full-time Equivalency	271	265	259	251	-8	
Outlays	107,000	125,000	104,000	105,000	+1,000	
Authorization Levels	Authorization is contained within the Federal Water Pollution Control Act and the Clean Air Act. Authorization levels for these Acts are shown under the water quality and air media descriptions.					
Program Highlights						
Fuel Processing, Preparation and Advanced Combustion:						E-13
Salaries and Expenses	$1,889	$2,055	$2,863	$2,762	-$101	
Research and Development	10,707	11,089	9,959	15,775	+5,816	
Fuel Extraction:						E-18
Salaries and Expenses	1,061	1,100	1,074	1,057	-17	
Research and Development	2,567	1,933	1,971	1,920	-51	
Environmental Assessment of Conventional and Advanced Energy System:						E-22
Salaries and Expenses	1,519	1,688	1,670	1,645	-25	
Research and Development	15,762	11,706	11,738	10,306	-1,432	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Flue Gas Sulfur Oxide Control:						E-30
Salaries and Expenses	238	329	334	368	+34	
Research and Development	2,816	1,560	1,457	3,146	+1,689	
Nitrogen Oxide Control:						E-33
Salaries and Expenses	1,717	1,518	1,758	1,514	-244	
Research and Development	12,162	12,297	11,823	10,970	-853	
Flue Gas Particulate Control:						E-36
Salaries and Expenses	723	883	1,099	1,129	+30	
Research and Development	8,669	7,117	6,712	6,911	+199	
Transport, Fate and Effects of Energy Related Pollutants:						E-39
Salaries and Expenses	1,230	1,299	894	902	+8	
Research and Development	14,908	13,349	14,439	13,765	-674	
Atmospheric Transport and Transformation of Energy Related Pollutants:						E-43
Salaries and Expenses	632	375	201	225	+24	
Research and Development	8,030	7,239	6,968	7,395	+427	
Measurement Systems and Instrumentation Development for Energy Related Pollutants:						E-48
Salaries and Expenses	1,024	1,062	972	974	+2	
Research and Development	6,862	7,475	7,276	8,444	+1,168	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Health Effects of Energy Related Pollutants:						E-53
Salaries and Expenses	109	769	624	146	-478	
Research and Development	19,963	17,618	17,532	18,245	+713	
Total:						
Salaries and Expenses	10,142	11,078	11,489	10,722	-767	
Research and Development	102,446	91,383	89,875	96,877	+7,002	
Grand Total	112,588	102,461	101,364	107,599	+6,235	
Permanent Positions						
Fuel Processing, Preparation and Advanced Combustion	36	47	48	48	...	E-13
Fuel Extraction	21	22	21	19	-2	E-18
Environmental Assessment of Conventional and Advanced Energy Systems	25	20	24	24	...	E-22
Flue Gas Sulfur Oxide Control	6	5	5	5	...	E-30
Nitrogen Oxide Control	30	23	22	20	-2	E-33
Flue Gas Particulate Control	14	13	15	15	...	E-36
Transport, Fate and Effects of Energy Related Pollutants	10	3	3	4	+1	E-39
Atmospheric Transport and Transformation of Energy Related Pollutants	33	3	3	3	...	E-43
Measurement Systems and Instrumentation Development for Energy Related Pollutants	8	1	10	10	...	E-48
Health Effects of Energy Related Pollutants	2	3	2	2	...	E-53
Total	185	140	153	150	-3	

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980	Page
			(dollars in thousands)			
Full-time Equivalency						
Fuel Processing, Preparation and Advanced Combustion	61	72	66	66	...	E-13
Fuel Extraction	36	32	35	31	-4	E-18
Environmental Assessment of Conventional and Advanced Energy Systems	39	33	32	32	...	E-22
Flue Gas Sulfur Oxide Control	7	7	7	7	...	E-30
Nitrogen Oxide Control	40	36	33	30	-3	E-33
Flue Gas Particulate Control	17	22	22	22	...	E-36
Transport, Fate and Effects of Energy Related Pollutants	28	16	17	17	...	E-39
Atmospheric Transport and Transformation of Energy Related Pollutants	14	7	7	7	...	E-43
Measurement Systems and Instrumentation Development for Energy Related Pollutants	25	34	34	33	-1	E-48
Health Effects of Energy Related Pollutants	4	6	6	6	...	E-53
Total	271	265	259	251	-8	

OVERVIEW AND STRATEGY

For urgent economic and security reasons, the Nation has embarked upon a major effort to reduce its dependence upon scarce fuels, particularly foreign petroleum. The full development and utilization of our domestic energy resources are expected to pose unprecedented problems to the preservation of air and water quality, and to the maintenance of a healthful environment free from hazards of the solid, airborne, and waterborne waste products of domestic energy production and utilization. Foremost among the barriers to reducing successfully our dependence on imported fuels is the requirement for environmental protection.

The Federal Government and private industry are today taking steps that will result in the commitment of billions of dollars to the construction and opertion of conventional energy and synthethic fuel production facilities, to methods of enhanced oil recovery, to accelerated development of mining and extraction operations, to other alternative energy options, and to innovative processes for the more efficent end use of domestic energy supplies. The formation of the Energy Mobilization Board, steps toward a

Synthetic Fuels Corporation, new energy price and tax policies, and actions in the major energy industries all compel the Federal Government to make prompt and far-reaching decisions regarding environmental control technology and standards. These decisions are of immediate and urgent concern to State and local governments nationwide. The lead times for health assessment and control technology development are such that research programs must be implemented now if energy development is to be made compatible with environmental protection.

Program Responsibilities

The Environmental Protection Agency (EPA) has the statutory responsibility to protect the environment in the course of the national program to develop and use the Nation's domestic energy resources to lessen our reliance on imported energy sources. Research and development programs in support of that requirement are mandated by the Clean Air Act, the Federal Water Pollution Control Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act. Energy development and utilization cut across virtually every aspect of industrial, utility, commercial, and residential activity and thus require an exceptionally strong technical and policy basis for effective and equitable regulatory action. The energy-related environmental activities described in this summary form the technical foundation for actions to protect the environment simultaneously with domestic energy development and utilization. They thus represent the basis for Federal environmental policy, which will be implemented by all agencies of the Federal Government.

Furthermore, EPA has the responsibility to review and coordinate the research activities of other Federal agencies with respect to the environment, as they pursue their individual missions contributing to progress toward the national energy goals.

Program Goals

The goals of the energy research and development program are: (1) to provide, sound data necessary for the Agency to establish effective and practical environmental regulations and incentives in extraction, processing and utilization of energy resources, and (2) to provide pollution control options, as soon as practicable, for those extraction, processing and utilization practices which may cause significant health and ecological damage.

The research program on the environmental impacts of energy supply and utilization is integrated with the Agency's operating programs. The resources of this program are specifically used to prepare the information that will be required for writing or implementation at least five major regulations. This information includes:

- The engineering performance and costs of control options for SO_x, NO_x and particulate matter to be used in establishing the New Source Performance Standards for industrial boilers.

- Emission factors for some particulate matter from energy and industrial sources. The Agency is reviewing the National Ambient Air Quality Standard for total suspended particulate matter and may modify the standard to apply to fine or respirable particles. Information on emission factors and control capabilities will be prepared and issued for the development of State Implementation Plans for the attainment of such a future standard.

- Performance data on the economical use of low NO_x burners on electric utility and industrial combustion sources to be used in revising the New Sources Performance Standards for this pollutant.

- Data on the costs and capabilities of technology for disposing of high volume solid wastes, i.e., ashes, and desulfurization sludges from energy technologies, to be used in establishing performance standards for disposal of hazardous wastes under the Resource Conservation and Recovery Act.

- Data on the costs and capabilities of control measures for air or water pollutants and solid waste. This information will be used to prepare guidance documents for synthethic fuel and other alternative energy production facilities. These documents will give industry and permitting officials the information required to make decisions within the time schedules imposed by the Energy Mobilization Board.

Several severe problem areas have been identified. Synthethic fuels from coal and oil shale undergo cleaning, gasification, liquefaction, and other processing techniques which can generate new pollutants whose effects are not known and must be defined. For example, coal gasification processes are known to generate carcinogenic materials which may be released into the environment. There are potential cumulative chronic health and ecological effects of pollutants from new and emerging energy sources, such as advance combustion systems and geothermal facilities. The increased use of coal and oil shale in semiarid western areas raises serious questions about the restoration of mined lands and the degradation of available ground and surface water resources. The expanded interest in off-shore oil may increase the environmental problems associated with petroleum extraction, transportation and refining.

Information on the costs and capabilities of control alternatives must be developed. Some of the areas in which information is lacking include: (1) the effectiveness of mining and reclamation measures in controlling air and water pollution and restoring land productivity, (2) the characterization of toxic materials from combustion or fuel processing operations, (3) the behavior, persistence and fate of air and water pollutants released from energy production, (4) understanding of cumulative regional environmental impacts of energy development and the costs of control programs for mitigation, and (5) the characterization of the nature, the effects on human health, and the paths through environmental media, of hazardous wastes generated in energy production, and usage.

Other research requirements include: better control strategies for the oxides of nitrogen and sulfur, and better definition of their effects on the ecology of streams and lakes and soil leaching; determining the effects due to increased domestic coal use for synthetic fuels and combustion on visibility and productivity of strip mined land; definition of hazards from organic carcinogens and other toxic substances in air and water, and in solid waste (covered by Section 3004 of the Resource Conservation and Recovery Act), together with control strategies. Improving our knowledge of the behavior and effects of coal pollutants is necessary for rational Federal decisions on acceptable development levels and required control measures.

The available options for controlling nitrogen oxide emissions from stationary sources are not presently capable of halting national emissions growth. Current New Source Performance Standards, based upon best demonstrated control technology, have led to coal nitrogen oxide emissions limitations that are still more than twice those for oil, and three times those for natural gas. The research program to modify combustion techniques, which includes the development and demonstration of new burner designs, can reduce coal combustion emissions to levels comparable to those from oil and gas. This program will also support the development of new source pollution standards for industrial boilers and for steam-electric utilities.

Implementation

EPA coordinates the efforts of 17 Federal organizations under the auspices of Interagency Energy/Environment Program. Each of the participating Federal agencies has it own charge--management of Federally-owned resources, management of Federal lands, the development of new fuel sources or cycles, energy conservation, etc. This coordinated effort develops information on the environmental effects of energy development, for use by all of the participating agencies. The Interagency Energy/Environment Program managed by EPA assures that all Federal programs are supported adequately by a well tailored and coordinated environmental research program. EPA management of this interagency program reduces duplication in separate agency research programs, and assures comprehensive coverage of all important environment/energy questions. The results of the multiagency research program are disseminated through a system of publications, joint conferences and symposia supported by EPA's Office of Environmental Engineering and Technology. This Office also conducts an annual review of the Department of Energy (DOE) research and development programs under Section 11 of the Federal Non-nuclear Research and Development Act, to insure adequate consideration of environmental requirements.

EPA's energy research and development program is conducted with Federal laboratory employees and through extramural grants or private contractor projects managed by EPA research staff. The approach is to: (1) conduct environmental assessments of emerging energy extraction, processing and utilization techniques to identify new pollutants and to determine their potential and ecological effects; (2) develop an adequate scientific basis for effective and practical environmental regulations; (3) provide guidance on control technology requirements to Federal and industry groups developing new technologies; (4) assist in the development of control technologies, especially where the Office of Research and Development has particular expertise; and (5) assess the adequacy of existing control technologies.

The energy research and development program is reviewed within EPA's joint research planning and zero based budgeting procedures. The Agency has research coordinating committees to review research activities so that they can be directed for effective support of regulatory programs. The activities on inhalable particulates were included in the control, transport and health effects purview of the research coordinating committee on Gaseous and Fine Particulates Pollutants. Research on cooling tower blow down and discharges from ash and sludge pond was reviewed in the coordinating committee in support of effluent guidelines. Nitrogen Oxide control was reviewed by the Oxidant Research Committee. Finally, a new energy research committee will be formed to assure coordination of energy related environmental research activities across all media.

Budget Request

The Agency requests a total of $107,598,600 for 1981, an increase of $6,234,200 from 1980. Of this total, $10,720,200 is for Salaries and Expenses and $96,878,400 for Research and Development with a decrease of $768,900 and an increase of $7,000,100, respectively. In addition, the Agency is requesting 150 permanent workyears, a decrease of 3 from 1980.

Program Description

The energy research and development program is designed to determine the environmental implications and effects of the Nation's energy development efforts. This energy/environment research and development program involves 17 Federal agencies. A comprehensive plan to classify program content and resources has been developed to assure that the entire range of Federal energy/environment research and development programs is woven together into a manageable frame work. This plan identifies research areas by the type of energy resource, the processes in obtaining and using the energy, and the scientific disciplines required for research on environmental impacts. The program also includes the development of pollution options for conventional energy systems and the assessment of the environmental problems or advantages of new energy technologies being developed by the Department of Energy.

In addition to its activities with other agencies, EPA conducts, within its own laboratories, a widely diversified program. The interagency program uses several mechanisms to minimize duplication of effort by involved Federal agencies. The use of "pass through" funding allows EPA to reimburse other Federal agencies for performing research in areas where they have expertise, for EPA's priority programs. Reviews are conducted and program planning documents are updated annually as basis for managing pass-through funds. EPA management of the interagency program ensures comprehensive coverage of environmental concerns.

The program is divided into two broad segments. The health and ecological effects program; that is, the research activities associated with the behavior and effects of energy related pollutants once they are in the environment. The control technology program is designed to provide information on the types and quantities of pollutants released by energy supply activities and to develop or stimulate the development of control options where necessary. The control technology program consists of six subprograms -- fuel processing, preparation and advanced combustion; fuel extraction; environmental assessments of conventional and advanced energy systems; flue gas sulfur oxide control; nitrogen oxide control; and flue gas particulate control. The health and ecological effects research program has four subprograms--the transport, fate and effects of pollutants on organisms and ecosystems; atmospheric transport and transformation of energy related pollutants; measurement systems and instrumentation development; and health effects of energy related pollutants.

The specific objectives of the program's major components are discussed below:

Fuel Processing, Preparation and Advanced Combustion -- This program participates in the development of advanced technologies for fossil fuel processing by providing environmental assessments, bench-scale research, technology assessments and guidance in process control technology. This program works in close cooperation with the Department of Energy process development and environmental programs to identify and quantify all residuals from fluidized bed combustors, synthethic fuels from coal processes, oil shale development, and coal cleaning. Comprehensive environmental assessments will be performed for these technologies to identify potential environmental problems and corresponding means for control.

Fuel Extraction -- The energy resource extraction program deals with environmental quality problems associated with the technologies and processes for obtaining fuels; oil or natural gas extraction; oil shale development; and coal mining. The major purposes of the research program are: (1) to assess the existing and potential adverse environmental impacts from active and planned oil and gas production, including storage and transportation; (2) to develop methods, technology, and equipment to prevent, control, and abate environmental pollutants from these operations including spill clean-up; and (3) to document the technical/operational feasibility and the cost effectiveness of environmental control options.

Environmental Assessment of Conventional and Advanced Energy Systems -- Research in this program is designed to assess environmental risks, conduct bench-scale systems and/or control technology research and identify environmentally, socially, and economically acceptable alternatives for modified conventional energy systems, advanced energy supply concepts, and energy conserving techniques. The programs, which will assist EPA in selecting policies and in setting environmental standards, conducts comprehensive environmental assessments of energy systems. These integrated technology assessments quantify the cost/risk/benefit tradeoffs of energy systems and pollution control alternatives. A comprehensive assessment of unregulated or regulated residuals from conventional combustion sources is one major project of this program. Other environmental assessments included in this program will examine: industrial energy conservation, wastes as fuels, solar energy, energy-related solid and waterborne residuals, geothermal energy, waste heat recovery, and advanced energy cycles.

Flue Gas Sulfur Oxide Control -- This program develops and evaluates alternative technologies for the removal of sulfur oxide emissions from flue gas at electricity generating plants and industrial boilers. The aim of the program is to develop technical data on which EPA can establish emission standards for sulfur-emitting sources. Efforts are underway to evaluate existing sulfur oxides removal installations, to assess impacts of flue gas desulfurization (FGD) technology, and to assess the applicability of FGD technology to industrial boilers and other sulfur oxide sources.

Nitrogen Oxide (NO_x) Control -- The purpose of this program is to develop the best practicable technology for the control of NO_x emissions from the leading categories of stationary sources and diesel engines. Stationary source categories include utility boilers, commercial/industrial boilers, residential heating systems, stationary engines, and advanced combustion processes. Advanced combustion processes such as advanced coal burner systems are being studied and fundamental engineering and analytical support studies are also being conducted to evaluate the potential of these advanced methods for NO_x emission control and energy conservation. The research on controlled combustion also includes fuel conditioning for sulfur oxide removal.

Flue Gas Particulate Control -- This program identifies and develops effective practicable technology to control aerosol emissions. Major research efforts in the program are: assessment and improvement of conventional systems (electrostatic precipitators, scrubbers, or fabric filters) for abating aerosol emissions; exploration of new and improved methods of control; and bench-scale investigation of specific control methods for major problem sources (low sulfur coal combustion, new fuels, power production, and selected industrial processes).

Transport, Fate and Effects of Energy Related Pollutants on Organisms and Ecosystems -- Research efforts in this program develop the ecological data on fresh water, marine, estuarine and terrestial ecosystems to obtain reliable estimates of the risk associated with accelerated development and utilization of domestic energy resources. In addition, water transport and fate research will emphasize the biological accumulation of pollutants and the transfer of pollutants and end-products through trophic levels. This work is accomplished by the Department of Energy, Department of the Interior, National Institute of Environmental Health Sciences, National Oceanic and Atmospheric Administration, Tennessee Valley Authority, U.S. Department of Agriculture and Environmental Protection Agency with funds made available to the Federal Interagency Energy/Environment Program. The various participating agencies have an array of technical expertise covering many disciplines.

60-531 O - 80 - 57

Atmospheric Transport and Transformation of Energy Related Pollutants -- The transport and processes program addresses the transmission in the air and soil of pollutants emitted from energy operation sources to their destination in man and the environment. Additionally, it covers the physical and chemical changes that the pollutants undergo during their transport. Emphasis in air transport research is on the conversion of sulfur and nitrogen oxides, chiefly from coal burning power plants, to sulfates and nitrates. Formation and transport of photochemical oxidants from various energy sources is also emphasized.

Measurement Systems and Instrumentation Development -- The purpose of this activity is to focus and coordinate the research and development on energy-related measurements and instrumentation which are being performed by the Department of Energy, National Aeronautics and Space Administration, National Bureau of Standards, National Institute of Occupational Safety and Health, National Oceanic and Atmospheric Administration and the Environmental Protection Agency. This program develops monitoring and measurement technology and obtains environmental data needed to support the Agency efforts in: visibility protection; acid rain and fine particulate pollution abatement; assessment of the danger to living coral communities represented by offshore oil and gas drilling; and, the determination of the correlation between fixed station monitoring data and actual human exposure to energy-related pollutants.

Health Effects of Energy-Related Pollutants -- The purpose of this activity is to provide a coordinated effort in the energy-related health effects research undertaken by the Department of Energy, National Institute of Environmental Health Sciences, National Institute of Occupational Safety and Health, and the Environmental Protection Agency with the funds made available to the Interagency Energy/Environment Program. The objective of this activity is the development of energy-related health data which will permit reliable estimates of risk to human health associated with increased development and utilization of domestic energy resources. The health effects program examines possible chronic toxic effects of pollutants through a coordinated program of epidemiological, clinical and toxicological studies, and through the development and use of rapid and sensitive bioscreening methodologies.

SUMMARY OF INCREASES AND DECREASES	(in thousands of dollars)
1980 Energy Program	$101,364
Salaries and Expenses	-767
The decrease is primarily in the health effects and nitrogen oxide control activities.	
Research and Development	+7,002
The increase is comprised of a major initiative in the synthetic fuels area and an increase in the dry scrubber sulfur oxide control program.	
1981 Energy Program	107,599

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $107,598,600 is requested for 1981. Included in this total is $96,878,400 for Research and Development and $10,720,200 for Salaries and Expenses, with an increase of $7,003,100 and a decrease of $768,900, respectively. This represents a net increase of $6,234,200 over 1980.

An increase of $5,714,900 is requested for Fuel Processing. The increased resources will be used to provide additional support to promote the commercialization of an environmentally acceptable synthetic fuels industry as outlined in the President's National Energy Plan of May 7, 1979. An increase of $1,722,900 is requested in sulfur oxide control in order to accelerate the dry sulfur oxide control program.

The other control technology programs will be decreased by a net of $2,392,600. Of this amount, the environmental assessment of conventional and advanced energy systems will be decreased by $1,457,200 and the evaluation of alternative mining practices and oil spill clean-up work will be decreased by $68,200. NO_x control will be decreased by $1,096,700 and particulate matter control alternatives will be increased by $229,500.

The program for determining the health and environmental impacts of energy development will be increased by a net of $1,189,000. Of this amount, the measurement systems and instrumentation program will be increased by $1,169,800; studies of the health effects of energy related pollutants will be increased by $234,500; and work on atmospheric transport and fate of energy related pollutants will be increased by $450,700. The non-atmospheric transport, fate, and effects of energy-related pollutants will be decreased by $666,000.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$102,461
Congressional reduction to travel.....	-38
Proposed supplemental for pay raise.....	+280
Reprogramming for salary costs.....	-1,251
Miscellaneous reprogrammings.....	-88
Current 1980 estimate.....	101,364

The congressional reduction of $2 million to Agency travel costs resulted in a decrease of $38,400 to the energy media.

An increase of $280,600 results from the partial funding of the October 1979 pay raise which is included in a proposed supplemental appropriation.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $1,250,800 to this media. Miscellaneous reprogrammings within the Office of Research and Development resulted in a decrease of $88,000 to the energy media.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$112,589	$101,423
Effect of congressional changes	-38	...
Proposed pay raise supplemental	+280	...
Reprogrammings	+1,339	...
Change in amount of carryover funds available	-422	-59
Program decrease	-9,500	+4,904
Change in rate of obligation	-147	...
Total estimated obligations	101,423	106,268
(From new obligation authority)	(101,114)	(106,018)
(From prior year funds)	(309)	(250)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The changes discussed in the previous section on travel, pay raise supplemental, and reprogrammings resulted in a decrease of $38,000, an increase of $280,000, and a decrease of $1,339,000, respectively.

The amount of carryover funds to be obligated in 1980 is $309,000, a decrease of $422,000 from the 1979 level. In 1981, it is estimated that $250,000 will be obligated from carryover funds, a decrease of $59,000 from the 1980 level.

The decrease originally estimated due to the change in budget authority in 1980 resulted in a decrease of $9.5 million in obligations. The increase in budget authority in 1981 results in an increase to obligations of $4.9 million.

ENERGY

Fuel, Processing, Preparation and Advanced Combustion

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Salaries and Expenses...	$1,889	$2,055	$2,863	$2,762	-$101
Research and Development.....	10,707	11,089	9,959	15,775	+5,816
Total.....	12,596	13,144	12,822	18,537	+5,715
Permanent Positions.....	36	47	48	48	...
Full Time Equivalency.....	61	72	66	66	...

Budget Request

The Agency requests a total of $18,537,300 for 1981, an increase of $5,714,900 from 1980. Included in this total is $2,762,400 for Salaries and Expenses and $15,774,900 for Research and Development, with a decrease of $100,400 and a increase of $5,815,300, respectively. The increase in resources will be used to provide additional support for characterizing emissions and effluents from the production and use of synthetic fuels and from the evaluation of pollution control technology necessary to assure the commercialization of an environmentally acceptable synthetic fuels industry.

Program Description

The President's National Energy Plan calls for the increased use of the Nation's major energy reserves, namely coal and oil shale, in an environmentally acceptable manner. The following three types of processes are designed to meet this objective: fluidized bed combustion, coal cleaning, and synthetic fuel generation from coal (liquefaction and gasification) and oil shale (liquefaction).

Fluidized Bed Combustion (FBC) has the potential for burning coal in a less costly, cleaner and more efficent manner than conventional combustion. Coal cleaning is a control alternative which will be potentially less costly than other sulfur dioxide control alternatives, but has limited application depending on the sulfur content of the coal and its end use. Chemically Active Fluidized Bed (CAFB), a combination of coal gasification and on-site combusion of low BTU gas, allows for use of coal in an environmentally acceptable manner in boilers previously using scarce natural gas resources. The synthetic fuels from coal and oil shale provide scarce liquid and gaseous fuels from our more plentiful energy resources. The National Energy Plan calls for the production of 2 million barrels per day of synthetic fuels by 1990. All of our activities are geared toward assuring the development of these processes in an environmentally acceptable manner.

The program includes the characterization of effluents and emissions, assessment of related environmental impacts, and development and evaluation of necessary pollution control technology for various fuel production processes. The major outputs of this program are three basic documents. They are the Standard Support Plan (SSP), the Environmental Assessment Report (EAR), and the pollution control guidance document (PGD). The SSP consists of a schedule of our activities in a broad technological area (e.g., synfuels from coal) in support of standard setting, and a brief description of the technology and of areas of environmental concern. The EAR is process specific (e.g., Lurgi process for high BTU coal gasification) and describes the process and its present and future development indepth,characterizing all streams with and without pollution control. The PCGD is

technology specific (e.g., high-BTU coal gasification) and includes suggested emission/effluent limits and recommended control technology. It provides an in-depth evaluation of control technology alternatives, including cost versus pollutant reduction curves.

The users of our reports include EPA program offices which use them for standard setting; the EPA regional offices which use them for permitting of large synfuel facilities; industry, who uses them for an early indication of needed control technology to avoid costly retrofits; and other government agencies (e.g., DOE, TVA) that are developing and commercializing synfuel facilities.

1979 Accomplishments

In 1979, obligations included $1,889,100 for salaries and expenses and $10,706,900 for extramural purposes. Significant accomplishments include the following:

Synthetic Fuels

- Completed draft of Standard Support Plan for synfuels from coal.
- Completed an Environmental Assessment Report (EAR) for the SRC (solvent refined coal) liquefaction process.
- Completed an EAR for the Lurgi high BTU coal gasification process.
- Completed EARs for Wellman-Galusha and Willputte-Chapman low BTU coal gasification processes.
- Completed lysimeter study on Paraho retorted spent shale.
- Completed trace metals study of oil shale processing.
- Completed overview of oil shale technology development.
- Studied revegetation of spent oil shade.
- Started-up the chemically active fluidized bed (CAFB) demonstration facility at San Benito, Texas.

Fluidized Bed Combustion

- Evaluated fluidized bed combustion (FBC) waste disposal methods based on experimental units.
- Completed comprehensive analysis on the pressurized FBC miniplant, with and without sorbent regeneration.
- Evaluated FBC solid residue in accordance with proposed regulatory procedures (tentatively found not to be hazardous).

Coal Cleaning

- Completed environmental base line testing at Homer City, Pennsylvania, coal cleaning site.
- Developed resource and process assessment model for evaluating desulfurization potential of U.S. coal reserves.

1980 Program

In 1980, the Agency has allocated a total of $12,822,400 to this program, of which $2,862,800 is under the Salaries and Expenses appropriation and $9,959,600 is for extramural purposes under the Research and Development appropriation. For 1980, the total allocation is divided among the various sub-programs areas as follows:

Coal Cleaning	$ 1,213,000
Fluidized Bed Combustion	4,268,200
Chemically Active Fluidized Bed	657,000
Biomass Conversion	197,000
Synthetic Fuels from Coal	4,517,200
Synthetic Fuels from oil shale	1,970,000
Total Fuel Processing	12,822,400

During 1980, EPA will be conducting major environmental assessment and control technology evaluation efforts in coal gasification, coal liquefaction, and oil shale processing. Fluidized bed combustion, coal cleaning and chemically active fluidized bed processes are also being environmentally evaluated. These efforts will provide a data base and recommendations for the Agency's standard setting offices. Planned activities include:

Synthetic Fuels

- Developing methods for sampling, analysis and continuous monitoring of emissions to quantify total organics from synthetic fuel processes.
- Characterizing toxics and determining inorganic and organic compounds from coal liquefaction and gasification technologies.
- Completing a pollution control guidance document (PCGD) for low BTU coal gasification.
- Continuing detailed characterization of Lurgi Kosovo high BTU coal gasification facility.
- Completing an Environmental Assessment Report (EAR) for the H-coal (hydrocarbor coal) liquefaction process.
- Expanding the data base on the sulfur compound control technology for coal gasification processes.
- Completing EAR for low BTU coal gasification process.
- Evaluating air pollution control technologies for in-situ coal gasification.
- Monitoring groundwater from in-situ oil shale processes.
- Analyzing air and water emissions from abandoned oil shale process sites.
- Analyzing Navaho oil shale reserves to identify trace elements.
- Completing a Standard Support Plan for oil shale.
- Conducting process evaluation and environmental assessment of chemically active fluidized bed process.

Fluidized Bed Combustion

- Characterizing the effectiveness of existing add-on devices for cleanup on the Georgetown University fluidized bed combustor (FBC) and updating the data base for standard setting.
- Investigating the mechanism of NOx formation in FBC process.
- Completing Standard Support for FBC.

Coal Cleaning

- Conducting testing (screening) at 5 coal cleaning plants to characterize effluents.

1980 Explanation of Changes from Budget Estimate

The net decrease of $321,600 results from several actions. An increase of $79,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation, a congressional reduction of $2 million to Agency travel costs resulted in a decrease of $12,300. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $236,400 to this activity.

A reprogramming of $150,000 was made within the energy media to environmental assessment of conventional and advanced energy systems to support the Office of Solid Waste in developing regulations for power plant ash and sludge.

1981 Plan

The Agency requests a total of 48 permanent workyears and $18,537,300 for this program, of which $2,762,400 is for the Salaries and Expenses appropriation and $15,774,900 is for the Research and Development appropriation. This represents and increase of $5,714,900 over 1980. The increased resources will be used to provide additional support for characterizing emissions/effluents from, and evaluating pollution control technology necessary to assure the commercialization of, an environmentally acceptable synthetic fuels industry. The President's National Energy Plan of May 7, 1979, calls for an ambitious energy strategy, including the production of 2.0 million barrels per day in synthetic fuels in 1990. The national energy strategy requires that synthetic fuels production be conducted in an environmentally acceptable manner.

The Environmental Protection Agency (EPA) will accelerate its Research and Regulatory program to accelerate the regulatory process so as to parallel the commericalization of this synthetic fuel industry. This Agency will complete the pollution control guidance documents (PCGD) for synthetic fuels, such as oil shale, indirect and direct coal liquefaction and high and low BTU coal gasification in 1981. These documents will provide environmental guidance, including estimates of process effluent/emissions as well as recommended pollution control technology. In accordance with our proposed regulatory process, legally binding emission/effluent limitations will be established sometime after 1982.

In order to meet these objectives, emission/effluent characterization studies must be conducted and control technology must be evaluated to support EPA standard setting offices. In order to expedite the commercialization effort, the EPA regions must also be supported technically to evaluate synthetic fuel facility design and review permit application. The program plans provide for:

Synthetic Fuels

- Completion of Pollution Control Documents (PCGD) for indirect coal liquefaction and direct coal liquefaction, oil shale processing and fluidized bed combustion (FBC). These PCGDs will provide pollution control guidance to developers and environmental officials to expedite the permitting process and ensure environmental officials to expedite the permitting process and ensure environmental protection.

- Completion of Environmental Assessment Reports (EAR) for low BTU coal gasification industrial Fluidized Bed Combustion (FBC).

- Conducting bench scale wastewater treatment studies on gasifier effluents.

- Supporting EPA regions to evaluate facility design and review applications in the area of coal gasification and liquefaction and oil shale processing.

- Evaluation of pilot control technology of sulfur control at Occidental oil shale site for EPA Region VIII.

- Comparision of near term synthetic fuels technologies as to cost of control, efficiency and environmental impact.

- Continuation of indepth environmental assessment and control technology evaluation of synthetic fuels technologies in support of standard setting offices.

- Expansion of bioassay testing of oil shale processes.

- Development of disposal and treatment techniques for spent shale from oil shale surface retorting.

Fluidized Bed Combustion

- Conducting long term environmental testing at Georgetown University FBC plant.

Coal Cleaning

- Conducting environmental assessment testing including long term monitoring at Homer City, Pa., and two additional physical coal cleaning plants.

- Conducting study of the geological determinants of sulfur variability in Upper Freeport coal seam for Homer City, Pa., coal cleaning site.

ENERGY

Fuel Extraction

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation					
Salaries and Expenses...	$1,061	$1,100	$1,074	$1,057	-$17
Research and Development	2,567	1,933	1,971	1,920	-51
Total.....	3,628	3,033	3,045	2,977	-68
Permanent Positions.....	21	22	21	19	-2
Full-time Equivalency...	36	32	35	31	-4

Budget Request

The Agency requests a total of $2,977,100 for 1981, a decrease of $68,200 from 1980. Included in this total is $1,056,800 for the Salaries and Expenses appropriation and $1,920,300 for the Research and Development appropriation, with a decrease of $16,900 and $51,300, respectively. The overall decrease of $68,200 reflects an increase of $200,000 to support work on unconventional gas extraction and a decrease of $268,200 to reduce work on the impact on coal mining and land reclamation as well as work on oil spill clean up.

Program Description

The fuel extraction program operates under the authorities of the Clean Air Act, the Federal Water Pollution Control Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, and the Toxic Substances Act, as well as the Surface Mining Control and Reclamation Act of 1977. Research and development activities are directed toward the abatement of all types of pollution caused by fuel extraction (oil, gas and coal) and related transportation activities. The major program areas include environmental assessments of problems related to eastern surface mines, eastern underground mines, treatment of mine drainage, western coal mines, oil shale, uranium, transportation of fuels, solid waste from mining and oil spill control. Control techniques for enhanced oil recovery are also included.

1979 Accomplishments

The 1979 obligations included $1,060,800 for salaries and expenses and $2,567,500 for extramural activities. The major emphasis of the 1979 program was placed on problems associated with active mining, especially on newly emerging extraction efforts, while minimum efforts on abandoned mines were continued to keep abreast of the latest reclamation and restoration techniques. In addition, the assessment, development and demonstration of equipment and methods to control and clean up spills of oil on land and water continued. In 1979, we:

- Assessed the treatability of cyanide in discharge water from milling operations.

- Published a report on erosion and sediment control in coal mining operations.

- Prepared a User's Manual for pre-mining planning of eastern surface coal mining.

- Prepared a User's Design Manual for the treatment of acid mine drainage.

- Determined the adverse environmental effects of solid wastes from active and abandoned surface and underground mines.

- Developed a manual on environmentally acceptable techniques for the protection, clean-up, and restoration of ocean, estuarine, inland and marsh shorelines impacted by oil spills.

- Evaluated several oil spill control systems at EPA's Oil and Hazardous Material Simulated Environmental Test Tank (OHMSETT).

1980 Program

In 1980, the Agency has allocated a total of $3,045,300 to this program, of which $1,073,700 is for Salaries and Expenses and $1,971,600 is for extramural purposes under the Research and Development appropriation.

During 1980, the fuel extraction program will continue activities in two major groupings - mining and oil and gas production, including oil spills.

The mining activities include environmental assessments and control technology development for mining in general, including areas such as tailings ponds, eastern surface coal mining, eastern underground coal mining, treatment of mine drainage, western surface coal mining and solid waste from mining.

The oil and gas production activities include environmental assessments and control technology for oil spill control and cleanup; shoreline protection and restoration; off-shore/on-shore oil and gas production and oil/water separation.

In 1980, we will:

- Continue efforts in environmental assessment of toxic pollutants, problem definition and control technology development for the extraction, and handling of energy resources, including coal, oil, and natural gas. Work will be in support of program and agency needs, regional needs, and special requests from local, State and Federal agencies.

- Produce User Manuals to summarize and describe previously verified environmental control and abatement procedures relating to coal extraction, and handling in the United States (both surface and underground operations).

- Develop techniques and systems for use by regional on-site coordinators for directing oil spill cleanup and response efforts and for determining the extent of oil contamination. Included will be field expedient measures for reducing spill impact. Federal, State and local government response personnel, as well as their industry counterparts, will use this information in responding to oil spills.

- Initiate new development in the area of shoreline protection and restoration following oil spills. Hardware and techniques will be used by Regional personnel responsible for oil spill cleanup and will assist them in developing decisions on the best available approaches for given spill circumstances.

- Continue assessment of available control technology in support of the Effluent Guidelines Division to ascertain the best available technology and develop data in support of the new source performance standards for offshore and onshore oil and gas production facilities. Levels of treatment will then be established based on realistic information on technology available to the oil and gas producing industries.

- Initiate development of guidelines for the installation and operation of oil/water separators to meet the best available technology and new source performance standards.

- Develop equipment and techniques to contain and control oil spills under cold climate conditions. A cold climate spill response capability (presently nonexistent) is necessary to cope with the increasing number of oil spills occuring under cold weather conditions.

1980 Explanation of Changes from Budget Estimates

The net increase of $12,300 results from several actions. An increase of $32,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,400. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $16,000 to this activity.

1981 Plan

The Agency requests a total of 19 permanent workyears and $2,977,100 for this program, of which $1,056,800 is for the Salaries and Expenses appropriation and $1,920,300 for the Research and Development appropriation. This represents decreases from 1980 of 1 permanent workyear and $68,200, due to a decrease in the work on assessing the environmental impact of coal mining and land reclamation, as well as a decrease in work on oil spill cleanup.

The 1981 plan for the fuel extraction research program is to assess, develop, and verify control technology for solid fuel, oil and gas extraction which will assure that the recovery of the Nation's fuel reserves is conducted in an environmentally acceptable manner. To this end, equipment, methods, and technology are assessed and developed to prevent, control, and abate the discharge of environmental pollutants from both point and nonpoint sources. Pollution sources include facilities for extraction, production, storage, and transportation of coal, oil shale, uranium, oil and gas. Both normal operations and accidental spills are examined.

Planned accomplishments for 1981 are to:

- Continue the environmental assessment of pollutants caused by the extraction and handling of energy resources, including coal, oil shale, oil and gas, for both traditional and advanced recovery techniques. These methods involve in-situ mining and leaching, underground retorting, and tertiary oil and gas recovery as well as more conventional mining methods. Oil spill control and clean-up are also included.

- Report on the nature of pollutants produced during the mining, handling, and solid waste disposal phases of the leading conventional and in-situ processes for recovery of oil from shale.

- Complete an assessment report of western coal development on surface and groundwater contamination.

- Evaluate control technology for pollutants such as acid drainage and heavy metals released during extraction processes.

- Develop additional techniques for oil spill prevention, response, cleanup and disposal.

- Report on methods to recover uranium utilizing solution mining techniques in an environmentally acceptable manner.

- Report on environmental pollution potential of enhanced (tertiary) oil and gas recovery methods.

- Initiate environmental assessments for the extraction of unconventional gas from tar sands, Devonian shale, coal seams and heavy oil.

ENERGY

Environmental Assessment of Conventional and Advanced Energy Systems

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Salaries and Expenses..	$ 1,519	$ 1,688	$ 1,670	$ 1,645	-$25
Research and Development.....	15,762	11,706	11,738	10,306	-1,432
Total....	17,281	13,394	13,408	11,951	-1,457
Permanent Positions....	24	20	24	24	...
Full Time Equivalency..	39	33	32	32	...

Budget Request

The Agency requests a total of $11,950,500 for 1981, a decrease of $1,457,200 from 1980. Include in this total is $1,644,700 for the Salaries and Expenses appropriation and $10,305,800 for extramural activities under the Research and Development appropriation with decreases of $25,600 and $1,431,600, respectively. This reduction in resources results from (1) a decision to eliminate biological and chemical assay testing from environmental assessments and (2) a reduction in coal-oriented integrated technology assessments (ITAs).

Program Description

This program includes environmental assessments of conventional combustion in industrial and electric utility and industrial power production, as well as assessments of energy conservation, solar energy, and geothermal energy systems. The program also makes integrated technology assessments. The industrial and utility conventional combustion program emphasizes the characterization and quantification of the air, water, and land pollution potentials, and the assessment of control techniques for criteria and noncriteria residuals. Major efforts are being directed toward the development of procedures for disposal of fly ash and flue gas desulfurization sludges. Integrated technology assessments provide an analysis of the environmental, economic, and social impacts of alternative energy supply using both local and regional scenarios. The conservation and advanced systems studies provide assessments of the environmental and economic impact of energy conservation and of advanced energy systems, including solar, geothermal, and biomass systems. These environmental assessments are detailed characterizations of the air emissions, water effluents and solid wastes released to the environment from energy sources. These assessments anticipate the severity of associated environmental risks, provide preliminary targets for emission limitation goals, and assess the ability of existing control methods to attain these goals. The program also incorporates limited efforts in pollution control development and evaluation.

1979 Accomplishments

In 1979, obligations totalling $17,280,700 included $1,519,100 for salaries and expenses and $15,761,600 for extramural purposes.

During 1979:

- The impacts anticipated from increased energy development in the Western U.S. were documented (final report).
- A new regional air quality modeling capability was applied to problems of long-range transport of air pollutants and acid rain.
- The secondary benefits of emission control systems used to meet NSPS for utility boilers were catalogued.
- Emission factors and health impacts data for non-criteria pollutants on the PSD (prevention of significant deterioration) list were prepared.
- Pollutants from several resource recovery facilities were characterized.
- The waste disposal problems facing the electric utility industry were assessed.
- The technical, economic, and viability of innovations applied at the first solar-assisted wastewater treatment plant received preliminary evaluation.
- The ability of technology to remove hydrogen sulfide from geothermal-powered electricity generating facilities was demonstrated, although continued developmental work is required.

1980 Program

In 1980, the Agency has allocated a total of $13,407,700 to this program, of which $1,670,300 is for the Salaries and Expenses appropriation and $11,737,400 is for extramural purposes under the Research and Development appropriation. The allocation of 1980 funds in the Environmental Impacts of Conventional and Advanced Energy Systems Program is as follows:

Conventional Combustion Solid and Liquid Wastes	$ 3,450,000
Conventional Combustion Environmental Assessment	3,400,700
Energy Conservation and Advanced Systems	2,990,000
Integrated Technology Assessment	3,567,000
Total	$13,407,700

1980 Explanation of Changes from Budget Estimate

The net increase of $13,700 results from several actions. An increase of $43,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $425,200 to this activity.

A transfer within the energy media was made from energy fuel processing, preparation and advance combustion, $150,000; energy nitrogen oxide control, $150,000; and energy-flue gas particulate control $100,000, to provide support to the office of Solid Waste in developing regulations for power plant ash and sludge.

1981 Plan

The Agency requests a total of $11,950,500 for this program, of which $1,644,700 is for the Salaries and Expenses appropriation and $10,305,800 is for the Research and Development appropriation. The allocation of 1981 funds is as follows:

Conventional Combustion Solid and Liquid Wastes	$ 3,193,000
Conventional Combustion Environmental Assessment	3,221,500
Energy Conservation and Advanced System	2,758,000
Integrated Technology Assessment	2,778,000
Total	$11,950,500

Support for this program will be reduced by $1,457,200 from the 1980 level. This largest part of this reduction is in coal-related modeling work in the Integrated Technology Assessment program. The balance of the reduction is in characterization studies of health and environmental impact in each of the other three program areas.

Conventional Combustion Solid and Liquid Wastes

The overall objective of this activity is the identification, characterization, and assessment of liquid and solid effluents (including waste heat) from electricity generating facilities, and the development, where appropriate, of control technology for the environmentally acceptable disposal of these effluents. The efforts in this activity are designed to identify potential environmental effects and to define and reduce the costs of power plant waste disposal options.

Primary emphases in this activity are to develop the data required to promulgate effluent guidelines required by the Federal Water Pollution Control Act and to provide the background information required to promulgate regulations required by the Resource Recovery and Conservation Act for the disposal of wastes generated by the utility industry.

1979 Accomplishments

The total allocation for this area for 1979 was $3,327,700. The major accomplishment during 1979 was the completion of an assessment of waste disposal problems facing the electric utility industry. This assessment showed that the industry must be encouraged to reduce the quantities of waste generated and that greater utilization of these wastes is possible.

1980 Program

The total allocation for this program area for 1980 is $3,450,000. These funds will be utilized primarily to provide direct support to EPA regulatory offices. This support consists of:

- Obtaining and analyzing sufficient data for the promulgation of guidelines or regulations for the storage, treatment and disposal of flue gas desulfurization scrubber wastes from coal-fired steam electric generators.

- Performing pilot-plant evaluations of the technical and economic feasibility zero discharge of ashes for coal-fired power plants.

1981 Plan

The total request for this program area in 1981 is $3,193,000. These funds will be utilized to complete the acquisition of the data required to promulgate the regulations for liquid and solid waste from coal-fired steam electric generators. This work had been planned for completion in 1980. Due to changed and additional technical requirements, the information needs will be met in 1981.

The information provided will be as follows:

- A characterization of fly ash alone and fly ash/sludge mixtures to determine if different disposal techniques are required for each of the two situations.

- An examination of disposal techniques used by private industry for fly ash only and fly ash and sludge.

- An evaluation of the effects of promising disposal techniques on groundwater and surface waters.

- An evaluation of the costs of promising fly ash/sludge disposal techniques and of the economic impacts of these on the utility industry.

In addition, the program will provide engineering support for the preparation of revised effluent guidelines for the steam-electric industry.

Conventional Combustion Environmental Assessment

The objective of the program is the comprehensive assessment of the environmental, economic, and energy impacts of multimedia emissions of pollutants from stationary industrial, utility, residential, and commercial conventional combustion processes. Primary emphases of the program are identifying and evaluating (1) the relationships between various emissions and residuals from conventional combustion, (2) multi-pollutant synergistic impacts, (3) cross-media impacts, (4) environmental impact tradeoffs as relative emission levels of individual pollutants are adjusted by control systems, and (5) unregulated pollutant emissions, impacts, and control methods. The program seeks to integrate information and data from various environmental efforts (e.g., the SOx, NOx, etc. R&D programs) into a systematic, coordinated, environmental assessment structure.

1979 Accomplishments

The total allocation for this program area for 1979 was $4,509,000. Major outputs included the following:

- Preparation of five issue papers examining emissions from conventional combustion sources: (1) hazardous emissions from distillate, fired heating units, (2) primary sulfate emissions from coal and oil combustion, (3) emissions from waste co-firing with fossil fuels, (4) trace metals from fossil fuel combustion, and (5) polycyclic organic matter (POM), including dioxin, from combustion sources.

60-531 O - 80 - 58

- Preparation of special reports for the Regulatory offices on conventional combustion emissions, including volatile organics emissions from utility boilers, and emission factors and health impacts data for non-criteria pollutants on the Prevention of Significant Deterioration (PSD) list.

- Preparation of a report assessing secondary benefits of emission control systems used to meet New Source Performance Standards (NSPS) for utility boilers.

- Seven reports describing field test results of combustion modification technology to reduce emission levels.

- Preparation of a report cataloging emission rates of criteria pollutants and POM from fireplaces and woodburning stoves (indications: possible significant rates of CO, POM, other organics).

1980 Program

The total allocation for this program is $3,400,700. The program includes the following:

- Completing characterization of emissions from all conventional combustion categories to provide a comprehensive data base for use in estimating environmental impacts and in evaluating alternative controls.

- Providing bioassay results on conventional combustion residuals to identify the presence of significant levels of potentially toxic, carcinogenic, and hazardous pollutants.

- Supporting the Agency's study of the extent of dioxin and other POM formation in combustion processes.

- Completing initial field studies and assay tests on hazardous organic (POMs, etc.) emissions from distillate-fired heating units.

1981 Plan

The total allocation for this program in 1981 is $3,221,500. The transition of the program focus from data base development and special studies to one which concentrates on analyses of high priority issues identified in earlier work or by regulatory offices will be complete. The major emphasis of the program will be on the characterization and environmental assesssment of high molecular weight organics (including dioxins and other POMs) from major combustion sources (including utility boilers, industrial boilers, and residential furnaces).

Energy Conservation and Advanced Energy System

The general objectives of this program are to (1) assess developing environmental issues associated with energy conservation methods and advanced energy systems and (2) develop pollution control technologies for resource recovery, energy-conserving industrial processes, advanced energy conversion cycles, and advanced energy systems--solar and geothermal energy. Technologies are under development by the Department of Energy, the Department of Housing and Urban development, and other agencies in these areas. Outputs will support these interagency working groups--the interagency Geothermal Coordinating Council, the interagency Task Force on Energy Conservation in Industry, as well as EPA regulatory responsibilities, by assuring the environmental compatibility of techniques and technologies in each subject energy area.

1979 Accomplishments

The total allocation for this program area in 1979 was $4,038,000. The major accomplishments include the following:

- Characterized emissions from five resource recovery facilities.
- Commenced construction of a mobile pyrolysis demonstration unit capable of converting agricultural wastes into useful char and oil.
- Joined with DOE in an analysis of the environmental ramifications of the Minneapolis/St. Paul district heating demonstration.
- Completed a preliminary evaluation of the technical, economic, and energy viability of innovations applied at the first solar assisted wastewater treatment plant.
- Continued evaluations of H_2S removal technologies for geothermal-powered electricity generating facilities.
- Continued studies of the indoor air pollution ramifications of energy-conserving building designs.

1980 Program

The total allocation for this program area in 1980 is $2,990,000. The major planned activities are:

- Performing tests to determine operational and environmental effects of combusting hazardous wastes with refuse-derived fuels and/or coal in incinerators and boilers.
- Continuing studies of the Minneapolis/St. Paul cogeneration system, industrial conservation studies, and "wastes as fuel" pollutant characterization and control technology performance studies.
- Continuing an evaluation of techniques to seal up sprayed asbestos materials in buildings which otherwise create a cancer risk in indoor environments; producing instructional films and other educational materials describing sealing and/or removing asbestos materials in buildings.
- Initiating (with DOE, industry, and EPA regulatory offices) revision of the pollution control guidance document reviewing and updating emission characteristics data, controls performance data, and pollution control guidance for geothermal energy systems.
- Completing evaluation of the leading technology for removal of H_2S from geothermal streams.
- Completing evaluation of the first solar-assisted, energy-conserving wastewater treatment plant.
- Completing assessment of the potential environmental effects of high rates of solar energy system application on ambient air quality in three AQCRs.

1981 Plan

The total request for the program area in 1981 is $2,758,000. The major work areas for this program planned in 1981 include:

- Distribution of an updated pollution control guidance document for geothermal energy systems.

- Continued assessment of hazardous air pollutant emissions and of control capabilities for municipal and hazardous waste combustion.

- Continued assessment of the relative contributions of indoor and outdoor sources of hazardous air pollutants to indoor levels.

- Characterizing geothermal solid waste (sludges, drains, muds, etc.) and assessing the capabilities of disposal options.

- Preparing a manual for wastewater treatment plants on how to incorporate solar energy systems and energy conserving designs into new facilities.

Integrated Technology Assessment

The overall objective of the integrated technology assessment (ITA) program is to identify environmentally, socially, and economically acceptable alternatives for meeting national energy objectives, and to assist in the selection of "optimum" policies for the attainment of associated environmental quality goals. This objective will be met by:

- Performing studies to evaluate the cost/risk/benefit trade-offs of energy production and pollution control alternatives.

- Conducting technology assessments which evaluate alternative energy technologies and approaches for implementing energy development, preventing environmental damage, and securing related benefits.

- Identifying gaps in present research programs and indicating new priority research topics which must be addressed in order to support direct Agency responsibilities.

1979 Accomplishments

The total allocation for this program area in 1979 was $5,406,000. Accomplishments include:

- Completion of the comprehensive final report on the Technology Assessment of Western Energy Resource Development. The study examined a wide range of potential impact of proposed rapid energy development and explored policy options for mitigating these impacts.

- Development of regional air quality modeling capabilities and application to long-range air pollutant transport problems, notably in the Ohio River Basin and across the U.S. - Canada border.

- Completion of a Congressionally-mandated review of Federal non-nuclear energy research focusing primarily on the management process by which environmental concerns are considered in technology research decisions. A report outlining recommended improvement in the process was proposed.

- Completion of detailed analysis of utility New Source Performance Standards, designed to present the critical uncertainties which will influence utility costs, coal choices and pollution control measures for possible to alternative standards.

- Completion of Technology Assessment Modeling Project (TAMP) projections of future national and regional economic activity, and environment residuals resulting under alternate assumptions. Projections are used as an aid in environmental research planning, as an input to the Agency's Environmental Outlook and Research Outlook reports.

1980 Program

The total allocation in 1980 is $3,567,000. In 1980, the Ohio River Basin Energy Study will be completed. In addition, program plans include:

- Performing congressionally-mandated analyses of the environmental and conservation aspects of Federal non-nuclear research programs. The 1980 analyses will focus primarily on conservation and solar energy programs.

- Continuing refinement and application of regional air quality modeling capabilities with particular attention to the impact of long range transport of air pollutants on acid precipitation problems.

- Exercising of the Technology Assessment Modeling Project (TAMP) capabilities and electric utility and regional air quality models to develop alternative strategies for reducing acid precipitation problems and to determine the economic costs of such strategies.

- Assessing and beginning the development of a model capable of assisting in the analysis of alternative regulatory strategies for promoting industrial coal use and controlling the environmental effects of coal burning.

1981 Plan

The total request for this program is $2,778,000. The program will include:

- Performing analyses of Federal non-nuclear energy research programs and publishing the annual Report to Congress based on the findings of the analyses.

- Completing a comparative analysis of economic competitiveness and environmental effects of emerging pollution control technologies for sulfur and nitrogen emissions.

- Providing projections of trends in economic activity and environmental residuals as input to the Agency's Environmental Outlook and Research Outlook Reports.

- Completing development of the ITA coal supply model linking major producing mine units with major coal burning facilities.

- Completing analysis of alternative strategies for mitigating acid precipitation problems and the cost associated with each strategy.

ENERGY

Flue Gas Sulfur Oxide Control

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Salaries and Expenses...	$238	$329	$334	$368	+$34
Research and Development.....	2,816	1,560	1,457	3,146	+1,689
Total.....	3,054	1,889	1,791	3,514	+$1,723
Permanent Positions.....	6	5	5	5	...
Full-time Equivalency.....	7	7	7	7	...

Budget Request

An appropriation of $3,513,500 is requested for 1981, of which $367,500 is for the Salaries and Expenses appropriation and $3,146,000 is for the Research and Development appropriation representing an increase of $34,000 and $1,688,900, respectively, above the 1980 level. The increased level of resources will be used to obtain long term performance and economic data from commercially operated, full scale spray dryer SO_2 control systems, and to demonstrate the effectiveness of adipic acid as an additive to increase lime/limestone flue gas desulfurization reliability.

Program Description

This program includes development of sulfur oxide pollution control technology for electric utility and industrial power generation. Major efforts are directed toward developing the technical and economic data base required to support EPA regulatory and enforcement activities; towards improving FGD (flue gas desulfurization) system reliability and reducing operating and capital costs; and transferring the technological innovations to the public sector.

1979 Accomplishments

In 1979, obligations included $237,700 for inhouse expenses and $2,816,400 for extramural activities, totaling $3,054,100.

Accomplishments in 1979 included the following:

- Compliance testing was completed at the dual alkali FDG installation at Louisville Gas and Electric's Cane Run No. 5 and the long term test program was initiated.
- The Fourth International Symposium on Flue Gas Desulfurization was held with 1,000 people in attendence.
- The evaluation of dry sulfur oxide control processes on low-sulfur coal fired utility and industrial boilers was initiated. Final negotiations were completed to begin the full scale demonstration of adipic acid modified limestone wet scrubbing.

1980 Program

In 1980, the Agency has allocated a total of $1,790,600 to this program of which $333,500 is under the Salaries and Expenses appropriation and $1,457,100 is for extramural purposes under the Research and Development appropriation.

The 1980 program is intended to complete the evaluation of the dual alkali FGD process; to continue to exploit the recent breakthroughs in dry SO_2 control; to maintain the technology transfer efforts; and to coordinate the EPA's flue gas desulfurization efforts with the Department of Energy. Specific planned accomplishments include:

- Complete the dual alkali evaluation program at Louisville Gas and Electric. The final report will provide an evaluation of performance and economic factors using lime and limestone as a regenerating reagent.

- Complete the full scale evaluation of performance and economics of adipic acid modified limestone wet scrubbing. Special attention will be given to reliability and economic impacts.

- Initiate pilot scale evaluation of two dry SO_2 control technologies; spray dryers and macholite injection into the flue gas.

- Complete the review of the state of the art of dry SO_2 control technologies which have the potential to lower the cost of control and reduce the energy penalty associated with SO_2.

1980 Explanation of Changes from Budget Estimates

The net decrease of $98,400 results from several actions. An increase of $8,100 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $104,500 to this activity.

1981 Plan

The Agency requests five permanent workyears and $3,513,500 for this program, of which $367,500 is for the Salaries and Expenses appropriation and $3,146,000 is for the Research and Development appropriation. The increase in funding of $1,722,900 will allow for the expansion of the dry scrubber SO_2 control program to gather long term performance data and engineering/economic analyses of full scale spray dryer SO_2 control technology on utility and industrial boilers. In addition to an expanded dry SO_2 control program, the increased level of resources will be used to demonstrate a reliable continuous pollutant monitoring system for FGD equipped boilers and to demonstrate the performance of adipic acid on a non-compliance FGD system.

Specific planned accomplishments are:

- Conduct long-term performance monitoring of a full-scale, spray dryer SO_2 control system on a utility boiler burning western, low-sulfur coal. This project ouput will provide national data for the Congressionally mandated four year review of the recently revised Standards of Performance for Utility Boilers.

- Conduct long-term performance monitoring of a full-scale, spray dryer SO_2 control system on an industrial boiler burning eastern, low sulfur coal. The project outputs would corroborate the projected economic savings which are associated with the spray dry technology.

- Assess the current state-of-the-art of flue gas desulfurization technology. This assessment includes conventional lime/limestone wet scrubbers, adipic acid modified limestone wet scrubbing, dual alkali wet scrubbing, and dry SO_2 control processes. This study would support the review of utility boiler regulations scheduled for 1983.

- Conduct long-term performance monitoring of a full scale demonstration of adipic acid modified limestone wet scrubbing of a noncompliance flue gas desulfurization system. The data would provide needed full scale testing of this economical alternative to lime/limestone wet scrubbing to achieve compliance with the recently revised utility boiler SO_2 regulations. This technology offers the promise of a more reliable SO_2 control than conventional wet scrubbers.

ENERGY

Nitrogen Oxide Control

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses.....	$1,717	$1,518	$1,758	$1,514	-$244
Research and Development.....	12,162	12,297	11,823	10,970	-853
Total.....	13,879	13,815	13,581	12,484	-1,097
Permanent Positions	30	23	22	20	-2
Full-time Equivalency	40	36	33	30	-3

Budget Request

The Agency requests a total of $12,484,200 for 1981, a decrease of $1,096,700 from 1980. Included in this total is $1,514,000 for the Salaries and Expenses appropriation, and $10,970,200 for the Reseach and Development appropriation, a decrease of $244,400 and a decrease of $852,300, respectively. The reduction in resources is possible because funding of the industrial boiler low NOx burner demonstration program has been completed.

Program Description

This program includes nitrogen oxide pollution control research and development relating to emissions of nitrogen oxide from electric utility boilers, industrial boilers, process furnaces, and other stationary sources. Successful conduct of such a program is important since NOx emissions from stationary sources are projected to increase substantially over the next two decades. This is primarily due to the projected increased combustion of coal and the current absence of cost effective NOx control technology. The program focuses upon two major nitrogen oxide control technologies: combustion modification and flue gas treatment. The combustion modification program is divided into technology development and technology application. The smaller flue gas treatment sub-program maintains an awareness of Japanese NOx control technology development and commercial status and involves pilot scale testing of promising concepts applicable to U.S. coals.

1979 Accomplishments

In 1979, obligations included $1,716,500 for salaries and expenses and $12,162,400 for extramural purposes for a total of $13,878,900. In 1979 the Agency:

- Selected two industrial host sites for the demonstration of the low NOx coal burner.
- Demonstrated that NOx emission level from the low NOx coal burner are not affected by multiple burner arrays.

- Completed the assessment of NOx control technology applicable to industrial boilers in support of the development of a Standard of Performance for Industrial Boilers.

- Initiated field testing at industrial boilers which are equipped with combustion modification technology to determine long term NOx emission levels in support of the Standard of Performance for Industrial Boilers.

- Provided technical support to the regional construction permit programs.

- Initiated bench scale evaluation of low NOx burner design concepts for residual oil and synthetic liquid fuels from coal and shale.

1980 Program

In 1980, the Agency has allocated a total of $13,580,900 to this program of which $1,758,400 is for the Salaries and Expenses appropriation and $11,822,500 is for extramural purposes under the Research and Development appropriation. The major activities planned for 1980 are to continue the development and demonstration of the low NOx coal burner, continue field testing of combustion modification concepts and continue the development of energy efficient NOx control concepts for stationary internal combustion engines and stationary gas turbines. Program activities and planned accomplishments are to:

- Install low NOx coal burners at the industrial host sites and conduct initial performance testing. The program goal is an NOx emission rate of 0.2 pounds per per million BTU (about 80 percent control).

- Select a host site to demonstrate the low NOx coal burner in a utility boiler application.

- Complete the long term NOx monitoring program to establish a data base for the Standard of Performance for Industrial Boilers.

- Complete the pilot scale evaluation of two flue gas treatment processes which are capable of reducing NOx emissions by 90 percent.

- Continue the development of low NOx emission systems for residual oil and synthetic liquid fuels from coal and shale.

- Initiate the demonstration of "dry" NOx control technology for stationary gas turbines. The dry NOx control is more fuel efficient then the current state-of-the-art "wet" NOx control.

- Initiate the evaluation of the potential for combined SOx/NOx control based upon the addition of limestone to the coal prior to combustion in the low NOx burner. This process could lower SOx control costs by 50 percent.

1980 Explanation of Changes from Budget Estimates

The net decrease of $234,100 results from several actions. An increase of $40,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs results in a decrease of $6,000. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $118,900 to this activity.

A reprogramming of $150,000 was made within the energy media to energy - environmental assessment of control and advanced energy systems to support the Office of Solid Waste in developing regulations for power plant ash and sludge.

1981 Plan

The Agency requests a total of $12,484,200 for this program, of which $1,514,000 is for the Salaries and Expenses appropriation and $10,970,200 is for the Research and Development appropriation. This represents a total decrease of $1,096,700 from the 1980 level. The reduced level of resources is due to completion of the funding for the industrial boiler low NOx coal burner demonstration program.

Major activities planned for 1981 are to continue the low NOx coal burner demonstration program, to develop NOx control concepts for synthetic liquid fuels, and to evaluate NOx control technologies for stationary internal combustion engines and gas turbines. In addition the following are planned:

- Installation and initial performance testing of the low NOx coal burner at a utility boiler host site.
- Demonstration of the effectiveness, economics, and energy impacts of NOx control for industrial, stoker fired boilers.
- Development of low NOx burners for heavy oil fired field stream generators which are used in the recovery of the recently deregulated heavy oils.
- Prototype evaluation of NOx control technology for stationary internal combustion engines.
- Development of low NOx burners for the combustion of high nitrogen synthetic liquid fuels.
- Continuation of the development of simultaneous SOx/NOx control through limestone addition to the coal fed to the low NOx coal burner. This technology has the potential for 90 percent SO_2 reduction and 85 percent NOx reduction at significant capital and annual cost savings.

ENERGY

Flue Gas Particulate Control

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1901 vs. 1980
		(dollars in thousands)			
Salaries and Expenses	$723	$883	$1,099	$1,129	$30
Research and Development.....	8,669	7,117	6,712	6,911	+199
Total.....	9,392	8,000	7,811	8,040	+229
Permanent Positions....	14	13	15	15	...
Full Time Equivalency..	17	22	22	22	...

Budget Request

The Agency requests a total of $8,040,000 for 1981, an increase of $229,500 from 1980. Included in this total is $1,128,600 for the Salaries and Expenses appropriation and $6,911,400 for the Research and Development appropriation, with an increase of $30,100 and $199,400, respectively. This increase in resources will be used to provide additional support to determine inhalable particulate matter emission factors.

Program Description

The goals of this program are to assess and develop technology for the control of emissions of particulate matter, particularly those that affect human health and welfare.

More specifically, its objectives are to:

- Assess and improve the effectiveness of conventional particulate control technology to meet existing and proposed particulate emission regulations.
- Ensure that technology is available to permit increased use of low sulfur western coals without exceeding existing and proposed particulate emissions standards.
- Characterize inhalable particulate emissions from stationary and fugitive sources to support the Agency target to set an ambient standard by 1982-1983.
- Develop and evaluate improved inhalable particulate matter control technology for stationary and fugitive emission sources.

1979 Accomplishments

In 1979, obligations included $723,400 for salaries and expenses and $8,668,500 for extramural purposes, for a total of $9,391,900. In 1979 the Agency:

- Initiated a field sampling program to characterize inhalable particulate matter (IPM) emissions from industrial sources to support the standard setting effort.
- Converted the existing fine particulate emissions data bank to cover the inhalable particulate size range, which allowed the Agency to make the initial identification of various emission factors for stationary sources.

- Developed a means of predicting fly ash resistivity from coal and ash analysis, and predicting the performance of electronic precipitators using flue gas conditioning additives. This provided the Office of Enforcement a basis for establishing an interim particulate emission compliance policy.

- Established the technical feasibility of augmenting electrostatic precipitator (ESP) performance by using a low cost precharger device. This device is suitable for new or retrofit applications and meets the revised particulate New Source Performance Standard (NSPS) for utility boilers.

- Developed data on costs, performance and impacts of conventional particulate control devices to support the proposed NSPS for Industrial Boilers.

- Completed an initial assessment of the potential of dust trapping devices to control diesel exhaust particulate emissions in support of the Agency effort to set a new standard in 1982.

- Jointly conducted a workshop on particulate control with the Republic of West Germany, and a symposium on "Particulate Control and Measurement" with the Soviet Union. Conducted the Third International Conference on all aspects of particulate control, measurement, effects and standards.

- Demonstrated the feasibility of using felt filter baghouses for industrial boiler flue gas cleaning applications.

- Completed Phase I evaluation of baghouse usage on a large low-sulfur coal utility boiler. This technology is finding increased applications in low-sulfur coal burning utilities.

- Completed a demonstration of a condensation scrubber application on an iron cupola using 30 percent less energy than a comparable conventional scrubber.

1980 Program

In 1980, the Agency has allocated a total of $7,810,500 to this program of which $1,098,500 is for the Salaries and Expenses appropriation and $6,712,000 is for extramural purposes under the Research and Development appropriation. The 1980 program will expand efforts to characterize and develop control technology for fugitive dusts in urban areas exceeding national and State limits for ambient particulates. Additionally, program activities and planned accomplishments are to:

- Continue the characterization of inhalable particulate matter from priority emission sources. This activity is part of the Agency strategy to establish emission factors to guide States in their implementation plans to control ambient levels of inhalable particulate matter.

- Initiate long term evaluation of baghouse applications on large, low-sulfur coal utility boilers to form a basis for New Source Performance Standards revisions in the mid-1980's.

- Complete evaluation of full scale baghouse for low sulfur coal utility boilers.

- Continue second phase of electrostatic precipitator (ESP) precharger development and evaluation program.

- Complete the assessment of flue gas conditioning agents as a means to improve ESP performance for low sulfur coal fly ash, and initiate non-additive means to improve in-use ESP performance.

- Continue ESP research on particulate reentrainment, turbulence and power supply effects with empnasis on retrofit applications in non-compliance areas.

- Field test fugitive emissions control techniques and evaluate control methods for urban fugitive dusts to provioe State Implementation Plans (SIP) guides in non-compliance areas.

- Continue transfer of particulate control technology via sponsorship of conferences and issuance of technical reports.

1980 Explanation of Change From Budget Estimates

The net decrease of $189,500 results from several actions. An increase of $25,900 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $4,000. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $111,400 to this activity.

A transfer of $100,000 was made within the energy media to environmental assessment of conventional and advanced energy systems to support the Office of Solid Waste in developing regulations for power plant ash and sludge.

1981 Plan

The Agency requests a total of $8,040,000 for this program, of which $1,128,600 is for the Salaries and Expenses appropriation and $6,911,400 is for the Research and Development appropriation. This represents increases of $30,100 and $199,400, respectively. The increase in resources will be used to provide additional support to determine inhalable particulate matter emission factors. During 1981, efforts will support the agency regulatory program. In 1981, the program objectives are to:

- Complete the characterization of inhalable particulate matter emissions from important sources. This information is required by the Air Program Office to allow selection of appropriate control technology for an ambient inhalable fine particulate standard.

- Continue evaluation of a prototype electrostatic precipitator (ESP) precharger for enhancing particulate control of low-sulfur coal fly ash.

- Continue technology research to control the impacts of fugitive dusts on urban areas with special emphasis on non-compliance areas.

- Initiate control technology assessments and development efforts to minimize particulate (fugitive and dusted) emissions from the production and use of synfuels.

- Determine capability of FGD scrubbers for particulate removal to meet the recently promulgated New Source Performance Standard for utility boilers.

- Continue ESP research on reentrainment, turbulence and flue gas additives as they affect equipment performance.

- Continue research on condensation aerosols and filter design fundamentals.

- Transfer technology on inhalable particulate matter control through the sponsorship of workshops, international conferences and technical reports.

ENERGY

Transport, Fate and Effects of Energy Related Pollutants

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses.....	$1,230	$1,299	$894	$902	+$8
Research and Development.....	14,908	13,349	14,439	13,765	-674
Total.....	16,138	14,648	15,333	14,667	-666
Permanent Positions	10	3	3	4	+1
Full-time Equivalency	28	16	17	17	...

Budget Request

The Agency requests a total of $14,667,300 for 1981, a decrease of $666,000 from 1980. Included in this total is $902,200 for Salaries and Expenses and $13,765,100 for Research and Development, with an increase of $7,600 and a decrease of $673,600, respectively. This decrease results from a reprogramming of the water transport and fate research program into this program element in 1980 which is not carried forward into the 1981 program.

Program Description

The Energy Transport, Fate and Effects Program assesses the effects of present and proposed energy-related activities on aquatic and terrestrial ecosystems. The program is interagency in structure, utilizing the scientific expertise and facilities within six Federal agencies. Through this structure, an environmental research program of national scope has been established to include: (1) the evaluation of the impact of offshore oil and gas extraction activities, (2) an analysis of the transport, fate and effects of energy-related pollutants in marine and freshwater environments, (3) the development of techniques to mitigate adverse environmental impacts from mining operations, (4) the assessment of the effects of atmospheric pollutants, including acid rain, on aquatic and terrestrial systems, (5) the identification of the ecological hazards associated with new energy technologies, and (6) the development and validation of test methodologies to evaluate the environmental effects of energy related chemicals.

1979 Accomplishments

In 1979, this program utilized $16,138,000, of which $1,229,900 was for salaries and expenses and $14,908,100 was for extramural purposes. The accomplishments for 1979 include the following:

- Contributed to the data base involving the effects of ozone and sulfur oxides on agricultural and natural ecosystems.

- Demonstrated that: (1) the fate of halogens released into the marine environment is different from freshwater fate, (2) biocides used in cooling waters result in halogenated organic compounds in marine environment, and (3) many compounds formed are toxic.

- Completed field research involving the impact of coal-fired power plants on grassland ecosystems of the Northern Great Plains. This research was conducted to assess power plant effects and prepare sitting models.

- Provided techniques to characterize the environmental impacts of energy development near coastal ecosystems.

- Developed procedures to characterize chemical properties of mine spoils and overburden material in the Western United States.

- Developed rapid, reliable and cost effective methods for inventorying and characterizing wildlife habitats.

- Determined the MATC (Maximum Allowable Toxicant Concentration) for hydrocarbons and other energy-related discharges on components of marine and freshwater ecosystems.

- Provided to the Office of Surface Mining (DOI) and Office of Solid Waste (EPA), acute and chronic effects data involving the effects of leachates from coal spoils on aquatic organisms.

- Developed microcosm capabilities to simulate the chemistry and biology of New England Coastal Areas.

- Develop field evaluation and simulation techniques to assess the impact of sulfur dioxide on terrestrial systems.

1980 Program

In 1980, the Agency allocated a total of $15,333,300 to this program, of which $894,600 is for the Salaries and Expenses appropriation and $14,438,700 is for extramural purposes under the Research and Development appropriation. Program activities and planned accomplishments for 1980 include:

- Initiate the assessment of the effects of Chemical discharges from offshore oil and gas extraction and to characterize exploration on marine ecosystems.

- Evaluation of acute and chronic effects of consent decree pollutants on organisms in marine and freshwater environments.

- Determination of the effects of atmospheric pollutants, including acid precipitation, on aquatic and terrestrial ecosystems.

- Further evaluation of the effects of biocides in cooling systems on aquatic environments.

- Identification of techniques to prevent adverse environmental impacts from surface mining operations.

- Identification of ecological effects of discharges and emissions from emerging energy technologies such as coal gasification and liquefaction.

- Development and validation of cost-effective test methods to evaluate the effects of energy-related chemicals.

- Development of land suitability criteria in support of the Federal coal leasing program.

1980 Explanation of Changes from Budget Estimate

The net increase of $685,300 results from several actions. An increase of $15, results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $300,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $72,700 to this activity.

of $3,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $72,700 to this activity.

A reprogramming of $202,000 was made within the energy media from measurement systems and instrumentation development for energy related pollutants to allow additional research pertaining to oil shale engineering technology. A reprogramming of $570,000 was made within the energy media from atmospheric transportation and transformation of energy related pollutants ($370,000) and energy-health effects ($200,000) in order to more appropriately reflect the aquatic transport activities. A transfer of $6,000 was made to the toxic substances media to transport and fate to help cover the cost of a symposium on the state of the art of the use of lab rate data in predicting environmental fate of new chemicals. A transfer of $20,000 was made to the water quality media to marine ecological effects for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models.

1981 Plan

The Agency requests a total of $14,667,300 for this program, of which $902,200 is for the Salaries and Expenses appropriation and $13,765,100 for the Research and Development appropriation. The net decrease of $666,000 results from a reprogramming of water transport and fate research into this program element in 1980 that will not be carried into the 1981 program. Planned activities for 1981 include the initiation and continuation of research projects as follows:

- Characterize composition, determine biological fate, and evaluate acute chronic effects of discharges from offshore oil and gas drilling activities.

- Determine acute and chronic effects and bioaccumulation rates of petroleum hydrocarbons and other energy-related pollutants for marine and fresh water environments.

- Determine the fresh water biological effects of energy-related pollutants from conventional coal-fired power plants, new energy demonstration projects (FBC) and associated solid waste control installations.

- Determine and assess the effects of acid precipitation on aquatic and terrestrial ecosystems in the United States. This task will be a part of the National Acid Rain Research Program.

- Refine and develop models for predicting the effects of air emissions from coal-fired power plants on fish, wildlife and their habitats, with emphasis on Class I Areas.

- Initiate research to determine the impact of atmospheric emissions from new energy technologies (pyrolysis of biomass, fluidized bed combustion, and coal gasification) on terrestrial systems.

- Determine the fate and chronic effects of gaseous pollutants, and both dry and wet deposition of particulates, singly and in mixture, on important crop, grassland, and forest species of western and eastern regions of the United States.

- Determine the fate of trace metals (Hg, Cd, etc.) that result from coal combustion and their chronic effects on important crop and forest species.

60-531 O - 80 - 59

- Conduct interagency workshops, as required by Presidential mandate, to identify potential health and environmental issues and problems associated with energy technologies.

- Prepare handbooks for mine reclamation covering soil and water management and revegetation activities in arid and semi-arid areas of the United States.

- Develop reclamation and revegetation techniques to minimize the transport of radioactive materials from uranium mine tailings.

- Identify sources, transport mechanisms, and fate of mercury and selenium associated with coal mining in the Northern Great Plains, and assess the contamination of fish by these elements.

- Assess the environmental impacts on surface and ground water resources that would result from increased utilization of ground water heat pumps and the commercialization of oil shale operations.

- Develop rapid, reliable, and economical test methodologies involving populations and communities, to evaluate the ecological effects of energy-related toxic substances on biological processes of plants and animals.

- Assess the long-term consequences of energy pollutant induced stresses on fish populations and fishing yields.

- Assess the biological impact of diverting water for energy use, with emphasis on arid and semi-arid portions of the United States.

ENERGY

Atmospheric Transport and Transformation of Energy Related Pollutants

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses	$632	$375	$201	$225	+$24
Research and Development	8,030	7,239	6,968	7,395	+427
Total	8,662	7,614	7,169	7,620	+451
Permanent Positions	33	3	3	3	...
Full-time Equivalency	14	7	7	7	...

Budget Request

The Agency requests a total of $7,619,900 for 1981, an increase of $450,700 from 1980. Included in this total is $224,600 for the Salaries and Expenses appropriation and $7,395,300 for the Research and Development appropriation, with increases of $23,600 and $427,100, respectively. The increase results from a reprogramming of the water transport and fate research program into this program element in 1980.

Program Description

This program characterizes energy-related pollutants, assesses their impact on man and the environment and develops predictive models of their transport, transformation and dispersion in air. Emissions into the air from coal-, oil-, and gas-fired power plants and from advanced energy technology development, such as coal liquefaction and gasification, oil shale extraction, and geothermal energy exploitation are examined. The transformation program then examines the interactions of these primary source pollutants with ambient air, water vapor, rain, ice, and solar irradiation.

1977 Accomplishments

In 1979, the program utilized $8,662,300, of which $632,100 was devoted to inhouse expenses and $8,030,200 to extramural activities.

In 1979, the formerly DOE funded and managed Multistate Atmospheric Power Production Pollution Study (MAP3S) was transferred to EPA under this program element. MAP3S goals and approaches were redefined with the primary objective being to define the relationships between emissions of air pollutants, their deposition, and the chemical quality of precipitation. The tasks of this project are distributed among 3 DOE-related laboratories - Argonne (ANL), Brookhaven (BNL), and Pacific Northwest (PNL), with a rotating technical

directorship. Major accomplishments in 1979 included:

- Completion of regional-scale trajectory models, including transport, transformation, and wet and dry deposition. These models will be used for long-range impact analysis.

- Formulation of regional scale deposition velocity map for use in dry deposition modeling for SO_2 and sulfate.

- Developed a model for sulfate scavenging (absorption by cloud droplets) which allows estimation of acidic deposition as a function of storm type and precipitation rate.

- It was shown that monthly average sulfate concentrations in precipitation were remarkably constant over the eastern United States, and the pH of rainfall was near 4.0. The concentration of nitrate in precipitation was realtively constant over the year, with maximum relative concentration in winter when it may contribute up to half of the acidity.

- Project VISTTA (Visibility and Interstate sulfur Transport and Transformation in the Atmosphere) showed that power plant plumes in the western arid regions could be followed to 100km distances, due to the presence of particulates. Little secondary particulate formation occured along the plume trajectory. Once the plume mixed with background air, however, the rate of sulfate formation increased and the particle size increased into a range that effectively scatters light. Thus, while SO_2 removal will not reduce plume blight, it will help to control regional haze.

- Both source emissions and ambient air quality were measured at the Lurgi gasifier at Kosovo, Yugoslavia. The plant was found to emit significant amounts of toxic organic pollutants which may pose a health hazard. Samples were collected continuously in May 1979 at five sites near the gasifier. Thirty organic compounds in the following five classes have been identified to date in the ambient Kosovo air and related to the gasifier: (1) CHO compounds (Phenols and Furans),(2) CHS Compounds (Mercaptans and Thiophenes), (3) CHN Compounds (Pyridines and Pyrroles), (4) Aromatic Compounds (Benzene to 5-ring polycyclics), and (5) Aliphatic Hydrocarbons (C9-C20). Quantitative data analysis is in progress and will be reported shortly.

- TVA studied sulfur oxide transformation in both scrubbed and unscrubbed plumes. Results indicated that the rate of both sulfate and nitrate transformation were not significantly different for scrubbed and unscrubbed plumes (1%/hr., 3-4%/hr., respectively). Both of these rates varied during the day, the afternoon rates being double those of the morning.

1980 Program

In 1980, the Agency has allocated a total of $7,169,200 to this program, of which $201,000 is for the Salaries and Expenses appropriation and $6,968,200 for extramural purposes under the Research and Development appropriation. Program activities and planned accomplishments include:

- Further restructuring of project MAP3S to meet the redefined objectives. The MAP3S acid deposition network of nine stations(seven of which are presently still funded by DOE) will become an integral part of the National Acid Deposition Network (NADN). Its major function, however, will remain storm/event sampling in order to validate specific source/receptor relationships by trajectory modeling.

- Complex terrain model development. A planning workshop brought to light that: (1)physical dispersion of air pollutants over flat topography can be modeled reliably, (2) the traditional approach to complex terrain modeling - a geographically dense measurement network in a real-world complex terrain situation followed by back calculation modeling - has always failed to produce a reliable model, (3) even the simplest terrain situation - a conical hill on a flat plain - is not understood. Accordingly, a back-to-basics approach to complex terrain model development was adopted. In 1980 the physical dispersion phenomena associated with a plume impinging on a simple hill on a flat plain will be measured.

- The 1980 field study of Project VISTTA will obtain data on the composite plume originating at the Four Corners Area (AZ, CO, NM, UT). Intensive field measurements which employ ground, airborne and satellite-borne instrumentation, will be made to obtain data on the physical and chemical constitutents contributing to visibility impairment. The data will be used to develop optical modules of pollutant dispersion models.

- Construction will be completed on the TVA smog chamber. The chamber will be tested at a coal fired power plant to provide data for atmospheric transformation studies. Then the chamber will be transported to new energy technology sites for in-situ transformation studies of emissions from such facilities.

- A 30-day study using a mobile ground or aerial laboratory will be performed at the Lurgi Coal Gasification Plant at Kosovo, Yugoslavia, to further investigate the transport and transformation of organic aerosols and gases emitted by the gasifier.

1980 Explanation of Changes from Budget Estimates

The net decrease of $444,800 results from several actions. An increase of $6,500 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $67,300 to this activity.

A reprogramming of $370,000 was made within the energy media to transport, fate and effects of energy related pollutants in order to more appropriately reflect the aquatic transport activities.

A transfer of $8,000 was made to the air media to transport and fate to support the effort to integrate the MAP3S program within one activity.

A transfer of $6,000 was made to the toxic substances media to transport and fate to help cover the cost of a symposium on the state-of-the-art of the use of lab rate data in predicting environmental fate of new chemicals.

1981 Plan

The Agency requests a total of $7,619,900 for this program, of which $224,600 is for the Salaries and Expenses appropriation and $7,395,300 for the Research and Development appropriation. The net increase of $450,700 will be allocated to increase research on energy-related pollutant transport and transformation modeling, and on atmospheric effects, such as acid deposition and visibility impairment in Federal Class I areas. The 1981 plan will also place an increased emphasis on environmental problems associated with synfuels. Planned activities for 1981 include:

- A continuation of the complex terrain model development effort initiated in 1980. This is an effort to provide the Office of Air Quality Standards (OAQPS) with a practical, flexible, computerized model of criteria pollutant dispersion from variable height stacks in complex terrain (mountains, valleys, land-sea interface) for prediction of air quality impacts from existing and new power plants.

- Modeling and field validation of pollutant dispersion on a regional scale (0-1000 km). This is an effort to predict air quality impact from single or aggregate power plants in an entire region of the United States, such as the Ohio Basin, the Northeast, or the Great Lakes areas. Energy-related air pollution effects, such as fine particulates formation, acid rain and visibility deterioration encompass a wide area and are not localized to the source. The mechanisms which govern the primary pollutant dispersion on a wide scale must be understood, and the chemical transformations which may lead to fine particulate (and thus, visibility deterioration) and acid rain formation. Recommendations will be formulated for feasible control strategies to alleviate or mitigate visibility impairments and acid rain.

- The studies of plumes resulting from coal-fired power plant emissions (Project VISTTA), initiated in 1979, will be concluded with the determination of the governing mechanisms that may cause visibility deterioration in the Western Class I areas. The pollutant dispersion modeling effort will focus on aerosol formation which causes visibility impairment (haze). This effort is concentrated in the western energy regions, currently undergoing intensive energy development.

- Studies of the transformation of primary gaseous pollutants into secondary particulates and through scavenging by clouds will be initiated. Several lab and field studies will be conducted in academic institutions (through the new ORD Grants Office), NOAA/Environmental Services Research Laboratory and TVA to provide the basic physical and chemical parameters which are necessary for model development of pollutant transport and transformation. Particular emphasis will be put on elucidation and quantification of phenomena associated with transport and transformation of pollutants from new energy technologies, such as coal liquefaction and gasification, oil shale extraction, geothermal sources, and biomass combustion.

ENERGY

Measurement Systems and Instrumentation Development
for Energy-Related Pollutants

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(dollars in thousands)		
Appropriation					
Salaries and Expenses	$1,024	$1,062	$972	$974	+$2
Research and Development	6,862	7,475	7,276	8,444	+1,168
Total	7,886	8,537	8,248	9,418	+1,170
Permanent Positions	8	1	10	10	...
Full-time Equivalency	25	34	34	33	-1

Budget Request

An appropriation of $9,417,900 is requested for 1981, an increase of $1,169,800 over 1980. Included in this total is $973,800 for the Salaries and Expenses appropriation and $8,444,100 for the Research and Development appropriation, which will be used for a new program in exposure monitoring to determine the correlation between fixed station air pollution monitoring data and actual human exposure to energy-related pollutants.

Program Description

Most of the reserve energy resources of this nation are located in the relatively pristine western states. This program is directed toward identifying and quantifying ambient pollutants associated with energy activities and toward development of pollutant measurement capabilities. The objectives of the program are to determine actual human exposure to energy-related pollutants and to compare this data to fixed station network data; to establish a baseline of environmental data so that the multimedia impact on environmental quality from anticipated energy development can be quantitatively established; and to develop validated sampling and analytical methods and procedures to ensure a measurement capability for pollutants from emerging energy technologies.

1979 Accomplishments

In 1979, this program utilized $7,886,100 of which $1,023,600 was for in-house expenses and $6,862,500 was for extramural activities.

Current standards address the major pollutants - SO_x, NO_x, particulates, etc. - but results from characterization studies show that a large variety of hazardous substances are emitted in small amounts. The monitoring equipment provided by this program is used to identify and measure both the hazardous substances that originate from energy-related facilities and the secondary pollutants that arise when these primary emissions either decompose by interaction with sunlight or react with other substances in the environment. In many cases, secondary pollutants can be more hazardous than primary pollutants. Of course, primary hazardous pollutants can also be rendered relatively innocuous after a very short residence time in the environment. The information from this monitoring program will enable the EPA to establish regulations that provide an adequate margin of safety, where the hazard posed by a pollutant so warrants, while avoiding unnecessary or overly stringent controls. Among the 1979 accomplishments are:

- In a 30-day continuous monitoring program nearly 80 percent of ambient sulfate and 50 percent of total suspended particulate matter in the vicinity of an oil-fired power plant were found to be attributable to the plant.

- A computer system for the processing of multispectral scanner imagery (obtained by aerial photography) of coal strip mines was demonstrated. This advanced remote sensing technology is used to assess environmental impact.

- Potential ground water pollution sources from oil shale development were identified and ranked; a compendium report on oil shale technology was published; and ground water was monitored for pollution from western coal strip mining.

- Instruments for measuring visibility-related variables were evaluated for use in a report to Congress on visibility.

- The correlation of various visibility measurement techniques was determined by monitoring for one year.

- Data from the EPA/National Park Service 14-station visibility-monitoring network in Western Class I Areas was obtained by monitoring for one year. Visibility apparently rises and falls simultaneously over broad areas of the west, suggesting that the sources of visibility impairing pollution are so remote that their pollution is dispersed uniformly over wide geographical areas.

- The relationships between human perception and the various measurable visibility parameters were documented.

- The five year baseline study of air quality in Western Energy Resources Development Area was completed. Future deterioration of air quality resulting from accelerated energy developments such as oil shale retorting and coal gasification can be documented by comparison with this 5-year data base.

- High molecular weight and potentially carcinogenic organics in the C10-C20 range, including alkylbenzenes, alkylnapthalenes, and anthracenes were found in plume aerosols emitted from in-situ oil shale burn (Occidental Oil Co. near Grand Junction, Colorado). Inorganics and organics were identified using XRF and GC/MS techniques, respectively. Because of the reducing nature of the burn, sulfur species were identified including H_2S, mercaptans, etc.

- 88 reactions involving interaction of potentially important metal catalysts (Cu, Fe, Pb, V, Co, etc.) with O_3, NO_2 and organic species were studied to provide fundamental sulfate formation rate data for liquid droplet reactions. The most important reactions identified have been the Fe and Mn system, SO_2 + O_3, and SO_2 + NO_2.

- 903 filters collected in 1975 from 42 urban sites in 33 States were analyzed for organic and graphitic carbon. Graphitic carbon constitutes 5 to 15% of the particulate mass, which is comparable to the amount of sulfate present. The major source is most likely the combustion of hydrocarbon fuels.

- A method for accurate determination of gas phase sulfuric acid from stationary sources was developed by Brookhaven National Labs with EPA funding.

- The correlation between visible plume opacity and boiler operating parameters was determined for oil fired boilers.

- A 40-station fine particulate network in the Western Energy Research Development Area was established.

1980 Program

In 1980, the Agency has allocated a total of $8,248,100 to this program, of which $972,200 is for the Salaries and Expense appropriation and $7,275,900 is for extramural purposes under the Research and Development appropriation. Program activities and planned accomplishments for 1980 include:

- Aerial sampling to characterize the plume of an in-situ coal gasificiation plant is being undertaken. Aerosol chemical composition will be determined by x-ray fluorescence and gas chromatography/mass spectroscopy.

- Aerial sampling to determine the impact of aerosol sulfate/nitrate formation from western power plants equipped with dry scrubbers is being performed.

- Studies of the effect of metal catalysts on sulfate formation rate due to oxidation of SO_2 by O_3 and H_2O_2 in water are being conducted. The effect of NH_3 and HNO_3 vapor concentrations on ammonium nitrate aerosol formation will be determined in a laboratory study using a flow reactor.

- Secondary organic and inorganic pollutant assessment of advanced fossil fuel technologies will be performed. A flow reactor will be used to simulate the atmospheric transformation of emissions from oil shale, coal gasifier, and coal liquifier processes. Sample aerosol products will be tested for bioactivity.

- Interpretation of aerial photography of the Powder River Basin coal strip mines and oil shale site imagery to assess rehabilitation efforts will be carried out.

- An updated procedures manual on overhead multispectral scanner monitoring of western coal strip mines for environmental impact assessment will be published.

- Monitoring programs for coal strip mining and in-situ oil shale retorting is being designed, with reports on ground water monitoring of (1) oil shale development, (2) active coal strip mines, (3) western reclaimed coal strip mines,and (4) municipal pollution associated with coal strip mining.

- Western regional visibility monitoring network will be expanded to 18 stations. An analysis of the first year of data in terms of regional trends and synoptic meteorology will be performed.

- A symposium on visibility impact, measurement, and analysis is being sponsored.

- The capability to represent measured or derived visibility data in pictorial form using automated image processing equipment and software is being developed.

- Studies of primary sulfate and nitrate emissions to quantify the effect of widespread switching of fuels from pulverized coal to residual oil are being conducted.

- The capabilities of existing satellite systems are being evaluated; e.g., Synchronous Meteorological Satellite/Geostationary Orbiting Earth Satellite (SMS/GOES) to identify and monitor polluted air masses.

- The applicability of various remote sensing technologies (Laser Absorption Spectrometry (LAS), High Spectral Resolution LIDAR (HSRL), and UV Differential Absorption LIDAR (UV-DIAL)) to near term scientific investigation of regional air pollution problems will be demonstrated.

- The Brookhaven Emission Characterization System (BECS) will be expanded to include characterization of trace organic emissions.

- An assessment of the exposure of the Texas Flower Gardens coral reefs to discharges from oil and gas drilling mud components will be made. In 1980, the dispersion and the chemical nature of drilling mud components and degradation products will be determined. This will be accomplished using a shipboard acoustic backscatter system to track the discharge plumes and to guide sampling. The Texas Flower Gardens are the most northerly known coral reefs, perched at the edge of the outer continental shelf 100 miles from Houston.

1980 Explanation of Changes from Budget Estimates

The net decrease of $288,900 results from several actions. An increase of $24,300 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $2,000. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $94,200 to this activity.

A transfer of $15,000 was made to the water quality media to transport and fate for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models. A reprogramming of $202,000 was made within the energy media to transport, fate and effects energy related pollutants to allow additional research pertaining to oil shale engineering technology.

1981 Plan

The Agency requests a total of $9,417,900 for this program, of which $973,800 is for the Salaries and Expense appropriation and $8,444,100 is for the Research and Development appropriation. The program contains a major new project, namely exposure monitoring, that will be funded by the net increase of $1,169,800. This project will determine the degree of correlation between fixed station monitoring network data and actual human exposure to energy-related pollutants. Other major objectives for the 1981 program include:

- Detailed emissions characterization of volatile organics emitted from secondary energy sources such as refuse combustion and synthetic fuels usage will be made. Preliminary data indicate the presence of toxic and carcinogenic chlorinated aromatics in emissions from certain refuse energy conversion plants.

- A comprehensive summary report on passive remote sensing (photography and multispectral scanning) technology for assessing the environmental impact of energy resource recovery activities will be produced.

- Field verification of ground water monitoring guidelines for western energy resource recovery areas will be undertaken.

- A national network of regionally representative visibility monitoring stations (approximately 15-20) per recommendation of the Subcommittee for Visibility Research (SCVR) will be established.

- The fine particulate monitoring program will be expanded to examine organic fraction of particulate loading in the Western Energy Resource Development Area.

- The National Data ManagementSystem for visibility-related data will be developed.

- Aerosol formation rates in a dry scrubber plume will be determined to assess the potential impact on visibility in the midwest, where many power plants will control SO_2 emission with dry scrubbers.

- The enhancement or inhibition of the SO_2 oxidation which is caused by catalytic metal ions and dissolved oxidants will be determined.

- Organic aerosol formation in plumes from advanced energy sources will be determined. This effort will include aerial sampling of the TOSCO in-situ oil shale retort at Tract C-a, which is near Grand Junction, Colorado. Aerosol samples will be collected and analyzed by gas chromatography/mass spectrometry to determine plume organic species and their transformation rates.

- Feasibility studies for equiping future satellites with instruments sensitive to polluted air masses will be conducted. These systems will provide invaluable data for prediction of elevated pollution episodes.

- Second generation High Spectral Frequency LIDAR System for atmospheric pollution transformation studies will be fabricated.

- Exposure assessment at the Texas Flower Gardens coral reefs will be continued. The results of this work will be combined with those of a parallel effort to assess the effects of drilling platform discharges on coral reef biotic species. The combined output will be an assessment of the total hazard posed by oil and gas drilling in the vicinity of this fragile and valuable coral ecosystem.

ENERGY

Health Effects of Energy Related Pollutants

Appropriation	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Salaries and Expenses	$109	$769	$624	$146	-$478
Research and Development.....	19,963	17,618	17,532	18,245	+ 713
Total.....	20,072	18,387	18,156	18,391	+ 235
Permanent Positions....	2	3	2	2	...
Full-time Equivalency..	4	6	6	6	...

Budget Request

The Agency requests a total of $18,390,900 for 1981, an increase of $234,500 over 1980. The increased resources in 1981 will be used in the funding of a newly initiated human health (epidemiological) study. Included in this total is $145,600 for the Salaries and Expense Appropriation and $18,245,300 for the Research and Development Appropriation, with a decrease of $478,500 and an increase of $713,000, respectively.

Program Description

The interagency Health Effects Research Program is dedicated to improving the ability to estimate the long-term adverse health impacts of energy-related pollutants that can ensue as a consequence of implementing a particular energy policy. Of major concern are those health effects that may result from long-term, low-level exposures and that are manifested only after a long time period, i.e., carcinogenicity, teratogenicity, mutagencity, and dysfunctions of the cardiopulmonary, neurobehavioral, reproductive, hepatic, hematopoietic, renal and immune systems.

The necessary data are obtained through a coordinated program of epidemiological, clinical and toxicological studies, and through the development and use of rapid and sensitive bioscreening methodologies. Research in these disciplines is directed through six themes which collectively develop the data base necessary to reduce the uncertainties in the estimates of risk to human health. The objectives of these themes, all of which address only energy-related pollutants, are as summarized below:

- Determine the health effects of criteria and non-criteria pollutants generated by fossil fuel combustion.
- Develop and validate bisassay screens and predictor test protocols for the identification and characterization of hazardous energy-related pollutants.
- Determine the health hazards of drinking waters contaminated by leachates from the solid waste generated by fossil fuel combustion.
- Ascertain the toxicity of particular (e.g., cadmium) energy-related pollutants when exposure is concurrent with other environmental stressors.

- Perform a human health comparative risk assessment for pollutants generated via fluidized bed combustion of coal vs. conventional coal combustion.

- Determine the occupational health hazards of advanced fossil fuel energy cycles: coal gasification, coal liquefaction, oil-from-shale.

1979 Accomplishments

In 1979, the program utilized $20,071,800 of which $109,200 was for inhouse expenses and $19,962,600 was for extramural expenses. Specific accomplishments include:

- Implementation of several assays--including DNA damage/repair, lymphocyte cytotoxicity, and rabbit alveolar macrophage--in the screening of energy-related effluents and emissions.

- Development of a series of bioassay protocols for use in evaluation of mixed effluent streams.

- Development of a repository for energy-related materials; samples are available to investigators conducting biological experiments designed to screen for or assay potentially toxic materials.

- Co-sponsorship of a workshop on Health and Environmental Effects of Coal Technologies.

- Completion of a number of final reports defining the toxicity of energy-related agents.

1980 Program

In 1980, the Agency allocated a total of $18,156,400 to this program, of which $624,100 is for the Salaries and Expenses Appropriation and $17,532,300 is for extramural purposes under the Research and Development appropriation. Planned activities for 1980 are to:

- Perform epidemiological studies in several areas where the general population is exposed to elevated levels of photochemical oxidants and other air pollutants.

- Perform an epidemiological study in an area such as El Paso where short-term high-level excursions of SO_2 and particulates are observed.

- Perform a series of clinical studies with human subjects (healthy and diseased) to determine the effects of exposures to sulfates and sulfuric acid mists, ozone, and NO_2, both singly and in various combinations.

- Perform relative health risk assessments for new energy technologies such as fluidized bed combustion, with reference to conventional coal combustion.

- Develop assay procedures which complement liver "enzyme island assay" methodologies; develop procedures to screen samples that are potentially hazardous to tissues such as skin from the fossil fuel cycle.

- Perform an epidemiological study with populations identified as exposed to waterborne agents from fossil fuel energy production or use.

- Evaluate the utility of a variety of proposed methods for recovering and concentrating trace quantities of waterborne energy-related pollutants in sufficiently large quantities for performing short-term in vivo animal tests as well as in vitro bioassays.

- Evaluate the cardiopulmonary, hepatic, gastrointestinal or neurobehavioral dysfunction of various animal models resulting from chronic inhalation exposures to combinations of flyash, criteria pollutants (e.g., O_3, SO_2, NO_2) and non-criteria energy-related agents (e.g., aldehydes, sulfates, nitrates).

- Determine reproductive capacity of animals exposed to mutagenic pollutants during gestation.

- Continue development of sensitive reliable, and accurate quantitative techniques for the identification of hazardous wastes; evaluate the correlation of short-term tests with chronic health impacts; improve short-term test procedures and dosimetric techniques for evaluation of body burdens; improve models for animal data interpretation and extrapolation.

- Determine the spectrum of responses (e.g., oncogenicity, renal toxicity, neurological potentiation, nutrition interference) from simultaneous exposure to cadmium and other substances.

- Perform epidemiological and industrial hygiene studies to assess the occupational health and safety hazards associated with the disposal of hazardous waste from energy-related industries.

- Develop a program to improve estimates of risks/health impacts to occupational groups in advanced fossil fuel industries; emphasis is to be on skin and pulmonary cancer, and reproductive and neurobehavioral dysfunction.

- Perform an evaluation of federally sponsored coal gasification, coal liquefaction, and shale oil products and residuals utilizing both in vivo and in vitro bioassay protocols.

1980 Explanation of Changes From Budget Estimate

The net decrease of $230,600 results from several actions. An increase of $4,700 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation, a congressional reduction of $2 million to Agency travel costs resulted in a decrease of $100. An overall reprogramming throughout the agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $2,200 to this activity.

A reprogramming of $200,000 was made within the energy media to transport, fate and effects of energy related pollutants in order to more appropriately reflect the aquatic transport activities. A transfer of $33,000 was made to the Water Quality media to transport and fate for a contract to plan a research program to integrate the physical, chemical transport models with the ecological fate models.

1981 Plan

The Agency requests a total of $18,390,900 for this program, of which $145,600 is for the Salaries and Expenses appropriation and $18,245,300 for the Research and Development appropriation. The net increase of $234,500 will be used in a newly initiated human health (epidemiological) study which is the second activity described below. Planned activities are to:

- Continue support during the second year of a 5-year epidemiological study of the health status of populations in several locales where the air quality regulations for ozone, SO_2, NO_x, total suspended particulates and nonmethane hydrocarbons have been exceeded individually and/or in combination.

- In addition to the above, initiate a 5-year epidemiological study at a new locale anticipated to be the site of a new energy facility in order to establish the necessary background data on exposures, health status, population characteristics.

- Support the second year of a 3-year clinical program to investigate the acute responses in human subjects which occur as a consequence of simultaneous exposures to several combinations of criteria pollutants (SO_2, TSP, NO_2) and non-criteria pollutants (sulfates, nitrates).

- Initiate the assessment of risks to human health arising from fugitive emissions from operation of a coal gasification facility as compared to a conventional coal combustion facility.

- Support the second year of a series of animal model chronic exposure inhalation toxicology studies including various combinations of criteria and non-criteria pollutants, ultimately simulating the exposure regimen found in several epidemiological studies.

- Continue the assessment of risks to human health arising from inhalation of organic coated fly ash from fluidized bed combustion, as compared to risks from fly ash emitted from conventional coal combustion.

- Assess the risks of reproductive defects in worker and general populations that may result from environmental exposures to airborne and water-borne agents from the complete conventional coal production and use cycle.

- Improve methods for evaluation of body burdens of energy-related hazardous materials and techniques for evaluation of doses and dose rates to the critical organs/targets.

- Develop models for energy-related agents in various human biological systems (molecules, cells, tissues, fluids, tec.). These models will include the mechanisms of metabolism and incorporation, and the damage and repair processes.

- Develop dose-response models for acute and chronic exposures to mixtures of energy-related agents for biological endpoints of concern (emphasis will be on teratology/reproductive dysfunction, and neurobehavioral dysfunction). Emphasis will be on developing models for population groups at high risk (pre-stressed).

- Evaluate correlations of projected biological effects using available short-term in vitro bioassay tests with results from in vivo chronic exposure tests for mixtures of energy-related agents, including synfuel products and wastes. Mutation, cancer, birth defects, sterility, and dysfunctions of lung, liver, kidney, neurobehavioral, gastrointestinal and immune systems.

- Increase sensitivity, reliability, accuracy and range of available short-term tests for evaluation of hazardous wastes (mixtures) from energy-related facilities.

- Provide support for repository of energy-related agents which will be made available for biological experimentation regarding bioassay test systems.

- Support the second year of a toxicological study requested by Office of Pesticides and Toxic Substances of the responses from simultaneous exposure to cadmium and other substances.

- Develop alternative methods for recovering trace quantities of energy-related pollutants from drinking water supplies. These trace quantities will be concentrated in forms and quantities sufficient for whole animal toxicology.

- Initiate an analytic epidemiologic study of populations exposed to drinking waters contaminated bu fossil fuel energy systems operation-leachates.

- Continue an assessment of the occupational safety and health implications of disposal of hazardous waste from energy-related industries.

MANAGEMENT AND SUPPORT

PROGRAM HIGHLIGHTS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Salaries and Expenses...	183,450	187,423	196,490	219,404	+22,914
Permanent Positions.....	2,429	2,541	2,575	2,559	-16
Full-time Equivalency...	2,980	3,327	3,332	3,303	-29
Outlays.....	147,687	178,210	145,639	186,940	+41,301
Authorized Levels.....	24,060	*	*	*	

*Funds were authorized under the Environmental Research, Development, and Demonstration Authorization Act of 1979; this authorization is pending for 1980. Remaining funds are authorized by virtue of the Appropriation Act.

OVERVIEW AND STRATEGY

This media encompasses overall executive direction, management and support for EPA programs at the headquarters and ten regional offices. It covers the program management activities carried out by the following program offices: Office of Water and Waste Management; Office of Air, Noise, and Radiation; Office of Pesticides and Toxic Substances; Office of Enforcement; and Office of Research and Development. These management functions include development of program policies and strategies, planning and monitoring, and review of program performance.

The agency and regional management portion of this media includes those activities which are not directly associated with a given program. Agency and regional management covers the salaries and related expenses of the Administrator and the Regional Administrators, their immediate staffs and the staff offices which report directly to them. It includes those organizations within the Agency which provide central management and administrative services. These central management activities include program planning and evaluation, economic analysis, budgeting and financial management, personnel, contracts and grants management, and other activities required for the effective management of Agency programs. The full cost of these program direction and managerial activities is charged to the Salaries and Expenses appropriation.

The extent of the management and support activities is determined by the programs they serve. As a result, the increases shown under this media are confined to high priority needs or to mandatory increases.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Management and Support Program.....	$196,490
Management.....	+6,171
The increase is primarily for contracts to assess the economic impact of EPA regulations on major industries, the benefits of major EPA regulations, the energy impact of environmental regulations and the environmental impact of energy legislation.	

60-531 O - 80 - 60

In addition, increased funds will provide for greater management effectiveness of the regional offices and the Regional Analytic Centers.	
Support..... This increase will primarily cover increased building services costs, additional space costs, a major ADP procurement conducted in accordance with OMB Circular A-109, and regional support costs.	+16,743
1981 Management and Support Program.....	219,404

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $219,403,900 is requested in 1981 under the Salaries and Expenses appropriation. This represents an increase of $22,913,500 over the 1980 management and support media. This change reflects increases for the Office of Planning and Evaluation, for agencywide support services, and for increased regional management activities.

2. Changes from Original 1980 Budget Estimate

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$187,423
Congressional reductions:	
Travel.....	-335
Salaries and expenses.....	-408
ADP costs.....	-738
Proposed supplemental for October 1979 pay raise.....	+3,587
Reprogramming to support authorized workyears.....	+5,078
Miscellaneous reprogramming actions.....	+1,883
Current 1980 estimate.....	196,490

Congressional changes of $1,482,300 were made through reductions to Agency travel costs ($2 million), salaries and expenses ($2 million), and ADP costs ($1 million). The proposed supplemental to fund a portion of the October 1979 pay raise will increase this media by $3,586,400.

An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $5,077,900 to management activities.

Reprogramming actions result in a net increase of $1,883,300 to the management and support media and includes net transfers from the air media ($479,600); from water quality ($805,300); from drinking water ($155,100); from solid waste ($544,000); from pesticides ($105,000); from toxic substances ($90,000); from radiation ($100); to noise ($34,600); and to interdisciplinary ($261,200).

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
Prior year obligations	$183,450	$197,315
Effect of October 1979 pay raise	+3,587	...
Reprogramming to cover authorized workyears	+5,078	...
Miscellaneous reprogramming	+1,883	...
Program increase	+12,898	+22,914
Change in amount of carryover funds available	-9,581	-825
Total estimated obligations	197,315	219,404
(From new obligation authority)	(196,490)	(219,404)
(From prior year funds)	(825)	(...)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The effect of the October 1979 pay raise will increase obligations by $3,587,000. The increase in 1980 budget authority over the 1979 level will increase obligations by $12.9 million. In 1981, the increase in budget authority will result in an increase of $22.9 million to obligations.

Reprogramming actions will increase obligations in 1980 by $6.9 million. The amount of carryover funds to be obligated in 1980 is $825,000, a decrease of $9,581,000 from the 1979 level. In 1981, no obligations are expected to occur from carryover funds, a decrease of $825,000.

MANAGEMENT AND SUPPORT

MANAGEMENT

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Salaries and Expenses:					
Program Management....	$12,032	$12,766	$14,448	$14,059	-$389
Agency Management.....	66,923	65,527	71,460	75,821	+4,361
Regional Management...	19,312	19,690	21,442	23,641	+2,199
Total.....	98,267	97,983	107,350	113,521	+6,171
Permanent Positions:					
Program Management....	267	292	300	280	-20
Agency Management.....	1,516	1,572	1,611	1,608	-3
Regional Management...	646	677	664	671	+7
Total.....	2,429	2,541	2,575	2,559	-16
Full-Time Equivalency:					
Program Management....	308	417	424	386	-38
Agency Management.....	1,903	2,103	2,086	2,092	+6
Regional Management...	769	807	822	825	+3
Total.....	2,980	3,327	3,332	3,303	-29

Purpose

This activity provides for centralized program direction and management of the following EPA offices: Research and Development; Water and Waste Management; Air, Noise and Radiation; Pesticides and Toxic Substances; and Enforcement. It also includes direct program support costs incurred at the field offices managed by the Office of Research and Development, the Office of Air, Noise and Radiation, or the Office of Pesticides and Toxic Substances.

Agency and regional management provides executive direction, management, and support for all EPA programs at the headquarters and ten regional offices. It includes those activites which are not directly associated with a given program activity. Agency and regional management encompasses the salaries and related expenses of the Administrator and the Regional Administrators, their immediate staffs, the staff offices which report directly to them, the Office of the Inspector General, and the Office of the General/Regional Counsel. In addition, it includes those organizations within the Agency which provide central management, analytic, and administrative services. These central management activities include program planning and evaluation, economic analysis, budgeting and financial management, personnel, contracts and grants management, and other activities required for the effective management of Agency programs. The full cost of these program direction and managerial activities is charged to the Salaries and Expenses appropriation.

PROGRAM MANAGEMENT

Budget Request

The Agency requests a total of $14,059,000 for 1981, a decrease of $388,500 from 1980.

Program Description

This activity provides for the program direction of the following offices: Office of Water and Waste Management, Office of Air, Noise, and Radiation, Office of Pesticides and Toxic Substances, Office of Enforcement, and Office of Research and Development. Specifically, this activity covers the salaries and related expenses for the Assistant Administrators of the aforementioned offices and their immediate staffs. The Office of Research and Development also provides funding for the Minority Institution Research Support Program. This program promotes significant research at minority universities and colleges by awarding research grants to these institutions.

	1980		1981		Change	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
		(dollars in thousands)				
Office of Air, Noise and Radiation	51	$1,995	49	$2,036	-2	+$41
Office of Enforcement	47	1,999	40	1,675	-7	-324
Office of Research and Development	92	4,628	87	4,666	-5	+38
Office of Pesticides and Toxic Substances	56	2,915	53	2,669	-3	-246
Office of Water and Waste Management	54	2,911	51	3,013	-3	+102
Total	300	14,448	280	14,059	-20	-389

The 20 position reduction in 1981 for this activity reflects a shift of staff from central management functions to program activities.

1980 Explanation of Change from Budget Estimate

The net increase of $1,681,100 results from several actions. An increase of $478,400 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. A congressional reduction of $2 million to Agency travel costs resulted in a decrease of $88,600. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $208,200 to this activity.

A transfer of $51,800 was made from agency management (Office of Resources Management) to the Office of Research and Development program management. A transfer of $25,000 was made within the Office of Research and Development from program management to program support for lab maintenance costs due, in part, to increasing costs of energy.

A reprogramming of $37,000 was made from the Office of Air, Noise, and Radiation program management to the air media to support the fuel economy program. A reprogramming of $734,000 was made to the Office of Water and Waste Management program management from water quality ($379,400), from drinking water ($141,600), and from solid waste ($213,000), to support projections of current year costs related to authorized workyears.

A reprogramming of $84,300 was made from agency management (Office of Environmental Review) to the Office of Enforcement program management, reflecting a functional transfer of a portion of the Environmental Workforce Coordination Staff. A reprogramming was made within the Office of Enforcement to program management, $225,000, for litigation management support and establishment of a special investigations unit, from air ($125,000), water quality ($50,000), and pesticides ($50,000). A reprogramming was made within the Office of Enforcement to program management, $50,000, from solid waste to support litigation management associated with imminent hazards under RCRA.

AGENCY MANAGEMENT

Budget Request

The Agency requests a total of $75,820,600 for 1981, an increase of $4,361,000 from 1980.

Program Description

The Agency management subactivity provides for agencywide policy direction and management activities and includes the salaries and associated costs for the immediate office of the Administrator, the staff offices which report directly to the Administrator, the Office of the Inspector General, the Office of General/Regional Counsel, and the Office of Planning and Management.

Office of the Administrator/Executive Offices

The Office of the Administrator includes the Administrator and Deputy Administrator and their immediate staffs. The Administrator/Deputy Administrator are responsible for providing policy direction to the Agency and for insuring the implementation of these policies. The staff offices perform a variety of functions which are closely related to the development and implementation of Agency policies and programs. These staff groups are responsible for legislative services and congressional relations, public awareness, international activities, civil rights, liaison with other Federal agencies, coordination of regional operations and relations with State and local governments. The Office of Administrative Law Judges and the Agency's Science Advisory Board are also attached to the Office of the Administrator. The Science Advisory Board consists of a number of expert consultants, supported by a small staff. It provides expert advice to the Administrator on scientific and technical issues.

The Office of the General Counsel provides legal advice and assistance to the Administrator and other Agency components and the Office of the Regional Counsel provides similiar services within each of the ten regional offices. The Office of the Inspector General provides independent appraisals of the economy and efficiency of the Agency's programs and financial operations. It also conducts, supervises, and coordinates investigations of alleged violations of EPA regulations and Federal criminal statutes. In addition, it reviews existing and proposed legislation and regulations relating to EPA's programs and operations in order to make recommendations concerning the promotion of economy and efficiency and the prevention and detection of fraud and abuse in EPA's programs.

The 1981 request provides for a net decrease of seven positions and $70,000 for the Office of the Administrator and the executive offices. This decrease, which is summarized below, reflects a 1 position increase in the Office of Environmental Review to support the Federal Energy Administration Act 5-day reviews and to work with the Endangered Species Committee; and a 5 position increase in the Office of Administrative Law Judges to enable that office to handle a projected increase in hearing caseload in the areas of the Clean Air Act (Section 120), water permits, and Civil Penalty Toxic Substance Control Act (TSCA) cases. The additional resources for the Office of the Inspector General will be used to increase their capability to investigate EPA's construction grants program, and to respond to congressional inquiries made under the

Inspector General Act of 1978. Offsetting these increases were decreases in other staff offices, reflecting the transfer of resources to higher priority activities elsewhere in the Agency.

	1980		1981		Change	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Office of the Administrator.....	46	$2,045	46	$2,052	...	+$7
Office of Legislation.....	38	1,356	35	1,135	-3	-221
Office of Public Awareness.....	53	3,432	44	3,099	-9	-333
Office of International Activities	24	1,198	22	1,177	-2	-21
Office of Civil Rights.....	31	1,180	29	1,227	-2	+47
Office of Environmental Review....	32	1,199	33	1,220	+1	+21
Office of Regional and Intergovernmental Operations.....	8	447	6	454	-2	+7
Administrative Law Judges.....	16	656	21	670	+5	+14
Science Advisory Board.....	15	806	14	818	-1	+12
Subtotal Administrator/ Staff Offices.....	263	$12,319	250	$11,852	-13	-469
Office of the Inspector General...	120	9,672	126	9,956	+6	+284
Office of General/Regional Counsel.....	199	6,597	199	6,710	...	+113
Total Executive Offices.....	582	$28,588	575	$28,518	-7	-70
Full-Time Equivalency.....	711		697		-14	

The significant contracts for the staff offices and Office of the Inspector General in 1980 and 1981 are listed below:

Office	1980	1981	Change	Purpose
	(in thousands of dollars)			
Office of the Administrator.....	99	35	-64	Contract studies on policy and scientific issues of direct interest to the Administrator.
Office of Public Awareness.....	1,108	820	-288	Production and distribution of information/educational material, including publications, films, T.V. and radio announcements; Visitor's Center maintenance; and press office support.

Office	1980	1981	Change	Purpose
	(in thousands of dollars)			
Office of Environmental Review..	44	44	...	Specialized assistance in the energy area for EIS preparation and review.
Office of Regional and Intergovernmental Operations.....	54	54	...	Contracts for seminars on environmental programs with public interest groups and national organizations representing elected officials of State and local governments.
Office of the Inspector General	4,609	4,772	+163	Contracts with CPA firms and State agencies for the conduct of construction grant audits.

Office of Planning and Management

The Office of Planning and Management (OPM) is responsible for the agencywide management and analysis functions and provides central administrative services for EPA headquarters and the Agency's two largest field installations, located at Research Triangle Park, N.C., and at Cincinnati, Ohio. There are four organizational components within the Office of Planning and Management (OPM). The immediate office of the Assistant Administrator provides overall direction of all OPM activites and carries out the Agency's occupational health and safety program. The Office of Management and Agency Services develops agencywide policies and procedures and provides services in the areas of personnel administration, contracts management, data systems, facilities management and services, security, and management planning and analysis. The Office of Resources Management (ORM) is responsible for developing and coordinating the Agency's zero-based budget formulation and control. In addition, ORM is responsible for the Agency's financial management, program reviews and analyses, and grants administration. The Office of Planning and Evaluation (OPE) provides agencywide economic and policy analysis, program evaluation and manages the review process for standards and regulations.

	1980		1981		Change	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Office of the Assistant Administrator.....	27	$1,591	27	$1,631	...	+$40
Office of Management and Agency Services.....	671	23,170	675	23,485	+4	+315
Office of Resources Management...	244	9,217	238	9,453	-6	+236
Office of Planning and Evaluation	87	8,894	93	12,734	+6	+3,840
Total.....	1,029	42,872	1,033	47,303	+4	+4,431
Full-time Equivalency.....	1,375		1,395		+20	

The Agency requests a net increase of four positions and $4,431,000 for the Office of Planning and Management in 1981. The net increase of four positions in the Office of Management and Agency Services reflects reductions in the headquarters personnel, contracts and facilities and support service functions and an increase in funding and personnel to strengthen the management of the Agency's information systems. EPA has had difficulity in formulating regulatory policies among its complex programs because of the lack of effective and integrated information management. Enhanced central management of information resources is essential in order to track the type, source, volume, movement and disposal of hazardous wastes and to integrate the Resource Conservation Recovery Act (RCRA) data with other Agency information systems. The Office of Planning and Evaluation will use additional funds and six positions to analyze the benefits of EPA's regulations; in promoting alternative fuels; to help the regional offices accelerate their processes for awarding permits to energy facilities; and to prepare the "Cost of Clean Air and Water Report" for the Congress.

The major contracts for the Office of Planning and Management for 1980 and 1981 are summarized below:

Office	1980	1981	Change	Purpose
	(in thousands of dollars)			
Office of Management and Agency Services.....	770	500	-270	Executive development and training contracts.
Office of Resources Management	1,360	1,207	-153	Contract assistance for the determination of the resource impact of new regulations, such as those covered by the Resource Conservation Recovery Act and Superfund, and of construction grants; development and modification of workload analysis; budget formulation; grants information system modifications; and ORM systems integration.
Office of Planning and Evaluation.....	4,588	8,143	+3,555	Contracts to assess the economic impact of EPA regulations on major industries, the benefits of major EPA regulations, the energy impact of environmental regulations, the environmental impact of energy legislation, and to perform statistical studies.

1980 Explanation of Change from Budget Estimate

The net increase of $5,932,000 results from several actions. An increase of $2,288,200 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. Congressional reductions of $2 million each to Agency travel costs and supplies and expenses and $1 million to ADP costs resulted in a decrease of $127,400, $2,200 and $3,700, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $4,078,800 to this activity.

A reprogramming of $2,300 was made to the Office of General/Regional Counsel to support projected costs based on prior year experience. A transfer of $51,800 was made to the Office of Research and Development program management from the Office of Resources Management. A transfer of $48,800 was made from water quality effluent standards and guidelines to the Office of International Activities to support an employee transfer.

A transfer of the Environmental Workforce Coordination function from the Office of Environmental Review, $347,000, was made to the Office of Research and Development interdisciplinary media ($262,700) and to the Office of Enforcement program management ($84,300). A transfer of $81,000 was made to the Office of Management and Agency Services from the uncontrolled hazardous waste sites activity to provide for contracts management requirements in support of the hazardous wastes activity.

A transfer of $35,000 was made from Office of Management and Agency Services to noise strategies implementation to support an employee transfer.

REGIONAL MANAGEMENT

Budget Request

The Agency requests a total of $23,641,000 for 1981, an increase of $2,198,600 from 1980.

Program Description

This subactivity provides for the salaries and related expenses of the Regional Administrators, their immediate staffs and those staff offices reporting directly to them, such as intergovernmental relations, public affairs, and civil rights. In addition, this subactivity includes the region's central management functions including planning and analysis, budgeting, financial management, personnel management and administrative services.

In 1981, the Agency will use 12 additional FTEs to expand its Regional Analytic Centers in two regions and to initiate Regional Analytic Centers in two other regions. These Centers will continue to employ individuals with a high level of management and analytic skills, who will allow the regions to more effectively participate in the agencywide regulatory reform process.

The Agency requests eight more FTEs for its regional personnel organizations in order to reduce processing time and devote more time to labor management relations, thereby improving the overall management effectiveness of the regional offices.

These increases are offset by decreases in FTEs in the regional management, financial management, and administrative services activities.

1980 Explanation of Change from Budget Estimate

The net increase of $1,752,300 results from several actions. An increase of $819,800 results from the cost of the October 1979 pay raise and is included in a proposed supplemental appropriation. Congressional reductions of $2 million, each to Agency travel costs and supplies and expenses and $1 million to ADP costs resulted in a decrease of $83,700, $78,800 and $4,000, respectively. An overall reprogramming throughtout the Agency to provide sufficient salary funds to cover authorized workyears resulted in an increase of $1,082,100 to this activity.

A reprogramming of $100,000 was made to regional support to support costs of printing, drafting, mail, and library services previously funded in the management account. A reprogramming of $116,900 was made from air stationary source enforcement ($12,500), radiation program implementation ($100), drinking water enforcement ($13,500), noise program implementation ($400), toxic substances enforcement ($3,500), toxic substances management ($11,500), water quality enforcement ($73,800), and interdisciplinary EIS reviews ($1,500) to support increased regional personnel, financial, and administrative management.

MANAGEMENT AND SUPPORT

SUPPORT

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
Salaries and Expenses:					
Program Support.....	$5,139	$5,762	$6,534	$6,338	-$196
Agency Support.....	71,656	74,761	74,137	87,871	+13,734
Regional Support.....	8,388	8,917	8,469	11,674	+3,205
Total.....	85,183	89,440	89,140	105,883	+16,743

Purpose

Support services consist of a wide assortment of other-than-personnel costs, such as office and laboratory services, building operations and maintenance, communications, facilities lease costs, and central ADP services, which are managed centrally and provide necessary services to the entire Agency. In most instances, these services cannot be directly attributed to a specific organization or program.

PROGRAM SUPPORT

Budget Request

The Agency requests a total of $6,338,100 for 1981, a decrease of $196,100 from 1980.

Program Description

These costs include support services which are directly incurred to operate the laboratories of the Office of Research and Development, the Office of Pesticides and Toxic Substances, and the Office of Air, Noise, and Radiation. These direct costs consist mainly of laboratory and office services, utilities, building maintenance, and other housekeeping items. The decreasing need for program support funds for the Office of Research and Development in 1981 is due to one-time costs for laboratory renovation that will be incurred during 1980. The program support increases for the Office of Pesticides and Toxic Substances and the Office of Air, Noise, and Radiation are due to projected cost increases for utilities, building operations, and laboratory and office services.

1980 Explanation of Change from Budget Estimate

The net increase of $772,300 results from several actions. Congressional reductions of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $300 and $12,400, respectively.

A reprogramming of $785,000 was made within the Office of Research and Development from other media to support increased lab maintenance costs due in part to increasing costs of energy and the contracts required to replace the services of maintenance personnel.

AGENCY SUPPORT

Budget Request

The Agency requests a total of $87,871,000, an increase of $13,733,500 from 1980.

Program Description

The Agency support subactivity provides general support services to all program operations at EPA headquarters; Research Triangle Park (RTP), North Carolina; and Cincinnati, Ohio. It also includes a number of support activities which serve the needs of all agency programs and which are managed at the headquarters level. The agency support subactivity can be summarized in terms of the following major areas of cost:

Office Services--Common services at the three locations referred to above including laboratory and office supplies, maintenance of office equipment, printing and duplicating, audio-visual equipment and contracts, and motor pool operations.

Building Services--Utilities, local telephone service, building alterations and space relocations, building maintenance contracts, guard and janitorial service, employee health service contracts, and the like for the office and laboratory facilities at the three locations.

Library Services--Books, journals, equipment, and service contracts for the branch libraries at headquarters, Research Triangle Park, and Cincinnati, as well as specialized ADP services, literature searches, technical reports processing and library systems development for the agencywide library system.

Nationwide Costs--All Agency costs for the following support activities: facilities rental and associated costs; payments to the U.S. Postal Service; Federal telecommunications service (FTS), security investigations; reimbursements to the Federal Employees Compensation Fund; payments to the Public Health Service for personnel administration services for commissioned officers assigned to EPA; and contracts which support the Agency's occupational health and safety program.

ADP Technical Support--Contracts for systems development and evaluation and other technical services required to support the Agency's central ADP activities.

ADP Timesharing Services--Central ADP services provided to all Agency programs through timesharing contracts with commercial suppliers or by in-house computer facilities.

The following tabulation is a breakdown of overall costs of providing support services:

	(Dollars in thousands)		
	1980	1981	Change
Office Services	$3,692	$4,136	+$444
Building Services	12,373	13,295	+922
Library Services	1,101	1,246	+145
Nationwide Costs	34,916	36,075	+1,159
ADP Technical Support	3,584	13,929	+10,345
ADP Timesharing	18,471	19,190	+719
Total	74,137	87,871	+13,734

The requested increase of $444,000 for Office Services will provide for expected increases in the cost of printing and duplicating, expendable office supplies, equipment maintenance, motor vehicle operations, and audio-visual services.

The Building Services increase of $922,000, is related primarily to increased costs for utilities, telephones, preventive maintenance contracts or other minor services contracts. Most of the cost items under Building Services are for mandatory costs such as telephone and utilities or for contracts to provide essential services such as building and equipment maintenance.

The $145,000 increase requested for Library Services will cover increases in the cost of scientific and technical publications and support contracts as well as the acquisition of additional materials required by increased program office activity.

The $1,159,000 increase requested for Nationwide Costs is related primarily to the 1980 annualized costs of additional space which is being leased to accommodate additional Agency personnel authorized in 1979 and 1980, or to replace existing leased space which is inadequate for program purposes. Other minor increases relate to increased mail costs and Federal Telecommunications Services.

The ADP Technical Support increase of $10,345,000 is to provide for a major ADP procurement, conducted in accordance with OMB circular A-109. A major aspect of the A-109 is the Government funding of competing contractors to develop alternative system concepts for meeting EPA's ADP demands in the 1980's and beyond. Funding of this request will enable four contractors to participate in the competitive process of concept development through systems engineering.

The ADP Timeshare funds provide for operating two large scale central data centers. These centers, accessible through a nationwide telecommunications network, provide computer services for most of EPA. The requested increase of $719,000 is to offset increasing contractor labor costs, with the level of service remaining approximately the same as FY 1980.

1980 Explanation of Change from Budget Estimate

The net decrease of $624,100 results from several actions. Congressional reductions of $2 million to Agency travel costs and $1 million to ADP costs resulted in a decrease of $5,600 and $706,500, respectively. A reprogramming of $88,000 was made from the uncontrolled hazardous waste sites activity to support the increased nationwide support costs associated with this activity.

REGIONAL SUPPORT

Budget Request

The Agency requests a total of $11,674,100, an increase of $3,205,000 from 1980.

Program Description

This activity covers the mandatory support for regional offices including telephone service, guard service, supplies, printing, copying services, rental of office equipment, GSA work orders, and ADP equipment. This activity also provides for other necessary services such as management surveys of equipment utilization library services, and laboratory analyses. Cost increases over the past three years without accompanying budget increases have severely hampered the ability of the regions to provide an adequate level of support services. The requested increase of $3,205,000 for all 10 regions will provide the funds needed to offset these cost increases and to meet the increased responsibilities of the regions under new legislation such as the Resource Conservation and Recovery Act and the Toxics Substances Control Act.

1980 Explanation of Change from Budget Estimate

The net decrease of $448,300 results from several actions. Congressional reductions of $2 million each to Agency travel costs and supplies and expenses and $1 million to ADP costs resulted in a decrease of $29,800, $327,900, and $11,400, respectively. An overall reprogramming throughout the Agency to provide sufficient salary funds to cover authorized workyears resulted in a decrease of $291,200 to this activity.

A reprogramming of $112,000 was made from the uncontrolled hazardous waste sites activity to support the increased regional support costs associated with this activity. A reprogramming of $100,000 was made from regional management to support costs of printing, drafting, mail, and library services previously funded in the management account.

BUILDINGS AND FACILITIES

PROGRAM HIGHLIGHTS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Buildings and Facilities:					
Appropriation.....	$1,880	$1,425	$1,425	$4,115	+$2,690
Outlays.....	2,367	2,000	2,000	2,500	+500
Authorization Level...	Authorization is by virtue of the Appropriation Act.				

OVERVIEW AND STRATEGY

This appropriation covers design and construction of all new EPA owned facilities as well as necessary repairs and improvements to all federally owned facilities which are occupied by EPA.

The Agency has no plans for significant additions or expansions to its facilities through 1981. Emphasis will be on maintaining or replacing existing structures at the 23 separate Federal installations which EPA owns or occupies, with primary attention given to projects which are (1) required to protect the health and safety of EPA employees or (2) provide more effective pollution control.

Starting with the Agency's 1980 budget request, budgeting for a number of projects is on a "phased" basis. Under this approach, design funds for some projects are requested in 1981, while requests for actual construction funds will be deferred to subsequent years. This will enable EPA to obligate almost all of the funds requested and prevent the accumulation of unobligated balances that sometimes occurred in the past.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Buildings and Facilities Program.....	$1,425
Increase related to needed repairs and improvements and for the construction of the shop and storage building at the Gulf Breeze facility.	+2,690
1981 Buildings and Facilities Program.....	4,115

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

An appropriation of $4,115,000 is requested for the Buildings and Facilities account, an increase of $2,690,000 over 1980. Of the total amount requested, $3,665,000 will be used for repairs and improvements to existing facilities and $450,000 for the construction of the shop and storage building at Gulf Breeze, Florida.

2. Changes from Original Budget Estimate

There is no change from the budget estimate.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations	$1,880	$1,794
Change in amount of carryover funds available	-644	-369
Program increase	+253	+1,575
Change in rate of obligation	+305	...
Total estimated obligations	1,794	3,000
(From new obligation authority)	(1,425)	(3,000)
(From prior year funds)	(369)	(...)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The amount of carryover funds to be obligated in 1980 is $369,000, a decrease of $644,000 from the 1979 level. In 1981, no carryover funds are expected to be available, thereby reducing obligations by $369,000.

The increase of 1980 budget authority over the 1979 level will increase obligations by $253,000; the change in 1981 will increase obligations by $1,575,000. A change in the rate of obligation in 1980 reflects an increase of $305,000.

60-531 O - 80 - 61

BUILDINGS AND FACILITIES

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Appropriation					
Repairs and Improvements	$1,288	$1,375	$1,375	$3,665	+$2,290
New Facilities.....	592	50	50	450	+400
Total.....	1,880	1,425	1,425	4,115	2,690

Budget Request

The Agency requests a total of $4,115,000 for 1981, an increase of $2,690,000 from 1980.

Program Description

The appropriation covers the design and construction of new EPA owned facilities as well as necessary repairs and improvements to federally owned installations which are occupied by EPA. Payments made for modifications and repairs to leased facilities are covered under the agency support subactivity which is described under the management and support media.

REPAIRS AND IMPROVEMENTS

1979 Accomplishments

The bulk of the repair and improvement projects, which have been completed or are underway, were undertaken to correct health and safety conditions, effect pollution control, or maintain property.

1980 Program

Work on 28 projects at 15 separate locations will be initiated in 1980. These projects, which have a total estimated cost of $913,000, are needed to correct health and safety deficiencies, pollution abatement, or to prevent serious deterioration to structures. They include hazardous materials storage areas and disposal systems, modifications to ventilating systems, and a specialized laboratory for handling carcinogens. The balance of the 1980 program of $462,000 will be used to complete construction of projects started in previous years.

1981 Plan

Work will be initiated on a total of 37 separate projects at 18 locations. The projects planned for 1981 include:

Location	Project Description	Amount
Narrangansett, R.I.	Emergency Generator Exhaust	$10,000
	Alarms	3,000
	Pollution Abatement	210,000
	Safety Modification, Support Buildings	10,000
Edison, N.J.	Water Pollution Abatement, Design	10,000
	Fumehood Modifications	20,000
Beltsville, MD.	Fumehood Modifications	20,000
	Ventilation System Modifications	5,000
	Barrier Change Room	5,000
	Ventilation System Modifications	30,000
Newtown, Ohio	Isolation Room Design	50,000
	Fumehood Modifications	20,000
Cincinnati, Ohio	Fumehood Upgrading	200,000
Grosse Ile, Mich.	Fumehood Modifications	20,000
	Fencing Lower Base Property	50,000
Ada, OK.	HVAC Modifications	500,000
	Fumehood Modifications	20,000
Corvallis, Oregon	Hazardous Materials Storage	30,000
	Fire Suppression System	25,000
	Fire Suppression System Design	20,000
	Fumehood Upgrading	50,000
Wenatchee, Washington	Fumehood Upgrading	15,000
	Fire Suppression System	20,000
Denver, Colorado	Modify HVAC (NEIC)	175,000
	Fire Suppression	35,000
	Egress Modifications	40,000
Chicago, Ill.	Fumehood Upgrading	20,000
	Containment Lab	100,000
Gulf Breeze, Fla.	Effluent Treatment System Design	15,000
	Fire Suppression	171,600
Vint Hill, Va.	Pollution Abatement	25,000
Bay St. Louis, Miss.	Fumehood Vent System Modifications	125,000
Manchester, Washington	Install Waste Holding Tank	15,000
Athens, Ga.	HVAC Modifications	800,000
Duluth, Minn.	Pollution Abatement	600,000
	Fire Suppression System	200,000
	Total, Repairs and Improvements	3,664,600

NEW FACILITIES

1979 Accomplishments

A contract was awarded in November 1977 for the construction of the Central Regional Laboratory for Region X. This facility, which is located in Manchester, Washington, was completed for occupancy in July 1979. Design work was initiated in the late summer of 1978, for a Marine Environmental Assessment Laboratory building located at the Environmental Research Laboratory in Gulf Breeze, Florida. This facility will house high-hazard studies related to industrial effluents and energy production and use. Phases 1 and 2 of this 3-phase program are aimed at replacing existing frame structures at the Gulf Breeze installation which are unsafe for high-hazard operations and which cannot be upgraded economically.

1980 Program

A contract for the construction of the Marine Environmental Assessment Facility at Gulf Breeze, Florida was awarded September 30, 1979. Construction was started in November 1979, with completion scheduled for September 1980. Estimated cost for design and construction for the facility is $1,000,000. Design of the third phase of the Gulf Breeze replacement program - a building which will house shop and storage areas and electric switchgear equipment - will be initiated. Estimated cost of the design is $50,000.

1981 Plan

Funds in the amount of $450,000 are requested in 1981 for the construction of the shop and storage building - Phase 3 of the Gulf Breeze building replacement program. Funds for design of this structure were provided in 1980.

SCIENTIFIC ACTIVITIES OVERSEAS

PROGRAM HIGHLIGHTS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Scientific Activities Overseas:					
Appropriation.....	$2,719	$4,000	...	$1,000	+$1,000
Outlays.....	2,260	3,600	1,800	3,000	+1,200
Authorized Levels....	Authorization is by virtue of the Appropriation Act.				

OVERVIEW AND STRATEGY

Scientific Activities Overseas (SAO) are funded from excess foreign currencies accruing to the United States under various programs. The SAO program includes cooperative research and related activities of mutual interest to EPA and the participating SAO countries. These activities serve as a link between EPA and foreign environmental agencies and institutions that have mutual interests in seeking solutions to environmental problems, and enable EPA to capitalize on unique research opportunities without contributing to a balance of payments deficit or to domestic inflation. The SAO program supports the Agency's international goals, and is designed to: (1) augment EPA's multimedia data base, (2) assist in the solution of environmental problems by merging the expertise of U.S. and foreign investigators, (3) extend new technology into a broader world community, (4) assist in meeting EPA international agreements, and (5) develop and/or demonstrate new technologies including sampling, modelling, and control strategies.

SAO projects have encompassed practically all environmental concerns--air, water, solid waste, radiation, toxics, and pesticides, and involve all phases of environmental research activities--identification of pollutants and the development of an effective data base, assessment of pollutants' effects on human health and the environment, the development of control technologies, and implementation of systems and procedures for monitoring ambient conditions.

The SAO review procedure for approving projects closely parallels the procedures for domestic programs. Official proposals are initiated by institutions in participating SAO countries after informal communications have identified mutual research interests. Scientific evaluations are made of each proposal by appropriate EPA scientists and engineers to determine their relevancy to domestic programs. University and industrial consultants frequently are requested to provide technical comments on the proposals. Official approval is made with the concurrence of the responsible EPA program office, the EPA Office of International Activities, and the Department of State.

In addition to the direct research benefits to EPA from SAO, this program also stimulates environmental protection activities in participating countries. Without exception, countries active within the SAO program have significantly enhanced mechanisms to deal with environmental problems.

Furthermore, the SAO programs are recognized in the United States and in all participating countries as visible evidence of U.S. efforts to engage in peaceful endeavors directed toward the development of knowledge and technological advancement specific to our global environment.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Scientific Activities Program.....	...
Increase relates to program for India and Pakistan.....	+1,000
1981 Scientific Activities Program.....	1,000

SUMMARY OF BUDGET ESTIMATES

1. Sumary of Budget Request

An appropriation of $1 million is requested for the Scientific Activities Overseas activity.

2. Changes from Original 1980 Budget Estimate

The decrease of $4 million was made by the Congress.

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations.....	$2,719	$3,204
Change in amount of carryover funds available.....	+485	-3,004
Program increase.....	...	+1,000
Total estimated obligations.....	3,204	1,200
(From new obligation authority).....	(...)	(1,000)
(From prior year funds).....	(3,204)	(200)

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The increase in budget authority requested in 1981 is expected to increase obligations by $1 million.

The amount of carryover funds to be obligated in 1980 is $3,204,000, an increase of $485,000 over the 1979 level. In 1981, only $200,000 of carryover funds is expected to be available, thereby reducing obligations by $3,004,000.

SCIENTIFIC ACTIVITIES OVERSEAS
(Special Foreign Currency Program)

	Actual 1979	Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
	(dollars in thousands)				
Program Levels					
SAO Projects	7	10	6	6	...
Technology Transfer Seminars	...	2	1	1	...
Appropriation					
Burma	...	...	...	...	...
Egypt	$1,905	$2,500	...	...	...
Pakistan	...	500	...	$300	+$300
India	809	1,000	...	700	+700
Tunisia	5	...	...	...	...
Reserve	...	...	...	...	...
Total	2,719	4,000	...	1,000	+1,000

Budget Request

The Agency requests a total of $1,000,000 for 1981. There were no funds appropriated in 1980. Carryover funds totalling $3,203,800 will be used and is distributed by country, as follows:

Burma	$10,700
Egypt	60,800
Pakistan	113,400
India	2,444,600
Undistributed	574,300
	3,203,800

1979 Accomplishments

- SAO cooperative project reports were published through the EPA and in U.S scientific journals. Research results shown in the reports are useful to the EPA, environmental decision makers, regulatory officials, and the public and private sectors.
- Initiated seven new projects--three were started in Egypt, four in India.
- Planned a U.S./Indian Binational Workshop on Environmental Pollution. This workshop, sponsored by the Indian Department of Science and Technology, represented continuing efforts in the development of cooperative programs. EPA team members and representatives from Indian governmental offices, research laboratories, universities, and industries identified projects dealing with air pollution, health and ecological effects, and water pollution.

- Participated in Science and Technology Subcommission meetings relating to SAO programs in Egypt and India. These meetings provide a forum for setting research priorities that are compatible with environmental interests of EPA and the participating countries.

1980 Program

The overall goals of the 1980 program relating directly to environmental problem areas of concern to the EPA include: studies to provide increased capability to evaluate the environmental impact of chemicals, increased activity in the development of waste management technology and in improving capabilities for reuse of limited water resources, the gathering of primary data on health consequences of toxic substances use, the collection of data on oil pollution to permit better clean-up practices, the development of new technology to further reduce the level of industries air pollution, and the demonstration of best available technology for pollution control.

An EPA-Indian workshop was held in India as a follow-up to the 1978 workshop held there. The workshop examined and disseminated the accomplishments of the on-going projects and identified future projects of mutual interest in monitoring, evaluation, prevention, and control of environmental pollutants.

1980 Explanation of Change from Budget Estimate

The reduction of $4 million resulted from congressional action.

1981 Plan

Cooperative programs will be developed to capitalize on unique control data on health and environmental effects, to collect data needed under EPA's legislation on industrial chemical control, and to improve EPA's ability to measure the effects of human and environmental exposure to commercial chemicals. New programs addressing innovative multi-media treatment control technology, and limited development and demonstration of waste management practices applicable to specific U.S. conditions will be negotiated.

These new programs will focus on the safe application of waste waters, development of waste water management strategies, and research on new control technologies for water as well as for particular industries; studies on toxicity, including the effects of selected commercial chemicals on human health, testing procedures, and tracing the fate of heavy metals and toxic substances in water systems; and finally, the development of sampling techniques for the determination of organic emissions from various processing plants.

INDIA ($700,000)

U.S. and Indian environmental resources identified during the EPA/India Workshop were brought together through cooperative planning mechanisms developed during the Workshop. SAO projects are being given added support under the aegis of the U.S./India Joint Commission on Science and Technology which meets annually to determine broad areas of cooperation and to stimulate cooperative activities.

Areas of mutual interest under continuing study include the establishment of human and environmental effects of exposure to toxic substances; development of sampling techniques for organic emissions from processing plants, development of waste water management strategy and research on new technologies for the treatment and control of waste water, and a comparison of the fate of toxic substances in fresh water and marine ecosystems.

Activities will include:

- Treatment of industrial wastes by physico-chemical methods.
- Studies on utilization of sewage for irrigation and the related environmental and health aspects.
- Monitoring of water pollution by use of biological indicators, coastal and fresh water.
- Methods to improve prediction capabilities of estuarine and coastal waters.

PAKISTAN ($300,000)

The SAO program in Pakistan is supported through the environmental division within the Ministry of Production, Environment and Urban Affairs. Organizations and universities identified by the Ministry as having resources to support SAO programs have prepared projects for SAO funding. The studies involve highly trained professional and technical staff and give promise of producing data that would be useful to the control and abatement of pollutants.

Ongoing studies include investigations of by-product recovery from industrial waste waters, an assessment of waste waters in small plants, and studies on low cost control technologies for industrial and trade wastes.

New projects will be initiated as follows:

- Studies on low cost control technologies for industrial wastes.
- Development of techniques for the assessment, management and control of marine pollution problems.

U. S. REGULATORY COUNCIL

PROGRAM HIGHLIGHTS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
		(dollars in thousands)			
U. S. Regulatory Council					
Appropriation	...	$3,238	$3,082	$3,338	+$256
Permanent Positions	...	10	11	11	...
Full-Time Equivalency	...	16	26	26	...
Outlays	...	2,600	2,400	2,800	+400

OVERVIEW AND STRATEGY

This appropriation covers the salaries and expenses of the U. S. Regulatory Council and its supporting staff. The Council is composed of the heads of those agencies within the Executive Branch which have regulatory responsibilities. Its purpose is to maintain an overview of Federal regulatory activities; to assist the President in managing them in a coordinated manner so as to limit their adverse impacts on the Nation's economy; and to publish the semiannual Calendar of Federal Regulations. The Regulatory Council is composed of 18 executive agencies and 18 independent agencies. The member agencies are:

Executive Agencies
- Administrative Conference of the United States
- Department of Agriculture
- Department of Commerce
- Department of Energy
- Department of Health, Education and Welfare
- Department of the Interior
- Department of Justice
- Department of Labor
- Department of Transportation
- Department of Treasury
- Environmental Protection Agency
- Equal Employment Opportunity Commission
- General Services Administration
- National Credit Union Administration
- Small Business Administration
- United States International Trade Commission
- Veterans Administration
- Department of Housing and Urban Development

Independent Regulatory Agencies
- Civil Aeronautics Board
- Commodity Futures Trading Commission
- Consumer Product Safety Commission
- Federal Communications Commission
- Federal Deposit Insurance Corporation
- Federal Election Commission
- Federal Energy Regulatory Commission
- Federal Home Loan Bank Board
- Federal Maritime Commission
- Federal Mine Safety and Health
- Federal Reserve System
- Federal Trade Commission
- Interstate Commerce Commission
- National Labor Relations Board
- Nuclear Regulatory Commission
- Occupational Health and Safety
- Postal Rate Commission
- Securities and Exchange Commission

The Council reports directly to the President. For administrative convenience, because the Council's chairman is the EPA Administrator, its 1981 budget request is included within EPA's overall budget submission.

SUMMARY OF INCREASES AND DECREASES

	(in thousands of dollars)
1980 Regulatory Council Program.....	$3,082
This increase will provide for additional special projects.....	+256
1981 Regulatory Council Program.....	3,338

SUMMARY OF BUDGET ESTIMATES

1. Summary of Budget Request

The U.S. Regulatory Council requests an appropriation of $3,338,000 to provide for staff salaries, related expenses, contracts, grants, and cooperative agreements.

2. Changes from Original 1980 Budget Estimates

Changes from the budget are as follows:

	(in thousands of dollars)
Original 1980 estimate.....	$3,238
Congressional reduction.....	-200
October 1979 pay raise, proposed supplemental.....	+44
Current 1980 estimate.....	3,082

ANALYSIS OF INCREASES AND DECREASES TO OBLIGATIONS

	Current Estimate 1980	Estimate 1981
	(in thousands of dollars)	
Prior year obligations.....	...	$3,082
Program increases.....	+$3,038	+256
Effect of October 1979 pay raise.....	+44	...
Total estimated obligations.....	3,082	3,338
(From new obligational authority).....	(3,082)	(3,338)
(From prior year funds).....	...	...

EXPLANATION OF INCREASES AND DECREASES TO OBLIGATIONS

The 1981 program increase for special projects results in an estimated obligation of $256,000.

Budget Request

The U. S. Regulatory Council requests a total of $3,338,000 for 1981, an increase of $256,000 from 1980. The additional $256,000 requested by the U. S. Regulatory Council would be used to conduct additional special projects in 1981.

Program Description

The U. S. Regulatory Council was established to provide the President with a complete picture of the regulation development efforts of the various agencies under his direct control, and to help him provide for better management of the Federal regulatory process. The Council, consisting of a small staff of professionals trained in law, economics and the sciences supported by research assistants and clerical personnel, will work in the following areas:

Calendar Development - This will involve refining and maintaining a consolidated calendar, published semiannually, of all major regulatory actions proposed by the member agencies. This calendar will help make it possible to identify the interrelationships among existing and proposed regulations. The Council also publishes supplementary information on special topics such as regulatory initiatives.

Liaison - A substantial amount of effort is spent maintaining liaison with member agencies, interest groups, and the public over the effects of various regulations and the ways in which the Administration is attempting to cope with regulatory problems and reform.

Special Projects - The staff will also undertake a number of special projects aimed at resolving specific regulatory problems. These include:

- Unique short term problems which involve the regulatory activities of member agencies;
- Sector studies which focus on the effect of specific regulations on certain industries, such as the coal, automobile and nonferrous metal industries; and
- Improved techniques for regulatory analysis including cost benefit studies and assessments of innovative regulatory techniques.

1979 Accomplishments

The U. S. Regulatory Council was not funded in FY 1979.

1980 Program

The U. S. Regulatory Council, composed of the heads of the Executive Branch regulatory agencies and certain independent regulatory agencies, will review the cumulative impact of regulations and publish the semiannual Calendar of Federal Regulations, which will identify and coordinate resolutions of inter-Agency regulatory issues.

1980 Explanation of Changes from Budget Estimates

The decrease of $156,000 results from two actions. First, the Congress reduced the request by $200,000. Second, a proposed supplemental to cover the October 1979 pay raise, provides an increase of $44,000.

1981 Plan

The U. S. Regulatory Council will further refine and maintain a semiannual consolidated calendar of all major regulatory actions proposed by the member agencies. The Council will conduct additional special projects to resolve specific regulatory problems. These special projects include:

(a) Development of an index for the Calendar of Federal Regulations;

(b) Expansion of the cost-benefit studies now underway on distinct industries affected by regulations;

(c) Development of an automobile regulatory calendar;

(d) Initiation of a study of regulations and innovations in science and technology;

(e) Development of a calendar of regulatory decisions; and

(f) Expansion of the Innovative Techniques project.

CONSTRUCTION GRANTS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
			(in thousands of dollars)		
Appropriation.....	$4,200,000	$3,800,000	$3,400,000	$3,700,000	+$300,000
Obligations (Gross)*...	4,256,556	3,600,000	4,800,000	4,500,000	-300,000
Appropriation.....	(4,144,292)	(3,600,000)	(4,643,100)	(4,500,000)	(-143,100)
Contract Authority...	(112,264)	(...)	(156,900)	(...)	(-156,900)
Outlays.....	3,766,079	3,600,000	3,900,000	3,950,000	+50,000
Appropriation.....	(689,781)	(1,260,000)	(1,400,000)	(1,750,000)	(+350,000)
Contract Authority...	(3,066,298)	(2,340,000)	(2,500,000)	(2,200,000)	(-300,000)
Liquidation of Contract Authority.....	1,400,000	1,500,000	1,500,000	1,700,000	+200,000
Authorization Levels.	5,950,000	5,950,000	5,950,000	5,950,000	

*Net obligations in 1979, 1980, and 1981 are $300 million less each year.

Budget Request

An appropriation of $3.7 billion is requested for 1981 to continue the municipal construction grants program established under Title II of the Federal Water Pollution Control Act, as amended (FWPCA). An appropriation of $1.7 billion is also requested for 1981 for the liquidation of contract authority pursuant to authority contained in Section 203 of the FWPCA. Obligations for 1981 are expected to total $4.5 billion, a decrease of $300 million from 1980. Outlays will increase by $50 million in 1981, to a total of $3.95 billion.

Since last year's budget request there has been a significant increase in actual or projected grant award activity. In last year's request, EPA estimated obligations of $3.4 billion and $3.6 billion for 1979 and 1980, respectively. Actual gross obligations for 1979 were $4.256 billion and the current estimate for 1980 is $4.8 billion. There were two factors which contributed to these increases. First, Congress did not extend the allotment period during which funds can be obligated from two to three years as requested by EPA, causing several States to move projects into construction to avoid loss of funds to reallotment. Second, EPA has continued to delegate major management responsibilities to State agencies, thus increasing overall program resources with attendant enhancements in project development and processing times.

These significantly increased obligation levels will contribute to reduction of unobligated carryover balances at the end of 1980 by $1.6 billion below what was estimated at the time of last year's budget submission. With a continued high level of obligations also expected for 1981, EPA projects that carryover balances will be further reduced by another $500 million by the end of 1981.

Within the constraints of the current method of distributing funds to the States and an appropriation of $3.7 billion, EPA estimates that in 1981 approximately 17 States and 2 territories will have more projects ready for grant award than available

funds. Another 8 States and 1 territory will be close to using all funds and may have to slow down their programs. An allotment formula based primarily on long term needs and population prevents shifting funds from slow-moving into fast-moving States. Accordingly, EPA is studying alternative mechanisms for channeling funds to those States with more high priority projects than available funds, which will result in recommendations to Congress in the near future.

Program Description

This program provides grants to municipal, intermunicipal, State, and interstate agencies to assist in financing the planning, design, and construction of municipal waste water treatment facilities. In addition, under the State management assistance grant program (Section 205(g) of the Act), up to two percent of the funds provided to each State may be used to fund State management of functions delegated through specifically negotiated agreements, depending on the extent of delegation. Amounts made available for obligation are allotted to each State on the basis of formulas set forth in the Clean Water Act (CWA), and subsequent amendments. Within these allotments, grants are awarded on a priority basis for individual projects. Generally, each project is eligible for 75 percent Federal assistance, although grants may provide up to 85 percent for projects using innovative or alternative technology in treatment facility design. The Clean Water Act of 1977 amended selected portions of the Act, including provisions for a 5-year extension of the funding authorization and a mandate to delegate major portions of the program to the States, but did not substantially alter the basic objectives or intent of the original 1972 Amendments (P.L. 92-500).

Under the current legislation, a 3-step approach to funding projects is required. The first step is development of the facilities plan, which includes a preliminary description of the project, a cost-effectiveness analysis of alternatives, an environmental assessment, an infiltration/inflow evaluation, and an identification of effluent discharge limitations. The second step is the development of design plans and specifications. The third and final step is to fund the actual construction of the treatment works. Grants are made for each of these steps, with funding of subsequent steps contingent on the successful completion of prior steps and the availability of funds. Under the new legislation, upon completion of an approved facility plan, communities of 25,000 or less are eligible for a combined design and construction grant in those cases where total estimated cost of treatment works does not exceed $2 million (or $3 million in stipulated "high cost" States). Payments against obligations are made to the grantee as all or portions of each of these steps are completed, usually in the form of progress payments on a monthly basis.

The State management assistance grant program authorizes, at the Administrator's discretion, two percent or $400,000, whichever is greater, of each allotment to cover the cost of delegation of the construction grants program and (to the extent that funds suffice) the National Pollutant Discharge Elimination System (NPDES) permit, dredge and fill, and Section 208 management programs to the States. The goal of this program is to allow the States, rather than EPA, to assume responsibility for day-to-day management of construction grants activities. The timing and extent of delegation and financial support to each State depends on the State's ability to operate a program that meets the necessary competency requirements and policy direction mandated by the law and EPA objectives. A grant is given to a State when it can show that it is able to assume delegated responsibility for a substantial portion of construction grants program activities.

Long-Term Funding Program

The long range goal of the construction grants program is to eliminate the discharge of untreated or inadequately treated pollutants and thereby help to restore or maintain

the quality of the Nation's waters and protect the health and well-being of the people. The current estimate of the remaining Federal cost of meeting municipal construction needs eligible under the act amounts to approximately $49 billion in 1975 dollars. With inflation rates now running at 10 percent or more per year, it is unrealistic to assume that all needs can be addressed with appropriation levels likely to be provided to the program in the foreseeable future. It has become increasingly evident that the present method for distributing funds does not necessarily channel funds to the highest priority projects, nor does it realistically correspond to the actual capabilities of many of the States to obligate the money available to them in the annual allotments.

As a consequence, many States have more money available than they can effectively absorb within a defined period, while other States lack sufficient funding to begin construction of urgently needed waste water treatment projects which are already planned and designed. EPA is, therefore, developing a long-term strategy for the program which will recommend the targeting of available funds to the highest priority needs and to those States capable of using grant funds in the immediate future. This strategy will include legislative recommendations which will be forwarded to Congress in the near future.

The program strategy will continue to recognize that there are limited funds available to meet these pollution control needs and that the funds available must go toward assisting municipalities in meeting the most critical needs in the shortest possible time. Accordingly, the major objectives guiding the program over the near term will continue to be the following:

- The funds available must go toward meeting the environmental requirements of the Clean Water Act in an efficient, effective, and timely manner, using stringent cost-effectiveness criteria on a project-by-project basis to ensure the most appropriate use of funds.

- A substantial portion of funds are to be oriented toward innovative and alternative technology leading to more environmentally compatible solutions to waste control, including water and energy conservation, reuse, and reclamation.

- Funds specifically available for State delegation under Section 205(g) of the Act are to be used to maximize State assumption of program activities in the shortest possible time, under specific EPA policy direction and environmental objectives.

EPA has established a detailed review process related to funding of advanced waste treatment projects to ensure that such funding is strictly limited to those situations where both the higher level of treatment is necessary to meet water quality standards and where the advanced treatment will work to meet these higher standards. In accordance with the Conference Report of the 1979 appropriation for construction grants, the EPA Administrator is now reviewing all waste treatment projects more stringent than secondary and with cost greater than $3 million.

The $3.7 billion requested for 1981 is needed to ensure that the maximum number of States, under the fixed allotment formula legislated by Congress, receive sufficient funds to continue operations. The impact of a lesser appropriation is threefold:

- An estimated 17 States and 2 territories will obligate all of their available funds during 1981 and another 8 States and 1 territory will be close to using all funds and may have to slow down their programs. An amount appropriated less than $3.7 billion would further interrupt the operations of these States, thereby penalizing those States progressing fastest toward meeting the goals of the Act.

- Progress toward State delegation requires sufficient funding, given the two percent legislative limit, to allow full State assumption of tasks in an orderly and planned manner. A lower appropriation would reduce the amounts available for State management assistance and force many States to slow or avoid delegation entirely, which, in turn, would result in increased project delay and force EPA to shoulder tasks not planned for in estimating resource needs.

1979 Accomplishments

During 1979, awards in the construction grants program totalled approximately $4.256 billion, including 982 Step 1, 818 Step 2 Steps 2 + 3, and 799 Step 3 awards. This level of activity resulted in approximately 11,881 active projects in various stages of planning, design, and construction by the end of 1979. The level of Federal outlays, at $3.7 billion, was the highest annual total in the history of the program, with 459 Step 3 projects completed during the year.

The 1979 obligation level was $856 million more than estimated in last year's budget request. The increase occurred because Congress did not extend the allotment period during which funds must be obligated from two years to three years, thus causing several States to speed up their projects to avoid the loss of funds to reallotment. EPA took steps to assure that funds obligated in these States were used on high quality projects. The only State to lose funds to reallotment was Ohio, which lost approximately $25 million.

Under the Section 205(g) State delegation program, a total of 27 delegation agreements were negotiated and signed, bringing the total number of States with delegation agreements as of the end of 1979 up to 30. A total of $60 million was obligated in 1979 as these States began to phase into the primary responsibility for the day-to-day management of the program.

1980 Program

A total of $4.8 billion in gross obligations is projected during 1980. This will fund 3,511 new awards for the planning, design, and construction of treatment facilities. About 11,725 projects will be in various stages of preconstruction or construction activity by the end of the year. Outlay levels will further increase to $3.9 billion. EPA estimates that a total of 42 States (another 12 in 1980 alone) will receive State management assistance grants, totalling $61 million for all States.

1980 Explanation of Changes from Budget Estimate

The Congress reduced the budget request by $400 million, from $3.8 billion to $3.4 billion.

1981 Plan

In 1981, gross obligations totalling $4.5 billion are projected. These obligations will support approximately 2,550 new awards. This represents a decrease over 1980, principally because of the drop in expected numbers of new Step 1 and 2 awards. EPA expects to award State management assistance grants totalling $70 million to 42 States during the year, an increase of $9 million over 1980.

The following table summarizes the 1981 program and compares activity levels to the previous two years:

60-531 O - 80 - 62

Item	1979 Actual	1980 Estimated	1981 Estimated
Total Gross Obligations.....	$4.256 billion	$4.8 billion	$4.5 billion
New Awards			
Step 1.....	982	807	400
Step 2.....	572	1,193	925
Step 3.....	799	1,156	950
Step 2 & 3.....	246	355	275
Active Projects (All Steps).....	11,881	11,725	11,000
Construction Completions (Step 2 & 3).....	459	1,008	1,200
Total Outlays	$3.756 billion	$3.9 billion	$3.95 billion
State Management Assistance Grants			
Number.....	30	42	42
Amount.....	$60 million	$61 million	$70 million

NOTE: Numbers in this table are updated from output numbers in the President's Budget Appendix.

Within the constraints of the current allotment formula and funding mechanism and a $3.7 billion appropriation, approximately 17 States and 2 territories will use all of their available funds in 1981. Another 8 States and 1 territory will be close to using all funds and may have to slow down their programs and stretch out their funds into early 1982. It is partly to address the problems faced by these States that EPA is developing a long-term strategy as noted above.

OIL AND HAZARDOUS SUBSTANCES LIABILITY FUND

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase - Decrease - 1981 vs. 1980
		(dollars in thousands)			
Appropriation	...	...	...	$250,000	+$250,000
Outlays	...	...	...	45,000	+45,000
Authorization Level				Proposed	

Budget Request

Included in the President's Budget is $250 million to cover the first year's operation of the Oil and Hazardous Substances Liability Fund. The Administration's proposal, which is currently before the Congress for consideration, addresses the release of oil, hazardous substances, and hazardous wastes into the environment by spills and from inactive and abandoned disposal sites. It establishes a comprehensive and uniform system of notification, emergency government response, enforcement, liability and compensation for such incidents. A detailed budget justification will be presented as soon as the authorizing legislation is passed.

Proposed Legislation

The Administration's proposed legislation would expand both the authorities available to EPA and the source of compensation for activities under these new authorities. Unlike current Section 311 authority, the proposed legislation addresses releases to the environment (water, land, and groundwater) of oil and hazardous wastes from spills from inactive and abandoned disposal sites. In effect, the legislation converts the Section 311(k) fund from an appropriated fund to an expanded fee-based fund and expands eligibility for reimbursement to include costs of spills cleanup, waste site investigations and containment, limited economic damages to property resulting from spills, and all related administrative and management costs. The proposed legislation authorizes the fund to raise $1.625 billion from appropriations and fees over a 4-year period. (The Section 311(k) fund, in contrast, was established with a $35 million authorization). The size of the fund and the expanded authorities would enable the government, in advance of judicial action and without delay, to clean up and mitigate problems and later recover the public costs.

Program Description

The estimated size of the problem to be addressed by the "Superfund" is based on studies completed under contract to EPA during late 1978. In the uncontrolled hazardous site program, EPA estimates that there are 30,000 to 50,000 sites containing hazardous wastes, of which 1,200-2,000 may present potentially significant problems. The main emphasis will be to isolate the 400 to 500 most critical problem sites and in association with the States, to fund containment actions (within funding limits), and operate an enforcement/cost recovery program against known responsible parties.

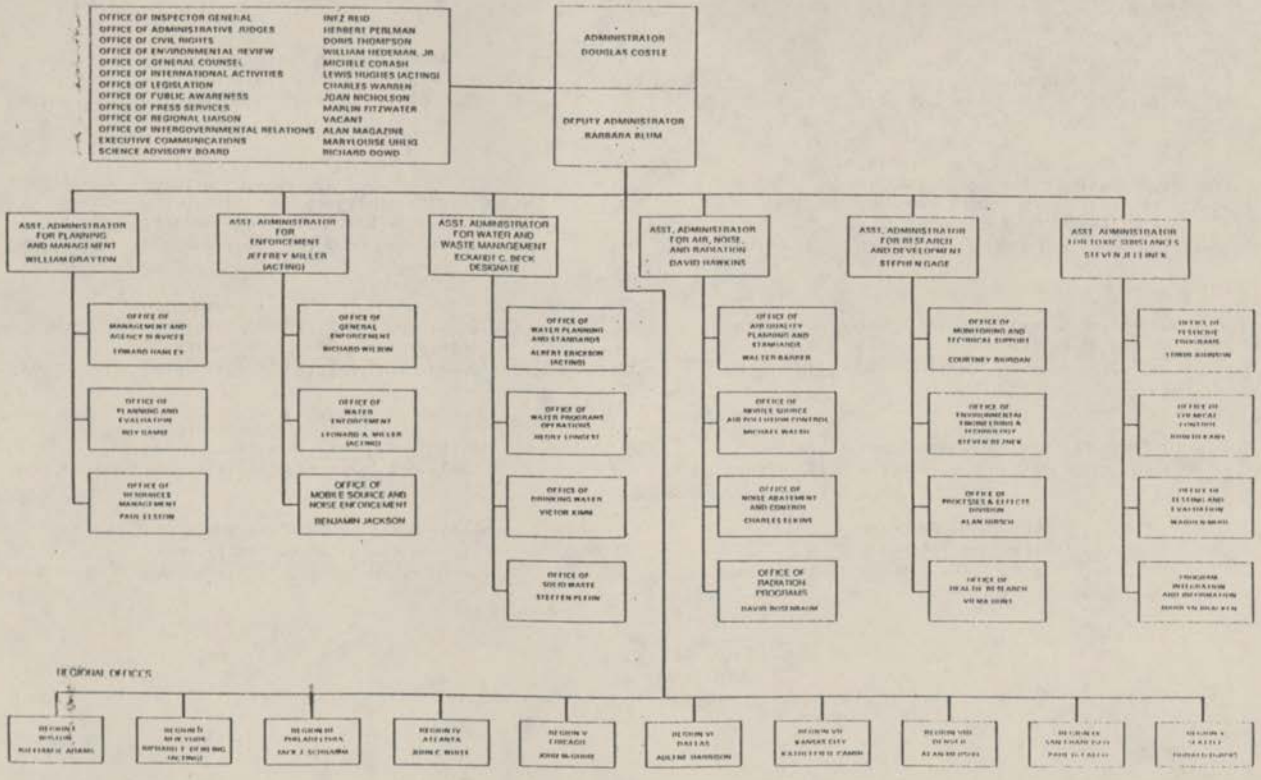
In the emergency spill response program, our studies suggest there will be 3,500 hazardous spills in 1981 with growth to 7,000 by 1984. Oil spills are expected to maintain a level rate of approximately 11,000 for each year, 1981-84. The progress toward addressing the spills problem will be rapid, as much of the infrastructure is already built and the basic regulations and authorities are already in place.

SPECIAL ANALYSES

Contents

	Page
EPA Organization Chart	SA-2
EPA Regional Offices - Locations	SA-3
Summary of Resources	SA-4
Workyears and Budget Authority, By Media and Appropriation, 1980	SA-7
Workyears and Budget Authority, By Media and Appropriation, 1981	SA-8
Total Funds Obligated, 1980	SA-9
Total Funds Obligated, 1981	SA-11
Positions by Grade and Average Employment	SA-13
Classification by Objects:	
Research and Development	SA-15
Abatement, Control and Compliance	SA-17
Salaries and Expenses	SA-19
Buildings and Facilities	SA-23
Scientific Activities Overseas	SA-25
Regulatory Council	SA-26

U.S. ENVIRONMENTAL PROTECTION AGENCY



EPA REGIONS
LOCATIONS AND STATES

Region I	Headquarters, Boston, Massachusetts Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	
Region II	Headquarters, New York, New York New Jersey, New York, Puerto Rico, Virgin Islands	
Region III	Headquarters, Philadelphia, Pennsylvania Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia	
Region IV	Headquarters, Atlanta, Georgia Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee	
Region V	Headquarters, Chicago, Illinois Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin	
Region VI	Headquarters, Dallas, Texas Arkansas, New Mexico, Texas, Oklahoma, Louisiana	
Region VII	Headquarters, Kansas City, Missouri Iowa, Kansas, Missouri, Nebraska	
Region VIII	Headquarters, Denver, Colorado Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming	
Region IX	Headquarters, San Francisco, California Arizona, California, Hawaii, Nevada, American Samoa, Guam, Trust Territories of Pacific Islands, Northern Mariana Islands	
Region X	Headquarters, Seattle, Washington Alaska, Idaho, Oregon, Washington	

Summary of Resources
(dollars in thousands)

	Actual 1979	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Salaries and Expenses				
Budget authority	$452,989	$521,513	$562,542	+$41,029
Obligations	459,485	521,513	562,542	+41,029
Outlays	425,416	442,275	529,000	+86,725
Permanent Workyears	10,086	10,940	11,162	+222
Full-time equivalency	11,964	13,416	13,659	+243
Abatement, Control and Compliance				
Budget authority	524,481	525,957	555,338	+29,381
Obligations	542,909	559,680	542,931	-16,749
Outlays	382,882	397,164	406,740	+9,576
Permanent Workyears	1	...	...	...
Full-time equivalency	42	72	72	...
Research and Development				
Budget authority	221,403	234,574	264,984	+30,410
Obligations	231,621	234,743	263,000	+28,257
Outlays	225,201	233,600	255,000	+21,400
Permanent Workyears	...	...	...	...
Full-time equivalency	...	...	...	...
Scientific Activities Overseas				
Budget authority	2,500	...	1,000	+1,000
Obligations	2,719	3,204	1,200	-2,004
Outlays	2,260	1,800	3,000	+1,200
Buildings and Facilities				
Budget authority	1,172	1,425	4,115	+2,690
Obligations	1,880	1,794	3,000	+1,206
Outlays	2,367	2,000	2,500	+500

	Actual 1979	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Construction Grants				
Budget authority	$4,200,000	$3,400,000	$3,700,000	+$300,000
Obligations	4,256,558	4,800,000	4,500,000	-300,000
Outlays	3,756,079	3,900,000	3,950,000	+50,000
Oil and Hazardous Liability Fund				
Budget authority	...	...	250,000	+250,000
Obligations	...	...	250,000	+250,000
Outlays	...	...	45,000	+45,000
Operations, Research and Facilities				
Obligations	3,742	1,414	800	-614
Outlays	6,156	5,000	3,200	-1,800
Permanent workyears	...	...	...	...
Full-time equivalency	...	...	...	...
Revolving Fund				
Obligations	580	580	580	...
Outlays	39	40	50	+10
Permanent workyears	...	...	...	...
Full-time equivalency	...	...	...	...
Trust Funds				
Budget authority	...	...	...	...
Obligations	21	25	25	...
Outlays	36	20	20	...
Reimbursements				
Obligations	...	...	...	...
Permanent workyears	91	64	64	...
Full-time equivalency	101	73	73	...

	Actual 1979	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Regulatory Council				
Budget authority	...	3,082	3,338	+256
Obligations	...	3,082	3,338	+256
Outlays	...	2,400	2,800	+400
Permanent workyears	...	11	11	...
Full-time equivalency	...	26	26	...
Consolidated Working Fund				
Obligations	...	...	...	...
Outlays	...	10	10	...
Total, Environmental Protection Agency				
Budget authority	5,402,545	4,686,551	5,341,317	+654,766
Obligations	5,499,515	6,126,035	6,127,416	+1,381
Outlays	4,800,436	4,984,309	5,197,320	+213,011
Permanent workyears	10,178	11,015	11,237	+222
Full-time equivalency	12,107	13,587	13,830	+243

1980 Resources
By Media and Appropriation
(dollars in thousands)

	Salaries & Expenses		Abatement, Control & Compliance	Research & Development	Total	
	Permanent Workyears	Amount	Amount	Amount	Permanent Workyears	Amount
Air	1,973	$ 77,186	$133,775	$39,529	1,973	$250,490
Water Quality	3,088	109,860	188,436	39,139	3,088	337,435
Drinking Water	519	19,939	41,164	15,621	519	76,724
Solid Wastes	404	15,456	71,859	12,745	404	100,060
Pesticides	985	33,722	28,513	5,922	985	68,157
Radiation	215	8,936	7,486	840	215	17,262
Noise	105	4,924	8,151	...	105	13,075
Interdisciplinary	260	13,957	1,372	11,012	260	26,341
Toxic Substances	659	29,554	45,201	19,891	659	94,646
Energy	154	11,489	...	89,875	154	101,364
Management and Support	2,578	196,490	...	...	2,578	196,490
Subtotal	10,940	521,513	525,957	234,574	10,940	1,282,044
Regulatory Council	...	...	...	...	11	3,082
Buildings and Facilities	...	...	...	...	...	1,425
Scientific Activities Overseas	...	...	...	...	...	...
Reimbursements	...	...	...	...	64	...
Subtotal	...	521,513	525,957	234,574	11,015	1,286,551
Construction Grants	...	...	...	...	...	3,400,000
Total	10,940	521,513	525,957	234,574	11,015	4,686,551

1981 Resources
By Media and Appropriation
(dollars in thousands)

	Salaries & Expenses		Abatement, Control & Compliance	Research & Development	Total	
	Permanent Workyears	Amount	Amount	Amount	Permanent Workyears	Amount
Air	1,888	$ 75,816	$128,545	$ 44,109	1,888	$ 248,470
Water Quality	3,032	112,194	186,932	35,961	3,032	335,087
Drinking Water	538	22,012	44,664	20,229	538	86,905
Solid Waste	774	32,895	91,991	22,562	774	147,448
Pesticides	914	30,927	39,292	3,780	914	73,999
Radiation	216	8,552	7,797	1,433	216	17,782
Noise	99	4,576	8,351	...	99	12,927
Interdisciplinary	250	11,874	1,550	13,816	250	27,240
Toxic Substances	743	33,571	46,216	26,216	743	106,003
Energy	149	10,720	...	96,878	149	107,598
Management and Support	2,559	219,405	...	...	2,559	219,405
Subtotal	11,162	562,542	555,338	264,984	11,162	1,382,864
Regulatory Council	...	...	...	...	11	3,338
Buildings and Facilities	...	...	...	...	...	4,115
Scientific Activities Overseas	...	...	...	...	...	1,000
Reimbursements	...	...	...	...	64	...
Oil and Hazardous Liability Funds	...	...	...	...	...	250,000
Subtotal	11,162	562,542	555,338	264,984	11,237	1,641,317
Construction Grants	...	...	...	...	...	3,700,000
Total	11,162	562,542	555,338	264,984	11,237	5,341,317

Environmental Protection Agency

Total Funds Obligated, 1980
(dollars in thousands)

	1980				
	Budget Authority	Unobligated Balance Brought Forward	Anticipated Recoveries	Unobligated Balance Brought Forward	Total Obligations
Research and Development	$234,574	+$8,176	+1,000	-$9,007	$234,743
Air	39,529	+2,380	...	-1,914	39,995
Water Quality	39,139	+618	+1,000	-135	40,622
Drinking Water	15,621	+572	...	-804	15,389
Solid Waste	12,744	+419	...	-2,892	10,271
Pesticides	5,922	+245	...	-355	5,812
Radiation	840	+82	...	-244	678
Interdisciplinary	11,012	+327	...	-39	11,300
Toxic Substances	19,892	+954	...	-576	20,270
Energy	89,875	+2,107	...	-2,048	89,934
Management and Support	...	+472	...	...	472
Abatement, Control and Compliance	525,957	+81,747	+2,000	-50,024	559,680
Air	133,775	+40,867	...	-1,728	172,914
Water Quality	188,436	+8,647	+2,000	-23,715	175,368
Drinking Water	41,164	+6,540	...	-3,978	43,726
Solid Waste	71,859	+11,445	...	-5,149	78,155
Pesticides	28,513	+4,087	...	-4,879	27,721
Radiation	7,486	+817	...	-137	8,166
Noise	8,151	+818	...	-610	8,359
Interdisciplinary	1,372	+816	...	-844	1,344
Toxic Substances	45,201	+7,357	...	-8,984	43,574
Management and Support	...	+353	...	...	353
Salaries and Expenses	521,513	...	...	...	521,513
Air	77,186	...	...	...	77,186
Water Quality	109,860	...	...	...	109,860
Drinking Water	19,939	...	...	...	19,939
Solid Waste	15,456	...	...	...	15,456
Pesticides	33,722	...	...	...	33,722
Radiation	8,936	...	...	...	8,936
Noise	4,924	...	...	...	4,924
Interdisciplinary	13,957	...	...	...	13,957
Toxic Substances	29,554	...	...	...	29,554
Energy	11,489	...	...	...	11,489
Management and Support	196,490	...	...	...	196,490

	1980				
	Budget Authority	Unobligated Balance Brought Forward	Anticipated Recoveries	Unobligated Balance Brought Forward	Total Obligations
Regulatory Council	3,082	...	...	...	3,082
Buildings and Facilities	1,425	+369	...	...	1,794
Scientific Activities Overseas	...	+3,204	+200	-200	3,204
Construction Grants	3,400,000	+3,992,607	+300,000	-2,892,607	4,800,000
Operations, Research and Facilities	...	+914	+800	-300	1,414
Total	4,686,551	+4,087,017	+304,000	-2,952,138	6,125,430

Environmental Protection Agency

Total Funds Obligated, 1981
(in thousands of dollars)

	1981				
	Budget Authority	Unobligated Balance Brought Forward	Anticipated Recoveries	Unobligated Balance Carried Forward	Total Obligations
Research and Development	$264,984	+$9,007	+1,000	-$11,991	$263,000
Air	44,109	+1,914	...	-2,390	43,633
Water Quality	35,961	+135	+1,000	-896	36,200
Drinking Water	20,229	+804	...	-467	20,566
Solid Waste	22,562	+2,892	...	-2,918	22,536
Pesticides	3,780	+355	...	-533	3,602
Radiation	1,433	+244	...	-172	1,505
Interdisciplinary	13,816	+39	...	-33	13,822
Toxic Substances	26,216	+576	...	-1,204	25,588
Energy	96,878	+2,048	...	-3,378	95,548
Abatement, Control and Compliance	555,338	+50,024	+2,000	-64,431	542,931
Air	128,545	+1,728	+2,000	-3,252	129,021
Water Quality	186,932	+23,715	...	-30,958	179,689
Drinking Water	44,664	+3,978	...	-5,390	43,252
Solid Waste	91,991	+5,149	...	-7,571	89,569
Pesticides	39,292	+4,879	...	-5,544	38,627
Radiation	7,797	+137	...	-429	7,505
Noise	8,351	+610	...	-770	8,191
Interdisciplinary	1,550	+844	...	-849	1,545
Toxic Substances	46,216	+8,984	...	-9,668	45,532
Salaries and Expenses	562,542	...	...	...	562,542
Air	75,816	...	...	...	75,816
Water Quality	112,195	...	...	...	112,195
Drinking Water	22,012	...	...	...	22,012
Solid Waste	32,895	...	...	...	32,895
Pesticides	30,927	...	...	...	30,927
Radiation	8,552	...	...	...	8,552
Noise	4,576	...	...	...	4,576
Interdisciplinary	11,874	...	...	...	11,874
Toxic Substances	33,571	...	...	...	33,571
Energy	10,720	...	...	...	10,720
Management and Support	219,404	...	...	...	219,404

	1981				
	Budget Authority	Unobligated Balance Brought Forward	Anticipated Recoveries	Unobligated Balance Carried Forward	Total Obligations
Regulatory Council	3,338	...	...	...	3,338
Buildings and Facilities	4,115	...	...	-1,115	3,000
Scientific Activities Overseas	1,000	+200	+200	-200	1,200
Construction Grants	3,700,000	+2,892,607	+300,000	-2,392,607	4,500,000
Operations, Research and Facilities	...	+300	+500	...	800
Oil and Hazardous Liability Fund	250,000	...	...	...	250,000
Total.....	5,341,317	2,952,138	+303,700	-2,470,344	6,126,811

EPA

Positions By Grade and Average Employment

Grades	Actual 1979	Estimate 1980	Estimate 1981
Executive Level II	1	1	1
Executive Level III	1	1	1
Executive Level IV	6	7	7
Subtotal	8	9	9
ES-4	185	185	185
ES-3	27	27	27
ES-2	39	39	39
ES-1	41	41	41
Subtotal	292	292	292
GS-18	1	1	1
GS-17	4	3	3
GS-16	14	14	14
GS/GM-15	477	492	502
GS/GM-14	963	993	1,020
GS/GM-13	1,532	1,582	1,620
GS-12	1,716	1,771	1,810
GS-11	1,094	1,128	1,151
GS-10	47	47	47
GS-9	889	917	936
GS-8	190	196	200
GS-7	801	825	842
GS-6	583	601	614
GS-5	849	873	890
GS-4	545	563	576
GS-3	148	152	154
GS-2	22	22	22
GS-1	2	2	2
Subtotal	9,877	10,182	10,404

Grades	Actual 1979	Estimate 1980	Estimate 1981
Positions established by act of July 1, 1974 (42 U.S.C. 207):			
Assistant Surgeon General, $25,022 to $36,468	1	1	1
Director Grade, $19,547 to $32,040	93	93	93
Senior grade, $14,836 to $26,143	147	147	147
Full grade, $12,506 to $21,863	42	42	42
Senior assistant grade, $11,621 to $18,904	17	17	17
Assistant grade, $10,130 to $14,026	2	2	2
Subtotal	302	302	302
Positions established by act of November 16, 1977 (42 U.S.C. 201) compensation for which is not to exceed the maximum rate payable for a GS-18	30	30	30
Ungraded	189	189	189
Total permanent positions	10,698	11,004	11,226
Full-Time Equivalency:			
Permanent	10,178	11,015	11,237
Other	1,929	2,572	2,593
Total	12,107	13,587	13,830

60-531 O - 80 - 63

Regulatory Council

	Actual 1979	Estimate 1980	Estimate 1981
GS-17	...	1	1
GS/GM-15	...	2	2
GS/GM-14	...	2	2
GS-12	...	1	1
GS-11	...	1	1
GS-9	...	1	1
GS-8	...	1	1
GS-6	...	1	1
GS-5	...	1	1
Total permanent positions	...	11	11

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

	Actual 1979	Current Estimate 1980	Estimate 1981
Personnel Services	a/	...	...
Other Objects:			
21 Travel and transportation of persons	a/	...	...
22 Transportation of things	a/	...	...
23.1 Standard level user charges	a/	...	...
23.2 Communications, utilities, and other rent	a/	...	...
24 Printing and reproduction	a/	...	...
25 Other services	168,957	142,916	177,627
26 Supplies and materials	a/	...	...
31 Equipment	a/	...	...
32 Lands and structures	a/	...	...
41 Grants, subsidies, and contributions	71,441	80,979	80,873
42 Insurance claims and indemnities	a/	...	...
Total other objects	240,398	223,895	258,500
Total obligations	240,398	223,895	258,500

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1980	Increase + Decrease - 1981 vs. 1980
Other services	$168,957	$181,450	$142,916	$177,627	+$34,711

The decrease in the 1980 current estimate for this item results from:

Other contractural services now carried under Salaries and Expenses	- 15,174
Congressional reduction for health and ecological effects	- 9,000
Congressional add-ons for R&D activities	+ 5,000
Congressional reduction for anticipatory research	- 2,000
Transfer to support other Agency activities' pay costs	- 3,784
Transfer to other R&D activities for object classes now supported under Salaries and Expenses	- 2,925
Prorated costs now reflected under Salaries and Expenses	- 10,651
Total	- 38,534

The increase of $34,711 over the 1980 budget estimate will expand contracted research primarily for hazardous waste, toxic substances , and energy related activities.

a/ Reflected under "Salaries and Expenses" for comparability.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Grants, subsidies, and contributions.....	$71,441	$90,000	$80,979	$80,873	-$106

The decrease in the 1980 current estimate from the 1980 budget estimate results from a change in the amount of carryover funds originally projected to be carried forward to 1980.

The slight decrease in 1981 of $106 reflects a minor shift from grant activities to contractual services.

ABATEMENT, CONTROL AND COMPLIANCE

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

		Actual 1979	Current Estimate 1980	Estimate 1981
Personnel Services		$30 a/	$34	$78
Other Objects:				
21	Travel and transportation of persons	a/	10	10
22	Transportation of things	a/	...	...
23.1	Standard level user charges	a/	...	...
23.2	Communications, utilities, and other rent	a/	...	...
24	Printing and reproduction	a/	...	...
25	Other services	182,699	235,108	244,200
25	Supplies and materials	a/	...	...
31	Equipment	a/	...	...
32	Lands and structures	a/	...	...
41	Grants, subsidies, and contributions	352,915	280,524	298,643
42	Insurance claims and indemnities	a/	...	...
	Total other objects	535,614	515,642	542,853
	Total obligations	535,644	515,676	542,931
Position Data:				
	Average salary, GS positions	$22,878	$23,041	$23,205
	Average grade, GS positions	10.07	9.85	9.85

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Personnel services	$30	a/	$34	$78	+$44

The change in 1980 estimates reflects the transfer of all salary costs except those for State assignees to the new Salaries and Expenses appropriation.

The increase in 1981 represents increased support to the States.

a/ Reflected under "Salaries and Expenses" for comparability.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Travel and transportation of persons	a/	$10	$10	$10	...

All travel costs are now reflected under the "Salaries and Expenses" appropriation with the exception of travel associated with State assignees, funded by the grants programs.

a/ Reflected under "Salaries and Expenses" for comparability.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Other services	$182,699	$267,140	$235,108	$244,200	+$9,092

The decrease in the 1980 current estimate for this object class results from:

Other contractual services now carried under Salaries and Expenses	-$5,427
Transfer to support pay costs in other activities	-4,167
Shift of funds from contractual services to grants	-16,219
Prorated costs now reflected under Salaries and Expenses	-6,219
Total	-32,032

The net increase in 1981 of $9,092 results primarily from pesticides standards setting and RPAR as well as hazardous waste activities.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Grants, subsidies, and contributions	$343,636	$289,955	$280,524	$298,643	+$18,119

The decrease in the 1980 current estimate over the 1980 budget estimate results from:

Congressional decreases to the budget authority for this object class	-34,400
Shift of funds from contractual services	+16,219
Transfer of enforcement grants into this appropriation	+8,750
Total	-9,431

The net increase in the 1981 request results primarily from hazardous waste grants and air control agency grants.

SALARIES AND EXPENSES

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

		Actual 1979	Current Estimate 1980	Estimate 1981
Personnel Services		$290,189	$332,649	$357,056
Other Objects:				
21	Travel and transportation of persons	15,711	16,119	17,714
22	Transportation of things	1,674	1,523	1,655
23.1	Standard level user charges	20,302	20,391	21,480
23.2	Communications, utilities, and other rent	22,965	28,833	32,606
24	Printing and reproduction	8,263	9,517	8,284
25	Other services	42,731	78,468	91,260
26	Supplies and materials	11,401	15,054	14,637
31	Equipment	24,774	16,937	16,628
32	Lands and structures	1,103	874	55
41	Grants, subsidies, and contributions	501	1,148	1,167
42	Insurance claims and indemnities	74	...	...
	Total other objects	149,499	188,864	205,486
	Total obligations	439,688	521,513	562,542
Position Data:				
	Average salary, GS positions	$ 22,878	$ 23,041	$ 23,205
	Average grade, GS positions	10.07	9.85	9.85

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Personnel services	$290,189	$319,101	$332,649	$357,056	+$24,407

The increase in the 1980 current estimate over the 1980 budget estimate is the result of:

October 1979 pay raise, pending supplemental to partially fund	+$14,209
Congressional reduction	-2,000
Amendment for hazardous waste sites	+1,339
Total	+ 13,548

The increase in the 1981 estimate is the result of:

October 1979 pay raise, full year cost	+ 8,291
Full workyear funding	+ 6,499
Increase in authorized workyears	+ 9,617
Total	+24,407

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Travel and transportation of persons	$15,711	$17,710	$16,119	$17,714	+$1,595

The decrease in the 1980 current estimate over the 1980 budget estimate is the result of:

Congressional reduction	$-2,000
Amendment for hazardous waste sites	+409
Total	-1,591

The increase in the 1981 estimate is the result of:

Additional workyears requested	+243
Increased travel costs	+200
Increased hazardous waste activities requiring travel	+1152
Total	+1595

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Transportation of things	$1,674	$2,000	$1,523	$1,655	+$132

The decrease in the 1980 estimate results from an adjustment to the budget estimate using 1979 actual costs as a new base.

The slight increase in 1981 results from anticipated costs of shipping of materials.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Standard level user charges	$20,302	$23,563	$20,391	$21,480	+$1,089

The decrease of $3,172 in the 1980 current estimate from the 1980 budget estimate results from the revised projections of SLUC based on actual facilities usage by personnel in 1979.

The increase of $1,089 in the 1981 estimate results from the GSA-set increase.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Communications, utilities, and other rent	$22,965	$28,100	$28,833	$32,606	+$3,773

The increase of $733 in the 1980 current estimate over the 1980 budget estimate for this item results primarily from increasing utility costs due to increasing energy costs.

The increase in the 1981 request provides for increasing rental costs of equipment, telephones, mail, and the continuing increase of utility costs.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Printing and reproduction	$8,263	$8,550	$9,517	$8,284	-$1,233

The increase of $967 over the 1980 budget estimate represents an unanticipated increase in printing costs and the additional printing of guidelines and regulations.

The decrease of $1,233 in the 1981 request represents the nonrecurring workload anticipated in 1980.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Other services	$42,731	$37,272	$78,468	$91,260	+$12,792

The increase of $41,196 over the 1930 budget estimate results from:

Costs previously carried under the Abatement and Control and the Research and Development appropriations	+20,601
Cost previously prorated for nationwide services that are now reflected only in this appropriation	+16,870
Increase reflecting only change in anticipated costs of other contractual services	+ 3,725
Total	+41,196

The increase requested in 1981 will primarily provide for increased workyears and for planning and evaluation contracts.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Supplies and materials	$11,401	$12,400	$15,054	$14,637	-$417

The increase of $2,654 in the 1980 current estimate from the 1980 budget estimate results from additional expenses anticipated for standards setting, hazardous waste, and toxic substance activities.

The decrease in the 1981 request reflects nonrecurring costs which are anticipated in 1980.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Equipment	$24,774	$20,500	$16,937	$16,628	-$309

The decrease of $3,563 from the 1980 budget estimate reflects nonrecurring equipment costs which are diverted to other Agency funding.

The decrease of $309 in the 1981 budget request reflects the continuing action of redirecting nonrecurring costs to other priority costs.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Lands and structures	$1,103	...	$874	$55	-$819

The increase of $874 in the 1980 current estimate reflects the modifications, etc., to facilities that are properly funded from this appropriation.

The decrease in the 1981 request reflects the nonrecurring nature of the 1980 costs.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Grants, subsidies, and contributions	$501	$350	$1,148	$1,167	+$19

The increase of $798 in the 1980 current estimate reflects increased grant support to public interest groups.

The minor increase in the 1981 request reflects continuing support of these grants.

BUILDING AND FACILITIES

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

	Actual 1979	Current Estimate 1980	Estimate 1981
Other Objects:			
21 Travel and transportation of persons	$ 20	$ 35	$ 23
24 Printing and reproduction	...	...	25
25 Other Services	1,046	359	200
26 Supplies and materials	...	...	25
31 Equipment	15	10	20
32 Lands and structures	799	1,390	2,707
Total obligations	1,880	1,794	3,000

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Travel and transportation of persons	$20	$35	$35	$23	-$12

There is no change from the 1980 budget estimate for this item.

The decrease in the 1981 request reflects an anticipated reduction to the amount of travel required to monitor projects.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Printing and reproduction	...	$ 5	...	$25	+$25

The decrease of $5 in the 1980 current estimate from the 1980 budget estimate for this item results from an adjustment based on actual costs.

The increase in the 1981 request reflects costs anticipated in connection with the Gulf Breeze facility.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Other services	$1,046	$660	$359	$200	-$159

The decrease in the 1980 current estimate from the 1980 budget estimate for this item results from a transfer to support other Buildings and Facilities costs.

The decrease in the 1981 request reflects nonrecurring items which are diverted to other Buildings and Facilities costs.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Supplies and materials	...	$10	...	$25	+$25

The decrease of $10 in the 1980 current estimate results from an adjustment based on 1979 actual costs.

The increase in the 1981 request reflects the increased costs associated with the additional R&I projects.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Equipment	$15	$100	$10	$20	+$10

The decrease of $90 in the 1980 current estimate results from an adjustment based on 1979 actual costs.

The increase in the 1981 request reflects the increased costs associated with additional projects.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Lands and structures	$799	$615	$1,390	$2,707	+$1,317

The increase of $775 in the 1980 current estimate results from adjustments of other object classes as well as an unanticipated carryover from prior years.

The increase of $1,317 in the 1981 request reflects the increased funding in this appropriation for R&I projects.

SCIENTIFIC ACTIVITIES OVERSEAS

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

	Actual 1979	Current Estimate 1980	Estimate 1981
Other objects:			
21 Travel and transportation of persons	11	15	15
25 Other services	2,708	3,189	1,185
Total, other objects	2,719	3,204	1,200
Total, Obligations	2,719	3,204	1,200

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Travel and transportation of persons	$11	$25	$15	$15	...

The decrease of $10 in the 1980 current estimate reflects the decrease in funding for this activity. No funds were appropriated for 1980; carryover funding only is available.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Other Services	$2,708	$3,975	$3,189	$1,185	-$2,004

The decrease of $786 in the 1980 current estimate reflects the congressional decrease.

The decrease of $2,004 in the 1981 request reflects the reduced obligations as a result of all carryover funds being obligated in 1980.

REGULATORY COUNCIL

Classification by Objects
Includes Direct Obligations Only
(in thousands of dollars)

		Actual 1979	Estimate 1980	Estimate 1981
Personnel Services		...	$939	$939
Other Objects:				
21	Travel and transportion of persons	...	20	38
23.2	Communications, utilities, and other rent	...	74	190
24	Printing and reproduction	...	424	651
25	Other services	...	1,580	1,450
26	Supplies and materials	...	6	23
31	Equipment	...	39	47
	Total other objects	...	2,143	2,399
	Total obligations	...	3,082	3,338

EXPLANATION OF INCREASES AND DECREASES TO OBJECT CLASSIFICATIONS

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Personnel services	...	$423	$939	$939	...

The increase in the 1980 current estimate reflects funding required to support authorized workyears in 1980.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Travel and transportation of persons	...	$20	$20	$38	+$18

The increase of $18 in the 1981 request reflects the funds required to support anticipated travel costs of the Council.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Rent, communications, and utilities	...	$35	$74	$190	+$116

The increase of $39 in the 1980 current estimate reflects a shift of funds from other services to support increasing costs.

The increase in the 1981 request reflects the anticipated increasing costs of rentals and communications.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Printing and reproduction	...	$17	$424	$651	+$227

The increase of $407 in the current estimate reflects a shift of funds from other services to support anticipated costs of the Council's printing needs.

The increase in the 1981 request reflects the anticipated increasing costs of printing.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Other services	...	$2,728	$1,580	$1,450	-$130

The decrease of $1,148 in the 1980 current estimate reflects the congressional reduction of $200 as well as a shift of funds to other object classes to support required costs.

The decrease in the 1981 request reflects the effort to continue to support other object classes with nonrecurring funding.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Supplies and materials	...	$12	$6	$23	+$17

The decrease of $6 in the 1980 current estimate reflects a change in the estimate of needs during the first year of operation.

The increase in the 1981 request reflects the increase anticipated to support the staff requirements in a second year.

	Actual 1979	Budget Estimate 1980	Current Estimate 1980	Estimate 1981	Increase + Decrease - 1981 vs. 1980
Equipment	...	$12	$39	$47	+$8

The increase of $27 over the 1980 budget estimate reflects a change in the estimate of needs with funds transferred from other services.

The increase of $8 in the 1981 request represents a slight increase for continuing support of the Council.

FRIDAY, MARCH 21, 1980.

COUNCIL ON ENVIRONMENTAL QUALITY

WITNESSES

GUS SPETH, CHAIRMAN
JANE H. YARN, MEMBER
ROBERT H. HARRIS, MEMBER
EDWARD L. STROHBEHN, EXECUTIVE DIRECTOR
NICHOLAS C. YOST, GENERAL COUNSEL
THOMAS J. DELANEY, ADMINISTRATIVE OFFICER

	1979 actual	1980 estimate	1981 request	Difference
Appropriation	$3,026,000	$3,126,000	$3,436,000	+$310,000
Permanent positions	32	32	32	
Average employment	49	49	49	

Mr. SABO. The Committee will come to order. I wish to welcome the witnesses.

Chairman Gus Speth has appeared before the Subcommittee in past years as a Council member, but this is his first appearance as Chairman. Jane Yarn has been a Council member for nearly two years, but today is her first appearance before the Subcommittee. The other member, Robert Harris, joined the Council in 1979. Formerly he was a scientist with the Environmental Defense Fund. We will place the biographical sketches of Mrs. Yarn and Mr. Harris in the record at this point.

[The biographical sketches follows:]

JANE HURT YARN

Jane Hurt Yarn is a Member of the White House Council on Environmental Quality. As one of three Presidentially-appointed Members who sit on the Council, which was created by the National Environmental policy Act of 1969, she advises the President on matters affecting the environment. Among its many responsibilities, the Council oversees the implementation of the National Environmental Policy Act, assists the President in preparing environmental messages to Congress, prepares a comprehensive annual report on the environment, and conducts studies on matters relating to environmental protection.

Yarn joined the Council in July 1978. Her principal interests at CEQ include public lands and natural resources management, preservation of natural areas, soil and water conservation, mining reform, wildlife protection and management, rural and urban land use, and oceans and international environmental affairs. She has been a member of the interagency groups which developed the Administration's policies on Alaska lands, water resources, and endangered species legislation. Yarn currently chairs the Integrated Pest Management Coordinating Committee, composed of twelve federal agencies.

Prior to her appointment to CEQ, Yarn chaired Conservationists for Carter from 1975–76. She chaired the Charles A. Lindbergh Fund, which awards grants in the fields of aeronautics, wildlife, exploration, natural sciences and the environ. Yarn previously served as Vice Chairman of the Nature Conservancy and as Founder and President of SAVE (Save America's Vital Environment), a Georgia environmental organization whose purpose is to promote wise stewardship of natural resources. She is well known for her work to preserve coastal areas and especially Barrier Islands.

Since 1952, Yarn has owned and managed a farm, for which she created a long-range plan for rebuilding and improving the physical plant, soil, and living condi-

60-531 O - 80 - 64

tions for farm families. She was instrumental in forming the Bartram Trail Conference under the National Trails Act.

ROBERT H. HARRIS

Robert Harris is a Member of the President's Council on Environmental Quality. In this capacity, he assists the Chairman and the other Members prepare advice and policy alternatives for the President on matters affecting the environment. Among its many responsibilities, the Council oversees the implementation of the National Environmental Policy Act, assists the President in preparing Environmental Messages to Congress, prepares a comprehensive Annual Report on the environment, and conducts studies on matters relating to environmental protection.

Dr. Harris was appointed in November, 1979 by the President to serve on the Council. His major areas of responsibility are environmental health and toxic chemcials, economics and pollution control, and environmental data and monitoring.

Before his appointment to CEQ, Dr. Harris was the Associate Director of the Toxic Chemicals Program for the Environmental Defense Fund. He was responsible for EDF's work on toxic chemicals in water, consumer products, and in the workplace. In 1975, his articles on the safety of drinking water published in 1974 by Consumer Reports won both the George Polk Memorial Award for Outstanding Magazine Reporting and the American Society of Magazine Editors' National Magazine Award.

While with the Environmental Defense Fund, he served on committees of the National Academy of Sciences/National Research Council, the National Science Foundation, the National Institutes of Environmental Health Sciences, and the Office of Technology Assessment. He also served as vice president of the Board of Directors of Consumers Union of the United States.

In 1978, Dr. Harris joined the faculty at the University of California—Berkeley to conduct research with Professor Bruce Ames on the risks posed to humans from their exposure to chemicals which cause cancer in laboratory animals. He has recently co-authored a book on this subject, "Malignant Neglect," which has recently been published by Alfred Knopf.

He was born in Fairmont, West Virginia, on October 16, 1941.

Mr. SABO. The 1981 request for the Council on Environmental Quality and Office of Environmental Quality is $3,436,000, an increase of $310,000, or 10 percent, above 1980. The number of permanent positions, 32, and the total compensable workyears, 49, reflect no change in 1981.

You may proceed with your statement, Chairman Speth.

GENERAL STATEMENT

Mr. SPETH. Thank you, Mr. Chairman.

Mr. Chairman and Members of the Committee. I am pleased to appear before you today to discuss the President's budget request for $3,436,000 to support the activities of the Council and Office of Environmental Quality for fiscal year 1981.

I have with me today the other two Council members, Jane H. Yarn and Robert H. Harris, the Executive Director, Edward L. Strohbehn, the General Counsel, Nicholas C. Yost, and the Administrative Officer, Thomas J. Delaney. They will join me in responding to your questions.

The Council was established by the National Environmental Policy Act (NEPA) and the Environmental Quality Improvement Act of 1970. The Council's principal responsibility is to provide the President with advice and assistance in order to achieve the environmental goals mandated by NEPA. More particularly, the Council is directed, "To develop and recommend to the President national policies to foster and promote the improvement of environmen-

tal quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation."

The Council's objectives and planned activities for meeting its responsibilities are set out in detail in the justification statement which was submitted to you on January 31, 1980.

In my testimony this morning I will keep my remarks brief so that I can make myself and others here with me available for your questions. I will summarize key elements of the President's fiscal year 1981 budget request for the Council and highlight a few of the Council's major activities of the past year. I ask that my longer prepared statement be submitted for the record.

Mr. SABO. Fine.

Mr. SPETH. The President's fiscal year 1981 appropriations request of $3,436,000 will provide the Council with the funds necessary to carry out its responsibilities. By achieving program improvements and exercising careful management, the Council expects to cover all nondiscretionary expenses imposed by other government agencies and the private market that the Council will have to meet in fiscal year 1981 in order to maintain our current level of operations. The nondiscretionary increases which are budgeted comprise the following:

PERSONNEL COSTS

The budget estimate reflects an increase of $208,000 to provide for Federal cost-of-living pay increase, step increases, and other personnel costs. Regarding personnel costs, the Council has not submitted requests for supplemental appropriations to cover cost-of-living pay increases, which come in October after our funds have been appropriated by the Congress. Thus, the cost-of-living pay increase estimate in the budget covers essentially the fiscal year 1980, not the fiscal year 1981 increase. This underscores the lean, frugal nature of our fiscal year 1981 budget estimate.

ADMINISTRATIVE COSTS

The budget estimate reflects an increase of $80,000 to cover increases imposed by other Federal agencies and the price increases that will likely occur on private-sector products. More specifically, the budget estimate reflects the following:

GSA rent—$39,000 increase; U.S. Post Office—$15,000 increase; GPO printing—$20,000 increase; and Supplies and materials—$6,000 increase.

The budget estimate provides for only about a 2.2-percent increase for the cost of private-sector products.

For fiscal year 1981 travel, the Council has reduced its estimate by $2,000 below the fiscal year 1980 estimate of $74,000, so that our fiscal year 1981 budget estimate for travel is $72,000.

The Council's fiscal year 1981 budget estimate for studies ("Other Services") reflects a $24,000 or a very modest five-percent increase over fiscal year 1980 funds for studies. Moreover, our fiscal year 1981 budget estimate of $470,000 for Other Services is well below the higher levels of previous years: 1975—$643,000; 1976—$925,000 (includes transition quarter); 1977—$761,000; and 1978—$635,000.

In sum, the President's appropriations request for the Council represents a lean, tight budget that encourages efforts to operate more efficiently and with careful management. We believe that our record of the last three years—which is attached to the prepared statement that I submitted to the Committee—and the detailed information in our justification statement supports the President's request for $3,436,000 for the Council. I hope that the Committee will approve the request.

We have just learned that as part of the President's anti-inflation program, we will be required to reduce our operating expenses by an amount of two percent of the personnel expenses now listed in the administration's fiscal year 1981 budget, thus making it even leaner. That, I am informed, comes out to be a reduction of about $38,000. I hope the committee can approve this lean (and hungry) budget.

HIGHLIGHTS OF PAST YEAR

I want to review briefly with you some of the highlights of this past year's activities.

The Council developed and prepared the President's August 2, 1979, Environmental Message, which set out the President's environmental program. To implement the message, the President issued a score of directives that focused on twelve separate initiatives covering land and resource management, agricultural conservation, urban quality, and the global environment.

We also played the major role in the President's solar energy message which he sent to the Congress on June 20 of last year. I would say that generally speaking, we probably were about half responsible for that, with the Department of Energy having the other share of responsibility. In terms of the things I worked on personally at the Council over the past three years I take as much pride in having developed the solar message as anything else that I have been involved in.

We were also very instrumental along with the Department of Energy and the President's science adviser in initiating the interagency effort on radioactive waste management which culminated in the President's message to you a few weeks ago setting forth his broad, comprehensive program for safe management of radioactive waste.

We have been pursuing intensively with the Department of Agriculture, co-chairing it with them, a major effort in examining the question of the future availability of U.S. farmlands. We are probably losing about 3 million acres a year of farmland in the United States as it is being converted to other uses. Unfortunately the Federal government has a role in stimulating that loss. We are probably losing an additional 3 million acres a year in productive capacity through the loss of soil productivity. So the equivalent of perhaps 6 million acres of farmland a year is being lost. A lot of that is prime farmland, and the lands that will be brought in to replace that are not nearly as good. I do not think we can continue that trend out into the distant future without suffering diminution of our agricultural capacity.

There has also been the question of integrated pest management, a technique of supplementing the use of chemical pesticides with

natural controls such as the more resistant species and antipest pests. This is beginning to catch on in many agriculture regions in the country and will, I think, put us in a better position to maintain our agricultural productivity over the long run.

We have for you copies of some of the reports we have put out in these areas over the last few months. One is a compilation of environmental statistics that we developed. It is the first document of this type ever put out by the Federal government and has all the data that the Federal government maintains on environmental quality and indicators and reflects, not only the strength of our data gathering system, but our weaknesses. That has been used a lot, and we aim to put it out on a recurring basis as new data become available.

This publication has proven to be very valuable to people on wetlands (indicating). It was done in an attractive way so people would spend some time with it. It has proven to be an investment well made.

This is a document on integrated pest management which has not been publicly released but explains what it is all about.

These are only a few of the things we have been involved with. The justification statement contains a lot more.

That concludes my opening remarks and we will be happy to try to answer any questions you may have.

[The statement follows:]

STATEMENT OF GUS SPETH
CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY
BEFORE THE
SUBCOMMITTEE ON H.U.D. AND INDEPENDENT AGENCIES
OF THE
HOUSE COMMITTEE ON APPROPRIATIONS

MARCH 18, 1980

Mr. Chairman and Members of the Committee,

I am pleased to appear before you today to discuss the President's budget request for $3,436,000 to support the activities of the Council and Office of Environmental Quality for Fiscal Year 1981.

I have with me today the other two Council Members, Jane H. Yarn and Robert H. Harris, the Executive Director, Edward L. Strohbehn, the General Counsel, Nicholas C. Yost, and the Administrative Officer, Thomas J. Delaney. They will join me in responding to your questions.

The Council was established by the National Environmental Policy Act (NEPA) and the Environmental Quality Improvement Act of 1970. The Council's principal responsibility is to provide the President with advice and assistance in order to achieve the environmental goals mandated by NEPA. More particularly, the Council is directed

> "to develop and recommend to the President national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation."

The Council's objectives and planned activities for meeting its responsibilities are set out in detail in the Justification

Statement which was submitted to you on January 31, 1980.

In my testimony this morning I will first summarize key elements of the President's FY 1981 budget request for the Council. Then I will highlight major Council activities of the past year, describe the Council's work to improve its ability to assess the quality of our environment, and summarize our principal conclusions about the state of the environment. I will also provide a brief overview of government-wide benefits that are being realized from the Council's regulations which implement the procedural provisions of NEPA.

THE PRESIDENT'S APPROPRIATIONS REQUEST

The President's FY 1981 appropriations request for the Council and Office of Environmental Quality is $3,436,000. On January 31, 1980, we submitted a detailed justification statement for our FY 1981 budget estimate. A brief summary of major elements of the President's request follow.

The President's request provides the Council with the funds necessary to carry out its responsibilities. By achieving program improvements and exercising careful management, the Council expects to cover all nondiscretionary expenses imposed by other government agencies and the private market that the Council will have to meet in FY 1981 in order to maintain our current level of operations. The nondiscretionary increases

which are budgeted include:

- o Personnel -- an increase of $208,000 to provide for federal cost-of-living pay increase, step increases, and other personnel costs
- o Administrative -- an increase of $80,000 to cover increases imposed by other federal agencies and the price increases on private sector products, more specifically:

GSA rent	-- $39,000 increase
U. S. Post Office	-- $15,000 increase
GPO printing	-- $20,000 increase
Supplies and Materials	-- $ 6,000 increase

Regarding personnel costs, the Council has not submitted requests for supplemental appropriations to cover cost-of-living pay increases, which come in October after our funds have been appropriated by the Congress. Thus, the cost-of-living pay increase estimate in the budget covers essentially the FY 1980, not the FY 1981 increase. The budget estimate provides for only about a 2.2 percent increase for the cost of private sector products.

For FY 1981 travel, the Council has reduced its estimate by $2,000 below the FY 1980 estimate of $74,000, so that our FY 1981 budget estimate for travel is $72,000.

The Council's FY 1981 budget estimate for studies ("Other Services") seeks a $24,000 or a very modest 5 percent increase in funds for studies over FY 1980. Moreover, our FY 1981 budget estimate of $470,000 for Other Services is well below the higher levels of previous years:

1975	$643,000
1976	$925,000 (includes transition quarter)
1977	$761,000
1978	$635,000

In sum, the President's appropriations request for the Council represents a lean, tight budget that encourages efforts to operate more efficiently and with careful management. We believe that our record of the last three years -- which is attached to this statement -- and the detailed information in our Justification Statement supports the President's request for $3,436,000 for the Council. I hope that the Committee will approve the request.

ENVIRONMENTAL QUALITY

Attached to this statement is a document we prepared which sets out the Council's principal activities and accomplishments of the past three years. Among the more important activities of the past year are the following:

- o we developed and prepared the President's August 2, 1979 Environmental Message, which set out the President's environmental program; a document which contains the President's Message, each of his directives, and the White House detailed Fact Sheet is attached to the Justification Statement;
- o we played a major role in developing and preparing the President's June 1979 Message on Solar Energy;
- o we played a major role in preparing the 1979 Inter-agency Nuclear Waste Management report and the President's February 12, 1980 message setting out his nuclear waste management policy;
- o we helped to develop and with the Agriculture Department co-chair the National Agricultural Lands Study, which will assess the availability and the conversion of U. S. farm lands;
- o we chair the Integrated Pest Management Coordinating Committee, established in 1979, that is to assure adoption of IPM strategies in federal programs and to oversee development and use of IPM practices; just this month we published our IPM report which discusses the theory and practice of IPM.

- o we placed the UPGRADE environmental data analysis system on a commercial computer, thereby making the system much more broadly available while reducing our operating costs.

The Council has the responsibility "to document and define changes in the natural environment, including plant and animal systems, and to accumulate necessary data and other information for a continuing analysis of these changes or trends and an interpretation of their underlying causes." Over the past year the Council has achieved a major breakthrough in this area with the development of two books. Last year, we published Environmental Statistics -- 1978 -- a 250-page book containing about 200 environmental data tables, primarily in time series form, which provide an accurate record of important and recent trends in the environment. Among the major areas covered are air and water quality, critical natural areas, including wetlands and wilderness, hazardous substances, wildlife, and energy. The reception by senior government officials as well as by senior analysts, both inside and outside of government, has been very congratulatory. The Council will update and publish this book every two years. In our Tenth Annual Report, we published updated versions of about 40 selected tables from the book, a practice we will follow each year.

Finally, this year, we will publish Environmental Conditions and Trends, which will be a graphic and textual description of the state of the environment based on the statistical data we have compiled. If the book is as well received by government policy officials and analysts and the public as the environmental statistics book has been received, we intend to update and publish this book every two years.

These publications provide the Congress, the Administration, and the public with key information and analysis that will inform policymaking and educate the public.

One important conclusion that we reached this year in assessing the state of the environment involves the nation's water resources. Despite the impressive progress industry has made in eliminating much of the raw conventional waste that once was dumped into the nation's lakes and streams, the quality and quantity of the nation's water resources -- from drinking water to coastal fisheries and wetlands -- continue to be threatened by pollution and misuse. For example:

- o there is increased evidence of groundwater contamination because of human activities such as improper disposal of toxic industrial wastes
- o toxic chemical contaminants have rendered fish inedible in some lakes and rivers; persistent toxic chemicals are a particular problem in the Great Lakes
- o four million acres of commercial shellfish waters in the United States have been closed

- o acid rain has made many lakes, particularly in the northeastern United States, lethal to fish and other aquatic life
- o if present trends continue, there may not be enough water in some Western states to meet the needs of industrial, agricultural, and residential users.

Regarding air quality, CEQ's analysis of air pollution data found overall improvements in the nation's urban air quality between 1974 and 1977 -- the last year for which complete data are available. Combined data from 25 major metropolitan areas show that over this period the number of unhealthful days declined by 15 percent and the number of very unhealthful days declined by 32 percent. The pollutants that most frequently caused these "unhealthful" readings were carbon monoxide and photochemical oxidents (ozone).

CEQ estimates that the nation spent $26.9 billion in 1978 as a result of federal pollution control and environmental quality programs. Combined public and private spending amounted to about 1.3 percent of GNP in 1978. A study done for CEQ by Data Resources, Inc. (DRI) found that pollution control measures do not contribute much to inflation (about one to two-tenths of a percentage point per year to the rate of growth of the Consumer Price Index between 1979 and 1986) and reduce unemployment by an average of one-fourth of a percentage point a year. A study done for CEQ this year by Myrick Freeman, professor of

Economics at Bowdoin College, found that the most reasonable estimate of the annual benefits of air pollution control in 1978 was $21.4 billion, within a range of estimates of $5 billion to $57 billion. Similarly, he found the most reasonable estimate of benefits in 1985 resulting from implementing the Clean Water Act would be $12.3 billion, within a range of estimates of $6.5 billion to $26 billion a year.

In sum, environmental protection programs are among the most economically sound of all federal programs.

Data on the use -- and abuse -- of our land notes some of the important environmental challenges and opportunities that lie ahead:

- o losses of prime agricultural land to urban or other uses are estimated to be about 1 million acres per year;
- o over the last 45 years, of about 600 million acres of actual or potential cropland that existed, about 100 million acres have been effectively destroyed by wind and soil erosion, and this erosion has decreased by half the topsoil on another 100 million acres;
- o by 1971, about 3.6 million acres of land had been disturbed by mining of bituminous coal and all other noncoal commodities; about 1.4 million acres of

these lands have been reclaimed (reclamation does not mean, however, restoration to original use and coutours);

- o of an estimated 127 million acres of U.S. wetlands that once existed, only 87 million acres remained in 1954 and another 17 million acres were lost by 1971;
- o between 1950 and 1974 the nation's 300 fragile and ecologically important barrier islands, spits, and beaches were urbanized at twice the national rate;
- o sometime between 1960 and 1970, the U. S. became predominantly a suburban nation; non-metropolitan areas now grow faster than metropolitan areas; population is increasing most dramatically in the South and West.

NEPA REGULATIONS

Status of the NEPA Regulations and Agency Implementation

The Council's NEPA regulations were promulgated on November 29, 1978, and became effective on July 30, 1979. Promulgation of the regulations culminated 18 months of concentrated effort at the direction of President Carter "to make the environmental impact statement process more useful to decisionmakers and the public, ...to reduce paperwork....and to emphasize the need to focus on real environmental issues and alternatives." The regulations were developed with the help of members of the public,

and representatives from environmental groups, business, labor, and state and local governments from across the nation and received praise from a similarly broad range of interests. The National Chamber of Commerce sent a letter congratulating the Council on its "excellent work," and supportive letters were sent by the Edison Electric Institute and the National Governor's Association. Gerald R. Mylroie, former Co-Director of the Federal Paperwork Commission's report on environmental impact statements, wrote: "The regulations are more than responsive to all our fourteen recommendations which the (Federal Paperwork) Commission adopted. They foster real opportunities to improve decisionmaking and intergovernmental cooperation, to reduce paperwork and delays, and to save considerable money." Letters of support also come from the Natural Resources Defense Council and the National Wildlife Federation.

Even before the NEPA regulations took effect on July 30, 1979, a unanimous Supreme Court decision, in Andrus v. Sierra Club, 99 S.Ct. 2335 (June 11, 1979), relied on them in deciding the question of whether an Environmental Impact Statement was required on agency requests for appropriations. In ruling that EISs were not required for appropriations request, the Court agreed with the NEPA regulations on this issue, stating "CEQ's interpretation of NEPA is entitled to substantial deference." The Court broadly endorsed the new NEPA regulations and the process by which they were developed, noting the "detailed

and comprehensive process ordered by the President, of transforming advisory guidelines into mandatory regulations applicable to all federal agencies."

The NEPA regulations became effective on July 30, 1979, for most agencies and on November 30, 1979, for the balance. By July 30, 1979, all federal agencies were required to have adopted supplemental NEPA procedures tailoring the NEPA regulations to their programs and activities. Beginning in December 1979, the Council undertook an extensive effort to assist federal agencies in developing their supplemental procedures in a timely way. On January 19, 1979, the Council issued a detailed guidance memorandum to all federal agencies describing what the supplemental procedures must address and providing a recommended schedule, which included time for public review and comment, that would enable the agencies to meet the July 30, 1979, deadline. During the spring of 1979, Council staff met with agencies to answer questions and provide additional guidance on preparation of the supplemental procedures. Follow-up letters were sent to heads of agencies to emphasize the importance of issuing supplemental NEPA procedures by the July 30th deadline. Despite these efforts, most federal agencies did not meet the deadline. Council staff has continued to devote considerable time to overseeing development of agency supplemental procedures. The Council has published progress reports in the Federal Register

60-531 0 - 80 - 65

approximately every six weeks showing which agencies have issued proposed and final supplemental procedures, and which agencies are lagging behind. As of March 15, 1980, out of 88 federal agencies and component bureaus scheduled to publish supplemental NEPA procedures, 25 agencies have issued final procedures, 45 agencies have published proposed procedures, and 18 agencies still have not published. Two critical factors must be noted. First, the Council's regulations apply to an agency whether or not it has adopted implementing procedures. Thus, an agency's failure to adopt procedures does not delay the applicability of the NEPA regulations to the agency's actions. Second, by concentrating its efforts on the key agencies, the Council insured that those agencies which produce the bulk of the environmental documents were among the first to adopt implementing procedures. Council staff continues to devote substantial time to assisting and encouraging laggard agencies to complete their supplemental procedures.

During the past few months, the Council has reviewed agency performance on implementing important aspects of the regulations, particularly measures to streamline the process, reduce the length of EISs, and improve agency decisions. The Council's preliminary evaluation is summarized below.

Measures in the NEPA Regulations to Streamline the NEPA Process

As a result of the regulation's requirement that lead agencies

must seek the assistance of cooperating agencies, cooperating agencies are now seeking in many instances to be involved in the EIS process in the early stages. The result is greater communication among agencies early in the EIS process which should reduce delays that resulted previously when interested agencies became involved for the first time in reviewing a draft EIS.

Agency supplemental procedures are establishing procedures for consolidating various environmental reviews and integrating them with the NEPA process rather than conducting the review sequentually. Federal permitting agencies, such as EPA, Interior, NOAA, and the Forest Service, are developing means to interrelate various permit requirements so that permits are identified early, and permit processes are scheduled efficiently with the NEPA process. This progress will be enhanced by the Council's soon-to-be published List of Federal Agencies with Jurisdiction by Law and Special Expertise which indexes and cross-references federal agency permitting and approval requirements and agency environmental expertise by subject matter.

Agencies have indicated real interest in the regulations for avoiding duplication such as "tiering" (for example, using a program EIS followed by site specific EISs), "adoption" (for example, utilizing a part or all of the an EIS that has already been prepared), joint EISs (for example, to satisfy both NEPA and a comparable state EIS requirement), "combining documents" (for example, integrating the EIS with the proposed plan or rulemaking

documents), and incorporating documents by reference.

Measures in the NEPA Regulations to Reduce Length of EISs

Most of the EISs filed during the first six months following the effective date of the NEPA regulations were begun before July 30, 1979, and hence were not subject to the regulation's requirement that EISs normally not exceed 150 pages (or 300 pages for complex proposals). A preliminary review of EISs that have been filed over the past few months indicates that agencies are now regularly preparing EISs within these page limitations. If this trend continues, it will produce a very substantial reduction in the length of EISs.

Measures in the NEPA Regulations to Improve Decisions

Our preliminary review of recently filed EISs indicates that agencies are giving greater attention to alternatives.

Some agencies are beginning to use the scoping process to assist them in identifying important issues and in avoiding unnecessary analysis of minor matters. Because the scoping process is flexible and because agencies generally lack experience in using the process, agency scoping activities to date can best be characterized as tentative or experimental. Through these efforts, some progress is being made in earlier identification of important issues through the scoping process and in earlier documentation of the scope of a proposal before EIS drafting. To help agencies realize the important benefits of scoping, the Council has let a contract for a study to identify the best examples of agency scoping, to analyze problems encountered, and to recommend effective implementation techniques.

Highlights of Activities
Council on Environmental Quality
1977-1979

A. The President's Environmental Program

1. Developed and prepared the President's 1977 Environmental Program and May 23, 1977 Message on the Environment and Presidential directives to heads of agencies.

2. Developed and prepared the President's 1979 Environmental Program and August 2, 1979 Message on the Environment and Presidential directives to heads of agencies.

3. Developed, prepared and promulgated National Environmental Policy Act (NEPA) Regulations, November 28, 1978.

4. Developed and prepared six Executive Orders issued by the President:

Executive Order 12114 -- Environmental Effects Abroad of Major Federal Actions
Executive Order 11991 -- Protection and Enhancement of Environmental Quality (NEPA reform)
Executive Order 11990 -- Protection of Wetlands
Executive Order 11988 -- Floodplain Management
Executive Order 11987 -- Exotic Species
Executive Order 11989 -- Off-Road Vehicles on Public Lands

B. Formulating National Policies and Coordinating Federal Environmental Efforts

The Council had a major role in the following:

1. Ocean Oil Pollution Policy and the President's 1977 Message on Tanker Safety and Standards and oil spill liability fund legislation.

2. Water Resources Policy review and the President's July 12, 1978 Message and directives to agency heads on Water Resources Policy Reform.

3. Solar Energy domestic policy review and the President's June 20, 1979 Message on Solar Energy.

4. Interagency Nuclear Waste Management Policy review and report.

5. Plutonium recycling and breeder reactor policy and Clinch River Breeder Reactor project.

6. Reauthorization and strengthening of the Coastal Zone Management Act.

7. Implementation of the Convention on Trade in Endangered Species (CITES).

8. Water Project Review, Authorizations and Appropriations.

9. Alaska Natural Gas and Northern Tier Pipeline proposals.

10. Oversight and implementation of President's Environmental Messages and directives to agencies.

The Council initiated, chairs, or has a lead role in the following:

1. National Agricultural Lands Study (co-chair with USDA)
   Initiated in 1979 to evaluate and make recommendations on the availability of agricultural land in the U.S.

2. Wildlife Law Enforcement Coordinating Committee.
   Initiated in 1979 to coordinate vigorous enforcement efforts by five Cabinet Departments to stem illegal domestic and international trade in plants and wildlife.

3. Acid Rain Coordinating Committee (Executive Secretary)
   Initiated in 1979 to plan and manage a ten-year program to research and assess the acid rain problem.

4. Toxic Substances Strategy Committee (chair)
   Initiated in 1977 to develop a coordinated federal strategy for data, research and regulatory activities on toxic substances.

5. Interagency Toxic Substances Data Committee (co-chair with EPA)
   Initiated in 1978 to develop a chemical substances information network throughout the government in order to support toxic substances research and regulation.

6. Environmental Data and Monitoring Task Force (chair)
   Initiated in 1977 to review federal environmental monitoring and data programs and recommend ways to improve their effectiveness.

7. Integrated Pest Management Coordinating Committee (chair)
   Initiated in 1979 to assure adoption of IPM strategies in federal programs and to oversee further development and use of IPM practices.

8. Economic Assistance Task Force (chair)
   Initiated in 1977 to review the need for and effectiveness of federal economic assistance to communities experiencing economic dislocation due to federal pollution control programs.

9. Interagency Committee on Housing and the Environment (chair)
   Initiated in 1978 to simplify and improve the environmental review process for federal housing programs, in response to recommendations of HUD's Housing Costs Task Force Report (May 1978).

10. Interagency Committee on Water/Sewer Programs and the Environment (chair)
    Initiated in 1978 to simplify and improve the environmental review process for federal water and sewer programs.

11. Non-Coal Minerals Mining and Reclamation Study
    Initiated in 1978 in response to statutory requirement that CEQ conduct a study of options for regulating mining and reclamation for minerals other than coal.

12. Lake Tahoe Basin Study
    Initiated in 1978 by CEQ for all federal agencies taking actions in the Tahoe Basin to prepare a basin-wide environmental impact statement.

13. Barrier Islands Policy Environmental Impact Statement
    Initiated in 1978 by CEQ and being conducted by the Department of the Interior as lead agency.

The Council handled 8 referrals from heads of agencies under NEPA on proposed actions that other heads of agencies view as environmentally unacceptable, including:

1. Hendry County Flood Control project, Florida.

2. Fire Island to Montauk Point, N.Y. beach and hurricane control project.

3. Packer River Terminal, Minnesota.

4. Foothills Reservoir and Water Treatment Plant, Colorado.

5. County Trunk Highway "Q", Wisconsin.

6. Wando River Marine Terminal, South Carolina.

7. West Side Highway ("Westway"), New York.

8. Lake Alma, Georgia.

The Council developed UPGRADE, a major environmental data system for general use by federal agencies and the public.

C. Council Participation in Other Interagency Efforts

The Council worked with other agencies in the development of Administration policy on the following:

1. Oil Spill and Hazardous Waste legislation (Superfund).
2. The President's Energy Program and Messages.
3. Alaska Lands Designations (D-2 lands and Presidential action).
4. Cost-sharing and other water resources reform legislation.
5. Tuna-Porpoise Controversy.
6. U.S. position and negotiations for the International Whaling Commission meetings and for marine mammal protection.
7. Predator control policy.
8. Antarctica Convention.
9. Regulatory Reform program (legislative and administrative).
10. Highway and mass transit legislation.
11. Non-fuel minerals domestic policy review.
12. Resources Conservation Committee (recycling and resource recovery).
13. Toxic Substances Control Act Interagency Testing Committee.
14. Interagency Tropical Forests Task Force.
15. Soil and Water Resources Conservation Act (RCA) Coordinating Committee (soil, water, and related resources).
16. Interagency Committee on Urban Noise.
17. Interagency Working Group on Export of Hazardous Substances.

The Council is a participant in the following White House and interagency efforts:

1. Preparation of the President's Annual Budget in the Executive Office of the President.
2. Regulatory Analysis Review Group (RARG) in the Executive Office of the President.
3. The President's Reorganization Project.

4. Energy Coordinating Committee.

5. National Productivity Council.

6. Interagency Coordinating Committee (IACC) for the President's urban program.

7. Water Resources Council.

D. Other Legislative Activities

The Council assisted in developing and supporting the Administration's legislative proposals on:

1. Reform of the 1872 Mining Law (hardrock mining).

2. Non-game Wildlife.

3. Section 404 Wetlands Protection Program of the Clean Water Act amendments of 1977.

4. Endangered Species Act Reauthorization in 1977 and 1979.

5. Auto emissions issue and economic incentive provisions of the Clean Air Act amendments of 1977.

E. CEQ Studies and Publications

The Council prepared the following reports:

1. The President's Annual Environmental Quality Reports for 1977, 1978, and 1979.

2. Solar Energy: Progress and Promise.

3. The Good News About Energy.

4. Oil and Gas in Coastal Lands and Waters.

5. Report to the President on Environmental Impacts of Proposed Alaska Gas Transportation Corridors.

6. Progress in Environmental Quality.

7. Integrated Pest Management: Status and Prospects in the U.S. (December 1979 publication date).

8. Report to the President of the Toxic Substances Strategy Committee.

The Council had the following contract studies prepared (partial list):

1. Macro-Economic Effects of Pollution Control Programs (DRI).
2. Environmental Statistics 1978.
3. Wildlife and America.
4. Our Nation's Wetlands.
5. Hardrock Mining on the Public Land.
6. Off Road Vehicles on the Public Land.
7. A Survey of State Programs to Preserve Farmland.
8. The Boston Case Studies on water quality goals, alternatives, and the institutional aspects of wastewater management (with DMB, et al.).
9. Chemical Substances Information Network (CSIN).
10. U.S. Non-Proliferation Strategy Reformulated.
11. Some Long-Term Consequences of Hypothetical Major Releases of Radioactivity into the Atmosphere from Three Mile Island.
12. Energy Conservation in Industry: The Present Approach, The Future Opportunities.
13. Overcoming Social and Institutional Barriers to Energy Conservation.

The Council has the following studies in preparation (partial list):

1. Global 2000.
2. Environmental Indicators.
3. The Availability of Agricultural Lands.
4. Desertification in the United States.
5. Land Impacts of Rural Growth.
6. Community Guidebook for Management of Coastal Floodplains.
7. Guide to the President's Order on Wetlands Protection.
8. Handbook on Water and Sewer Programs.

QUALITY OF THE ENVIRONMENT

Mr. SABO. Is the quality of the environment better today than it was a year ago?

Mr. SPETH. If it is, we have not noticed.

Mr. SABO. Better than five years ago?

Mr. SPETH. I think it is. We have data on that in the Annual Report which we also put out each year. This was our 10th anniversary one, the biggest one we will ever do. It reflects that air pollution violations have gone down considerably, though we are far from solving our air pollution problems, and new problems keep coming up like the acid rain problem that many people were not aware of five years ago. There are many water bodies that have improved. Fish are returning to streams. We issued a study with EPA on 50 water bodies that have come back to a useful state.

On the other hand in the water area, the progress has been slower and more difficult than in the air pollution area. Part of that is that we are just putting out the regulations affecting toxic chemicals, and most of the money spent on sewage treatment plants is still in the pipeline. Out of about $20 billion of Federal investment in sewage treatment plants, only about two of that 20 is on line right now.

Mr. SABO. What about five years from now?

Mr. SPETH. Five years from now, I think most of that will be on line. Will the environment be better? I think it will be. I think some of the programs we have been pursuing will begin to really pay dividends in the 1980's. In many ways, we have spent a lot of the 1970's in putting the programs in place. Congress has written about 20 major laws in the environmental area, and EPA has been busy issuing regulations to implement them. I am convinced these laws will pay off in the future. I hesitate to be pollyannaish about it though, because it seems as though every time we come to grips with one problem, something else surfaces. We really did know five years ago that we had a tremendous problem with hazardous waste disposal, and that it would be something not only going on then, but something which unless we address it effectively now is likely to increase as the waste streams into the air and water is closed off or diminished.

We did know five years ago or so much about the problem of acid rain.

Mr. SABO. How much will that grow in severity over the next few years?

ACID RAIN PROBLEM

Mr. SPETH. The acid rain problem?

Mr. SABO. Yes.

Mr. SPETH. It depends on whether we allow it to increase in severity. The country does need to burn more coal. We are intent on programs that will increase our coal use. As we do that, there is a risk that there will be higher sulfur emissions and unless those sulfur emissions are addressed, the problem could get worse. Also, the problem tends to be cumulative on the landscape. The acidity of the rainfall has been increasing over the past two decades. But even if the rainfall stops getting more acid, the effects tend to be

cumulative and the lakes in the Adirondacks, Canada, and now England, can continue to accumulate the acidity.

Mr. SABO. What would be the cost for retrofitting the old plants?

Mr. SPETH. It is substantial, but I do not have a figure on the top of my head. The problem as to the new plants versus the existing plants is that there is a much larger range than you would imagine, the time at which, I think it is well into the next century, before all our coal-fired powerplants will be new sources, in other words before we phase out the existing plants.

SOLAR ENERGY REPORT

Mr. SABO. Mr. Speth, last year you will recall we had a discussion concerning a solar energy report the CEQ had published. That report, and subsequently the President's August Environmental Message, stated the goal of meeting 20–25 percent of the Nation's energy needs from the sun by 2000. I would like to continue that discussion today.

The December 17, 1979 issue of the New Yorker magazine had an in-depth article on Hans Albrecht Bethe. Bethe received the Nobel Prize in physics in 1967 for his discovery of the specific nuclear reactions that produce energy in the sun and other stars. The article recites Bethe's views on the Nation's energy problems and his outlook for the future. It includes a lengthy analysis of the Three Mile Island incident. Bethe also addresses solar energy.

Quoting from the article:

> A number of people who have pondered the energy question feel that solar energy may help solve our energy problem in the near future. In Bethe's view, solar energy may help to some extent by the year 2000, but even then its contribution will be relatively small. Wishful thinking about solar energy, he feels, should not be allowed to dominate our consideration of the energy problem to the extent that we fail to develop those sources of energy which can make a decisive contribution.
>
> The best way to use sunlight is the way that mankind has used it for ten thousand years; namely, to grow grains and forests, and to use the grains to feed ourselves and our animals, and to use the forests for building, paper, and the rest. But that is not what people have in mind when they talk about solar energy. They have in mind two things. One is its use for heating houses and for heating water, and the other is its use in the production of electricity. I have looked into both of them quite closely, and I am sorry but I am quite negative about them. I like the sun—after all, I found out how the sun works. But after looking at the available evidence, I do not believe that the sun will solve our problems—certainly not in the 20th century. Maybe in the 21st. That I just don't know.

Mr. Speth, Hans Bethe is a world renowned scientist—and by no means the only one—saying that wishful thinking about solar energy is not going to solve our energy problems. Yet it is exactly that type of wishful thinking that the Council is recommending to the President. This troubles me greatly because I do not believe the President is getting the best advice from the Council in this area.

How do you answer Mr. Bethe's charges? What hard science—rather than wishful or biased thinking—do you have to support the unrealistic solar goal of 25 percent in 20 years?

Mr. SPETH. I had not seen that, Mr. Chairman, so it is hard to answer because I do not have his information.

Quite far from wishful thinking, our results have been worked out over many, many months in a detailed process involving every agency in the Government, in the basement of the Department of Energy building with the help of computers. What we thought

could be achieved was set out clearly for each year were. What we thought the solar prices for solar equipment was set out; this has been published and is available.

I think it is important when we talk about 20 percent to remember two things about it, first, you have to have a denominator before you make a fraction, so you get some disagreement over the 20 percent figure from people who have a differing idea as to our total energy usage. We were up front as to what we used, which was roughly 100 quads of energy. We are now using 80 quads of energy in the United States. So if you think we are going to need 150 quads of energy rather than 100, then the solar fraction is less. Our estimate of the solar penetration in the year 2000, if we make an aggressive Federal effort, was roughly 19 quads. We now have about 5.

The second thing——

Mr. SABO. Five quads of solar energy?

Mr. SPETH. Yes.

Mr. SABO. How much has that increased in the last five years?

Mr. SPETH. Not greatly and our estimate of when the big increases would occur were in the 1990's, certainly after 1985, because we know we have to spend the time now building the industrial infrastructure to really merchandise this equipment.

The second thing about the 20 percent goal which some people have missed, is that when we say solar and the President says solar and throughout, we were including all the renewable energy technologies that depend directly or indirectly on the sun, which includes wind, the biomass option, it includes hydro, although we did not include building a large number of dams—

Mr. SABO. What percent was directly solar?

Mr. SPETH. I would say of that 20, a little less than half, as I recall, was direct solar. So, you can get into arguments with people over differences in assumptions and premises, but I would call the committee's attention to this: The person to whom you refer may have been relying to some degree on the work of the National Academy of Sciences committee, called the CONAES report which came out several months ago. They were rather negative.

Mr. SABO. It was my understanding Bethe did his own work.

Mr. SPETH. Let me just call your attention to this study by the National Academy on solar. We were surprised because the conclusions were at variance with the Administration's. So, we took a look at their results and wrote a letter to the New York Times responding to a Times editorial. Then the Times responded in an editorial agreeing with our position.

What our results indicated was that the National Academy's work had made a number of assumptions that were inappropriate to assessing solar energy's future. For example, one of the assumptions was that the price of solar equipment over the next 20 years, forgetting about inflation, that the real price would not decline as these technologies were produced on a larger scale and the technologies were improved. Yet the solar panel of the National Academy had projected just the opposite.

Mr. SABO. Let's look at specifics—Bethe states:

But one must always keep in mind that at present only about 10 percent of our energy consumption goes into the heating of private homes. Even if all the new

houses that are going to be built between now and the year 2000 were equipped with solar heating, it would account for only 2 percent of our energy consumption in that year.

Would you disagree with that analysis?

Mr. SPETH. Probably not. The projections that we used and I should add, the present 20 percent goal was not arrived at merely on our advice, but with the whole interagency group with the Department of Energy involved.

The projections were based on the use of solar in homes, the use of solar energy for the processing of heat in industry, the use of solar for electricity and some for the use of liquid fuels, such as using waste organic materials for producing methane and liqiud gases.

So, it is really when you add up the contribution that solar can make in all the different categories that you can get to figures as large as 20 percent.

Mr. SABO. Mr. Bethe concludes that he is not against using solar power. He thinks it should be used wherever economically reasonable. What troubles him is that "people use it as an excuse, a reason for not developing other sources of energy—primarily nuclear and coal—which we know how to use, and which, in combination, could satisfy our energy needs." Is a dislike of nuclear power at the base of the Council's wishful thinking concerning solar power?

Mr. SPETH. No.

NUCLEAR POWERPLANTS

Mr. SABO. Do you personally oppose construction of additional nuclear power plants?

Mr. SPETH. My view is that we will need in this century, the nuclear power plants that are on line and those which are in the pipeline. Contrary to a lot of my colleagues in the environmental community in the United States, I think we will need those nuclear power plants that we are committed to now, by virtue of being operated, or the much larger number under construction today, in this century.

We did a report, Mr. Chairman, which outlined what we thought was a reasonable balance of the various alternative energy sources sketched out over the next two decades. It called for in those two decades using the roughly nine quads of nuclear energy, the amount that we are currently committed to.

Mr. SABO. Which do you think is the greater risk, expanded nuclear use or expanded use of coal?

Mr. SPETH. I get asked that a lot. I think it is just about a draw, and I do not say this in an effort to avoid the answer. I have a very hard time in my own mind answering the question of whether that next unit, if you are just talking about whether the next unit should be coal or nuclear. They pose very different problems and are very hard to compare for that reason. The risks of coal are more certain and measurable and easier to do something about in some ways because in coal technologies you could install scrubbers and reclaim the mine if it was stripped to get the coal and this type of thing. On the other hand the nuclear risks are less certain, less easy to define. On the other hand, should we have a large accident in the United States, should an accident like Three Mile

Island have taken additional turns for the worse and led to significant releases of radiation, that would be a very serious thing as well.

So, I think the best answer to our energy problem, the cheapest, cleanest, and safest from the national security point of view is conservation. We are just beginning to scratch the surface. I think of what we can achieve by conservation. By that, I do not mean "doing without" like sometimes people think, but I mean by increasing the efficiency and productivity of our energy inputs.

Mr. SABO. If one accepted your figure for the year 2000, solar and other sources really would not produce everything that you wanted to produce and that you hope it would produce. It still would not replace any of the energy sources we are using today, if your figures are accurate. We are jumping from 80 quads to 100 quads, and if wind and biomass produce 20, that still leaves us with 80.

Mr. SPETH. Between now and the year 2000, I see coal use and nuclear and renewable use going up, and oil would be the one that I think we can reduce.

Mr. SABO. Realistically, what are the prospects for production of electricity from solar?

Mr. SPETH. I think in the——

Mr. SABO. Of your 20 percent or as I understand your answer, about 10 percent was directly solar——

Mr. SPETH. There is some electricity in that.

Mr. SABO. Was it significant in the 20 percent?

Mr. SPETH. Yes, it was. But the wind—we had some photovoltaic, some wind by the year 2000, and some of the biomass would go into producing electricity, burning of trash for electricity. So, we did get a significant part of that which was electricity. I will provide the exact figures for the record.

[The information follows:]

ELECTRICITY FRACTION OF THE 20 PERCENT SOLAR GOAL

Based on the national goal that 20 percent of year 2000 U.S. energy consumption will come from solar energy sources, it was asked what fraction of this 20 percent solar could be electricity. The Solar Domestic Policy Review Response Memorandum gave the following estimates for electricity production (in terms of quads of primary fuel equivalent) for the Maximum Practical Case (20 percent goal):

Source and energy	*Quads*
Hydro	4.3
Solar Thermal Electric	0.4
Wind	1.7
Photovoltaics	1.0
Ocean Thermal	0.1

In addition it was estimated that some electricity would come from burning biomass and from industrial solar cogeneration, perhaps 1-2 quads. This provides a total of 8.5 to 9.5 quads of electricity, or 45 percent to 50 percent of the total solar contribution.

Mr. SABO. Mr. Bethe is not the only eminent scientist seriously questioning some of the idealistic solar power estimates. The National Academy of Sciences, the country's most prestigious scientific organization, in a four-year, $4 million study for the Department of Energy, came to basically the same conclusions.

The Academy determined that:

Because of the higher economic costs, solar technologies will probably not contribute much more than five percent to energy supply in this century unless there is massive government intervention to penalize the use of nonrenewable fuels. The danger of such intervention lies in the possibility that it may lock us into obsolete and expensive technologies with high materials and resource requirements.

Mr. Speth, I have seen your rather narrowly focused letter to the editor of the New York Times concerning the NAS report in response to the Times 'January 16, 1980 editorial. Did you see the Times editorial of January 21, 1980?

It stated:

What is significant is that the panel was agreed on two important areas of energy policy: nuclear power and coal are the only large-scale alternatives to oil and gas in the near term, and solar power cannot economically supply a substantial input of energy during the next three decades. Though not every single panelist may agree, the meaning that comes through in the report is that there is no time for delay in the development of the Nation's two best alternative sources of energy.

Do you disagree with that?

SOURCES OF ENERGY

Mr. SPETH. Well, I think we are developing all our sources of energy, right now. We wrote the Times the letter, and the letter is backed up by the larger document. I think it would be useful if I could supply the Committee with that material if you are concerned, because we could not find the National Academy's information. They do not have in their report the data on which those conclusions were based. We called up everyone associated with that study, not everyone, but the key people, five people, roughly, including the study director and Harvey Brooks at Harvard, the chairman of the CONAES panel, and we were told this was a back-of-the-envelope calculation that they did late in the study. It is not in any of the subpanel reports. We replicated as best we could the conclusions of the calculations they did, using the subpanels' own data, and came out with the estimate that theirs was 250 percent too high on the cost for widespread solar use.

Even the CONAES report did not disagree with us on what is technically possible. Their estimate of what was technically feasible was close to that of the Administration. The only difference was the cost figure. And they did not have good information on which to base their conclusions. Our data is out and is available.

Subsequent to our writing the Times and supplying them with our backup material, the Times wrote a second editorial, which said they felt like they had been had, they used that phrase, by the National Academy, and they were severely critical of the Academy.

[The information follows:]

2/25/80 JJM
CEQ

COST ESTIMATES ON HIGH SOLAR FUTURE
BASED ON CONAES DATA AND ASSUMPTIONS

In its final report, the CONAES concluded that "[t]he total cost of implementing such a [high solar] scenario, at today's costs for solar technologies, might be around 3 trillion dollars, perhaps 2-3 times the cost of obtaining equivalent energy from conventional nonrenewable sources." (p. 423).

The only documentation presently available from CONAES on the $3 trillion estimate of the High Solar Future occurs in a letter dated January 23, 1980 to Dr. Jack Hollander, Study Director for CONAES and Associate Director for Planning at the Lawrence Berkeley Laboratory from Dr. Mel Simmons, former Chairman of the Solar Resources Group, now employed by the General Electric Company. Dr. Simmons apparently was the source of the $3 trillion figure cited for the cost of providing 29 quads of energy in the year 2010 from renewable sources. His letter, a copy of which is attached, explains that he cannot now find his original notes and calculations and that he has had to reconstruct them.

The attached estimate by Dr. Simmons of the cost of the high-solar future is based, with two exceptions, on 1975 solar technology prices expressed in 1975 dollars. Because CONAES expects solar costs to drop, measured in constant dollars, this estimate is necessarily high. The purpose of this note is to present calculations of the cost of the

60-531 O - 80 - 66

CONAES high solar future taking into account the anticipated cost reductions over the next 30 years. All the data and cost curves used in these calculations are taken directly from the final report of the CONAES Solar Resources Group.

The conclusion of the revised estimate is that, by using 1975 costs instead of the projected, declining costs, CONAES has overestimated the total cost of the High Solar Future by about 250 percent.

Domestic Hot Water

A. CONAES (1975 costs)

Total number of solar systems installed between 1975 and 2010: 92×10^6. Cost of a system in 1975 is $1200. Total cost if installed at 1975 prices: $92 \times 10^6 \times \$1200 = \$110 \times 10^9$

B. CEQ (Using CONAES estimates of penetration and cost curves).

Number of systems installed between 1975 and 1985: 12×10^6

Average cost ($1200 + $900)/2 = $1050. Cost: 12.6×10^9

Between 1985 and 1990: 17×10^6 systems at an average cost of $800: 13.6×10^9.

Between 1990 and 2010: 63×10^6 systems at $700: cost of 44×10^9

Total Cost: 70.2×10^9

Over Estimate = $110 billion -$70.2 billion= $40 billion.

Passive Space Heating

A. CONAES (1975 Costs)

Total number of passive systems installed between 1975 and 2010 is 52 million. Cost of each is $450. Total cost if installed at 1975 prices is $52 \times 10^6 \times \$450 = \$23.4$ billion.

B. CEQ (Using CONAES estimates of penetration and costs)

Number of systems installed between 1975 and 1985 is 15 million. Average cost is $425 for a total of $6.4 billion. Between 1985 and 2010 37 million units are installed at a cost of $400 each for a total of $14.8 billion. Total cost is $21.2 billion.

Over Estimate = $23.4 billion - $21.2 billion = $2.2 billion

Active Space Heating

A. CONAES (1975 costs)

Total number of active space heating systems installed between 1975 and 2010 is 26 million. At a cost of $6000 each the total cost is $156 billion.

B. CEQ

Number of systems installed between 1975 and 1985 is 0.7 million at a cost of $4800 each, total cost, $3.4 billion. Between 1985 and 1990, 1.1 million systems installed at an average cost of $3300, total cost of $3.6 billion. Between 1990 and 2010, 24.2 million systems will be installed at an average cost of $3000 for a total cost of $72.6 billion. Total cost: $79.6 billion.

Over Estimate: $156 billion - 79.6 billion = $76 billion.

Non-Residential Air Conditioning

A. CONAES (1975 costs)

Total installed capacity in 2010 of 22 million tons of air conditioning at a cost of $4200 per ton gives a total cost of $92.4 billion.

B. CEQ (based on declining costs and penetration of CONAES)

Average cost between 1975 and 1985 is $3650 times 0.04 million units installed gives $0.146 billion. Between 1985 and 1990, average cost is$2800 and 0.76 million units are installed for a cost of $2.1 billion. After 1990 cost is $2500 and 21.2 million units are installed for a cost of $53 billion. Total cost: $55.2 billion

Over Estimate: $92.4 billion - $55.2 billion = $37.2 billion

Industrial Process Heat

A. CONAES (1985 prices)

No price decline is postulated so that CEQ and CONAES agree on the calculation performed by CONAES: $320 billion. 40 billion feet of collector at $8 per square foot.

Central Station Solar Thermal

A. CONAES (1985 costs)

CONAES apparently lumps both PV and solar thermal together. 8.7 quads are assumed displaced in 2010. At 10,000 Btu/kw-hr this means 870 x 10^9 kw-hrs. At 20% capacity factor this implies 496 million kw. At $2500/kw the total cost is $1.24 trillion.

B. CEQ

We assume a load factor of 40%, less than the 45% that CONAES assumes by 2000, and a cost of $1200/kw the value projected for 2000. These values are characteristic of the two decades when virtually all of the growth would occur. Total cost: 250x 10^6 x $1200 = $300 billion.

Over Estimate: $1,2400 billion - $300 billion = $940 billion.

Total Energy

A. CONAES (1985 costs)

1.9 quads are assumed displaced. At 10,000 Btu/kw-hr this implies 190 x 10^9 kw-hrs. At 20% load factor this is 109 million kilowatts installed. At $1500/kw (1985) the total cost would be $163 billion.

B. CEQ

According to the Solar Resources Group most of the growth in total energy systems will occur at costs between $500 and $700/kw and at load factors between 25% and 33%. We use $600/kw and 30%. This requires 72 million kw for a cost of $43 billion.

Over Estimate: $163 billion - $43 billion = $120 billion

Wind

A. CONAES (Interruptible Loads only)

CONAES assumes a 20% capacity factor, requiring 100 million kw by 2010. Cost per kw is $875 (1975). Total cost is $90 billion.

B. CEQ

The Solar Resources Group postulates a 40% capacity factor. always. We use this value. The average cost between 1975 and 1985 is $787 and installed capacigy 2.8 million kw for a cost of $2.2 billion. Between 1985 and 1990 the average cost is $618 and the increment in capacity is 11.4 million kw for an added cost of $7 billion. Between 1990 and 2000 the cost is $525 per kw and the new capacity is 25.7 million kw for a cost of $13.5 billion. Between 2000 and 2010 the cost is $501/kw and the new capacity is 10 million kw for a cost of $5 billion. Total cost is therefore $27.7 billion.

Over Estimate: $90 billion- $27.7 billion = $62.3 billion.

SUMMARY OF TOTAL COSTS ($ billions)

	CONAES	REVISED
Domestic Hot Water	110	70
Passive	23	21
Active	156*	80
Non-Residential AC	92	55
Industrial Process Heat	320	320
Central Station	1240	300
Total Energy Systems	163	43
Wind	90	28
TOTAL	2200	917

$2200/$917 = 240%

*Corrected Value

cc: PROFESSOR HARVEY BROOKS

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, RESEARCH AND DEVELOPMENT CENTER, P.O. BOX 8
SCHENECTADY, NEW YORK 12301, Phone (518) 385-2211

CORPORATE
RESEARCH AND
D[illegible]

OFFICE OF [illegible]
RECEIVED
FEB 04 1980

RECEIVED
JAN 28 1980
J.M. HOLLANDER

Building K-1, Room 5C12
January 23, 1980

J. M. Hollander
Associate Director for Planning
Lawrence Berkeley Laboratory
Berkeley, CA 94720

Dear Jack:

In response to your questions, I will summarize here the method that we had in mind when we produced the 3 trillion dollar cost estimate for the High Solar Scenario. I have not been able to find the notes from our original calculation which, I think was done in 1977. However, this calculation follows the same approach and uses the same data.

The quantity we are calculating is the capital cost (first cost) of the solar energy systems needed to produce the High Solar Scenario level of 28.8 quads in the year 2010 with "today's cost for solar technologies." Of course, there is no well defined present cost for some of the systems included in the High Solar Scenario. Thus, for two of these technologies, I actually use the 1985 cost given in the Solar Resource Group Report. This reduces the cost estimate greatly. If the 1975 values from the SRG report are used throughout, the total is well above 3 trillion dollars. For the other technologies, I use the 1975 costs given in that report. Further, the capital cost of the biomass systems cannot be easily extracted from the SRG report. I simply ignore these as smaller than the capital cost of the heating and cooling and solar electric systems. Adding them in would bring the total calculated below to about the value in the report of three trillion. The calculation involves deriving the appropriate unit cost of the system, multiplying by the number of units needed to meet the energy contribution of the High Solar Scenario, and summing over all technologies.

GENERAL ELECTRIC

Technology	quads, 2010	Units	Unit Capital Cost,$	Unit Needed	Total Capital Cost
Domestic Water Heating	1.3	MMBtu/yr	86.0	1.3×10^9	1.12×10^{11}
Passive Space Heating	0.4	MMBtu/yr	59.6	4×10^8	2.4×10^{10}
Active Space Heating	1.21	MMBtu/yr	166.3	1.21×10^9	2.01×10^{11}
Non-res Air Conditioning	1.50	tons	4200	22×10^6	9.2×10^{10}
Industrial Process Heat	6.6 (25% effic.)	ft^2	8	4×10^{10}	3.2×10^{11}
Central Station Solar Thermal	8.7 (0.2 load Factor)	kW_e	2500 (1985)	4.97×10^8	1.24×10^{12}
Total Energy	1.9	kW_e	1500 (1985)	1.1×10^8	1.63×10^{11}
Wind	1.8	kW_e	875	1.0×10^8	9.0×10^{10}
			Total Capital Cost		2.24×10^{12}

These values seem consistent with our calculations of 1977. However, it has been a long time since I last went through the numbers in the SRG report, so it might be worthwhile for someone else to try to reconstruct these calculations. I hope this helps you in responding to inquiries. I'm looking forward to seeing you next month.

Sincerely,

MKS

Melvin K. Simmons
Technology Evaluation Operation

/js

VALUE OF SCIENTIFIC STUDY

Mr. SABO. In your judgment, are you saying they did not do a very scientific study?

Mr. SPETH. That is a mild way of saying it.

Mr. SABO. And misuse of Federal funds?

Mr. SPETH. The study was an ERDA grant and cost $4 million, more than our annual budget.

Mr. SABO. What did the Department of Energy have to say about the report?

Mr. SPETH. I talked with Secretary Sawhill and he agreed there needed to be a response to the CONAES report. We worked with the Solar Energy Research Institute in preparing the response we sent to the New York Times.

Mr. SABO. Time will reveal which calculations are better.

Mr. SPETH. I think that is an accurate statement, too.

Mr. SABO. But there can be no question that cost is an issue. A February 12, 1980 Wall Street Journal article made the following observation:

> Cost problems are expected to mitigate any rush into solar power, windmills and other exotic energy sources, corporate executives say. These alternative energy sources will be used occasionally, but typically only when government subsidizes the construction costs.
>
> To get an idea of the size of the task of replacing conventional fuels with solar power, it would cost $440 billion, and a million acres of solar cells, to replace just one-half of the oil imported last year, according to Consumers Solar Electric Power Corp., a Culver City, California, solar-cell producer. And critics say those numbers are too optimistic.

Would you agree with that industry-developed figure, Mr. Speth?

Mr. SPETH. Let me take the precise figures and provide the information for the record.

[The information follows:]

COSTS OF SOLAR ENERGY

At the hearings, we noted that we would check the numbers presented in the February 12, 1980 Wall Street Journal article that was referenced in the hearings and respond to your question. We find that the numbers are about right, i.e., that "it would cost $440 billion, and a million acres of solar cells, to replace just one-half of the oil imported last year."

However, the $440 billion figure must be put into perspective. The purchase of half of our imported oil, at $30 per barrel, costs the U.S. economy about $48 billion per year (1980 dollars). If oil prices were to stay constant—which is very unlikely—it would take less than ten years to "buy" the entire solar investment. The solar investment on the other hand is "inflation proof," and will continue to provide the equivalent of 4.4 million barrels per day of oil for years after the investment is made.

As far as the one million acres is concerned, we must bear in mind that this area could be provided by areas that are already developed, such as rooftops and areas above parking lots. In the Council's report The Good News About Energy we estimated that 1.3 million acres could be disrupted by strip mining over the next 20 years, and 10 million acres could be dedicated to rights-of-way for high voltage transmission lines over the same period. Thus, conventional energy sources could affect much larger areas in far more environmentally disruptive ways than the 1 million acres that might be used for solar cells.

Mr. SABO. If there is not a basic commitment with the energy producing industry to use solar, what chances are there of maintaining 20 percent?

Mr. SPETH. I think there is a commitment in the business community in the United States to develop solar.

DECENTRALIZED SYSTEM

Mr. SABO. Let me ask you the question in this form: To what degree do you think there will be a more decentralized system?

Mr. SPETH. Solar does tend to be more decentralized, particularly because you cannot produce 1,000 megawatts on-site. But I am of the view that unless the business community is behind it, unless the utility industry is involved fully and supportive, unless the big companies like ARCO and Exxon are involved in promoting solar, as they are increasingly, and Texas Instruments and others, we will never see the 20 percent solar goal.

Mr. SABO. How much government money will be utilized in meeting that goal, including tax credits? As I recall the windfall profits increased the solar cost up to $10,000.

Mr. SPETH. The Administration's proposal, one of the tax credits we felt strongly about, did not get adopted, that was the passive solar tax credit which would have given a tax credit to developers to use solar energy techniques, in terms of locating the houses, in terms of where the windows are, the type roof overhangs, things that can dramatically reduce home heating and cooling costs.

There are homes right out here in Virginia, I am told, which by using passive techniques have greatly reduced heating costs. But the point is, that would have been a very effective tax credit. That has not gotten adopted as yet. I do not think we proposed raising the tax to 40 percent.

We made estimates in June when we sent the President's program up, of what achieving the 20 percent goal would cost both in terms of private-sector investment and public-sector investment.

The initiatives we proposed in our estimate would have gotten us up to about 15 percent solar by the year 2000 if they had been adopted and implemented quickly. The other five percent we expect to get and hope to get from complementary State and local programs and additional Federal programs to be enacted over the next decade.

Mr. SABO. Provide, for the record the total cost of achieving 20 percent solar by the year 2000.

Mr. SPETH. Fine.

[The information follows:]

NET COSTS OF ACHIEVING 20 PERCENT SOLAR GOAL

The solar Domestic Policy Review (DPR) estimated the additional, or net, cost that would be required to achieve the goal of meeting 20 percent of U.S. energy consumption in the year 2000 from solar energy sources. In making the estimates, the DPR used specific assumptions regarding the cost of both conventional and solar technologies.

In particular, the cost of oil was assumed to reach $25 per barrel only by the year 2000. The fact that world oil prices have already reached and exceeded this value means that based on the DPR assumptions the DPR estimate of the net cost for achieving the 20 percent solar energy goal is too high: i.e. the incremental cost to the nation will be less than the DPR estimated. The DPR conclusion was that the cost to the nation of achieving the 20 percent goal would range from a small savings to an increase of about one to two percent in the total national energy bill over the next two decades. The DPR Impacts Panel, which made this estimate, concluded that ". . . achievement of accelerated solar growth (and its associated environmental, employment and strategic benefits) can be reached with a penalty of no more than a few percent of our cumulative energy bill, [and this conclusion] is unlikely to change over a wide range of assumptions." (Page 23, Report of Impacts Panel.)

The portion of this extra cost borne by the Government has not been estimated.

MEMBERS OF ACID RAIN COMMITTEE

Mr. SABO. Let us turn to another complicated issue—acid rain. The President's August Environmental Message indicates his intention to establish an Acid Rain Coordination Committee. What agencies are members of the Committee?

Mr. SPETH. The co-chairs of the Committee are EPA and the Department of Agriculture. CEQ is the executive secretary of the Committee and we house the effort at CEQ.

Mr. SABO. What precisely is your role?

Mr. SPETH. As executive secretary?

Mr. SABO. Yes.

Mr. SPETH. With help from the EPA and the Department of Agriculture, we are staffing and serving as the clerical focal point for the effort. The other agencies that are members are the Department of Interior, the Department of Energy, Department of Commerce, Department of State, the National Science Foundation, and the Office of Science and Technology Policy.

Mr. SABO. Can you indicate for the record the 1979, 1980, and 1981 amounts for acid rain research conducted by the participating agencies.

Mr. SPETH. My recollection is that it is about $10 million a year for those years. Let me ask Paul Portney, our senior staff officer. Do you recall what the Federal investment is?

Mr. PORTNEY. I believe it is in excess of that, but we are currently in the process of compiling from each agency a list of projects involving acid rain. Based on the very early back-of-the-envelope calculations that we asked them to make, the indications were that it may have been in excess of $10 million a year. But we do not have the final figures from the agencies as yet or a comprehensive listing of the program.

Mr. SABO. When it is available, submit the final estimates for the committee files.

Mr. PORTNEY. Yes.

Mr. SABO. Was the Federal Acid Rain Assessment program completed by January 1, 1980, as planned?

Mr. PORTNEY. As you can understand, the National Science Foundation has given a lot of grants that have to do with sulfur dioxide. What we are trying to do is get a realistic assessment as to which of those programs contribute to our knowledge of acid rain, and we want to prevent them from throwing in the kitchen sink.

Mr. SABO. What is causing the delay in getting the information?

Mr. PORTNEY. The agencies were slow in nominating representatives to the task force.

Mr. SABO. It was due January 1.

Mr. PORTNEY. Yes. We hope to have it out and available to the public in a month.

OIL BACKOUT PLAN

Mr. SABO. Two weeks ago the President announced his oil backout plan—which will result in the conversion of many steam generating plants from oil to coal. One likely result is the increase in sulfur dioxide emissions, which, when mixed with water vapor in the atmosphere, will exacerbate the acid rain problem. What was

the CEQ's advice to the President on this matter? I notice in the paper, the head of EPA is not all that happy.

Mr. SPETH. I think that is a little exaggerated. But we would like to keep our advice to the President confidential. It is no secret, however, that the Council and EPA expressed to the President our deep concern with the increased acid rain that could result from a coal conversion if there was not accompanying this legislation or some other program with appropriate controls on the sulfur and nitrogen emissions.

Mr. SABO. Do you personally feel the Administration's proposal adequately addresses the acid rain situation?

Mr. SPETH. I think the Administration made no pretense that the program it sent to the Hill, sent to you, addressed the acid rain issue fully, and we are still in the process of deciding exactly how best to address the acid rain problem.

Mr. SABO. What studies has the Council performed on acid rain in the past two or three years?

Mr. SPETH. Our principal effort has been to work with this Committee, the Acid Rain Assessment Committee. You asked one question earlier which I did not give you an answer to, though. We did not meet the deadline, but we are on the verge now of getting the acid rain program out and out to the public for comment. Paul, when will that be available?

Mr. PORTNEY. Within the next month or so it will be available to the public and we hope to get it to the Committee sooner than that.

COMPARISON OF GOALS WITH CEQ

Mr. SABO. The Office of Science and Technology Policy appeared before the Committee last week. The mission of that office concerning scientific matters is very similar to that of the Council's involvement in environmental issues. However, the Science Office is able to operate with less money and fewer people.

Mr. SPETH. I cannot speak for the budget office of the Office of Science and Technology Policy. I do know this. We have to cover an immense area in terms of providing advice to the President, in terms of responding to public issues that come up, and in terms of developing legislation for the President and participating in interagency reviews of issues.

We cover all the energy issues that come up because they are so related to environmental concerns. We have got to be knowledgeable and conversant with management of public lands, with farmland protection problems, which I mentioned to you, with wetland protection, with endangered species, with the impact of transportation systems on the environment, with the impact of housing plans and urban issues on the quality of people's life and it, frankly, always amazes me, Mr. Chairman, that we are able to do as much as we are able to do on so small a budget as we do have.

I think it is a very lean and frugal budget which is adequate, but barely. I would call your attention to one of the appendices in our justification statement which lays out things we have been able to do in the past three years, some of the highlights. It is a record we are very proud of.

Mr. DELANEY. The Office of Science and Technology Policy has an active list of 100-plus consultants and an additional list of a prospective 200 consultants according to Mr. Montgomery. So they can call this kind of talent in on a daily or weekly basis to reinforce their staff.

Mr. SABO. How are some of those compensated?

Mr. DELANEY. Most all, at a daily, weekly, or occasionally an hourly rate.

Mr. SPETH. The reason we need additional funds larger than theirs is that our responsibilities are not comparable to those of the Office of Science and Technology. They are more sweeping and more broad.

Mr. SABO. Many environmental issues also relate to the scientific community and involve the Office of Science and Technology Policy; for example, toxic pollutants, the global increase in carbon dioxide emissions, and radiation policy.

For the three examples I just mentioned, explain how the Council's role differs from that of the Office of Science and Technology Policy.

Mr. SPETH. In fact the Office of Science and Technology Policy does very little in that area, whereas we have done an immense amount. We chair several large, important interagency committees that are developing programs to improve, coordinate, streamline, reduce paperwork in several areas.

COMMITTEES CHAIRED BY CEQ

I chair the President's Toxic Substances Strategy Committee which has been working for two years to develop systems for data management within the Federal government, to develop programs for effective regulations, effective paperwork reduction and coordination among all the agencies issuing regulations. It has been a mammoth task and has taken a lot of our time. The Office of Science and Technology has participated with us.

We have a legislative seat under the Toxic Substances Control Act which takes additional time. It is my understanding they are not a member of that. We also chair the Interagency Committee on Monitoring, which is one of our mandates to study and improve systems for data analysis and monitoring. We chair that effort and have been working for two years on it, as well.

Lastly, we also are responsible for an additional co-chairing with EPA of additional interagency task force in developing a comprehensive computerized data system within the Federal government.

In prior years, the Council was responsible for conceptualizing and getting before the President at that time what eventually became the legislation in the Toxic Substances Control Act, and we also have to work closely with EPA on all their toxic substances regulations.

We also work with the Department of Agriculture on pesticide questions, and our investment in the toxic issues has been historically and continues to be quite extensive.

Mr. SABO. What has been the Council's involvement in the proposed Radiation Policy Council?

60-531 O - 80 - 67

Mr. SPETH. My recollection is that that is one activity in which we have not been involved significantly, if it is the activity I think you have reference to, dealing with low-level radiation standards.

Let me mention two things, Mr. Chairman. I said in general that our responsibilities were more involved than the Office of Science and Technology Policy. I certainly think they are entitled to their budget request as well, but there are two things that highlight some of the differences. First we do have responsibilities for putting out this Annual Report. It is used in teaching classes around the country: it is a standard reference handbook.

NEPA REGULATIONS

Secondly, we have a regulatory responsibility in a couple of areas but by far the most important is that we have responsibility for the environmental impact statement, for issuing regulations binding Federal agencies, for being sure those regulations are implemented. We issued new regulations about a year ago designed to streamline the process, to make the impact process responsive to applicants in terms of response to requests for additional time.

It took more than a year-and-a-half of careful work to develop that. Now, we are spending time to make sure those regulations which we think are responsive to public concerns, we are spending that amount of effort to make sure agencies effectively carry out those regulations.

We received a letter of commendation for those regulations from the Environmental Institute, the Chamber of Commerce, and other groups.

Mr. SABO. I compliment you, if you can get that from those organizations.

Mr. SPETH. It was an amazing achievement for which our General Counsel, Mr. Yost, deserves the largest amount of credit.

Mr. SABO. I think you have given us the answer to this: What involvement has the Council had in the Administration's exercise on the 1981 budget to effect reductions?

Mr. SPETH. That was the effect on us. Also our only other involvement has been in providing advice to the President on the reductions on other areas.

Mr. SABO. Reductions involving EPA and other agencies?

Mr. SPETH. Yes.

DEALING WITH THE TWO-PERCENT REDUCTION

Mr. SABO. Would it be more difficult to live with the $38,000 reduction in personnel costs or $38,000 reduction in consulting contracts under other services?

Mr. SPETH. I think it is more difficult to live with a $38,000 reduction in personnel. That would be my guess. But you might be interested in hearing more views on that.

Mr. STROHBEHN. For 1981, it would be better not to have a reduction in contracts. Particularly in light of the regular process that Congress has had in looking closely at our work, it was focused on taking funds from that area. As our justification statement makes clear, the amounts we have had for studies has dropped precipitously over the years. We are basically at rock

bottom. We think our request for increased funds for studies is very modest and important.

Mr. SABO. Does the reduction in personnel costs assume a reduction in allowable personnel? Does it assume people will be temporarily replaced?

Mr. SPETH. That is a good question. I do not know quite what the thinking is nor have we had an opportunity to sort out how that cut would affect our request.

Mr. SABO. Provide the information for the record.

Mr. SPETH. We will provide that.

[The information follows:]

APPROPRIATIONS REQUEST REDUCTION

Since our hearings before this Committee, we have been informed by OMB that the reduction in the President's request for appropriations for the Council for fiscal year 1981 will be $36,000. While the method for determining the amount of this reduction was based on the Council's estimate for fiscal year 1981 personnel costs, the Council is not required to reduce its personnel costs.

The Council will reduce its fiscal year 1981 expenses in ways which will minimize adverse effects on achieving our objectives as set out in our Justification Statement. Some fiscal year 1981 savings may be realized by attrition of higher graded personnel who are replaced by people with a lower grade. We will seek to achieve savings through program improvements such as by utilizing less expensive printing methods for our publications. If necessary, we may reduce our personnel costs by one person a year or we may reduce our summer intern program. These are the principal means by which we would reduce our fiscal year 1981 expenses by $36,000.

BONUSES PAID TO CEQ EMPLOYEES

Mr. SABO. What is the total amount the Council paid in 1978 and 1979 for cash bonuses?

Mr. DELANEY. To employees?

Mr. SABO. Yes.

Mr. DELANEY. We had a cash award in 1979 of $325.

Mr. SABO. Did any employee of the Council receive more than $47,500 in salary and bonus?

Mr. DELANEY. With the exception of the members which serve at Presidental levels, no.

OTHER AGENCIES' CONTRIBUTIONS TO CEQ'S ANNUAL REPORT

Mr. SABO. Turn to page 4 of the budget justifications. The legend indicates that CEQ will be aided in publishing the annual report "by resources and materials provided by other agencies." In past years this has included financial resources; is that correct?

Mr. SPETH. Yes, it is.

Mr. SABO. Will you detail for the record the agencies and the amounts contributed in the past three years?

Mr. SPETH. We will provide that.

[The information follows:]

For the past three years, the Council has received direct financial support from other agencies as follows:

Fiscal year 1977: None.
Fiscal year 1978:

Environmental Protection Agency	$20,000
Department of Agriculture	20,000
Department of Transportation	20,000
Department of Interior	20,000

Fiscal year 1979:	
Department of Energy	$25,000
Water Resources Council	5,000
Department of Interior	30,000

Mr. SABO. By what authority does the Council solicit funds from other agencies for this purpose?

Mr. SPETH. There are several important points there, Mr. Chairman. The first is that the agencies are by far the largest recipient of the annual report and the largest user of it. This year we estimate about 46 percent of that annual report which we discussed earlier will go to the Federal agencies for their use. They are willingly providing us with support to help us provide them with that information. I should also add that under reoganization plan No. 1 of this Administration, the President directed us to seek assistance from other agencies in preparing the annual report and asked other agencies to help us in preparing the report. That aid and assistance takes different forms. It has taken the form of helping us with certain data and analysis and it also has taken the form of helping us make up for the reduced staff that we lost at that time that was allocated to preparing the report. It is not unusual for CEQ to receive funds from other agencies to prepare major reports jointly, as the statistics compilation indicates.

Mr. SABO. What is the total cost of preparing the report?

Mr. STROHBEHN. This year, about $460,000.

Mr. SABO. I assume the other agencies request funds in their budgets for CEQ to produce the program.

Mr. STROHBEHN. As part of their overall program, yes.

Mr. SABO. Why doesn't the Council just increase its request to OMB?

Mr. SPETH. Mr. Chairman, the reason is quite simple, we think this is the best and most appropriate way to do it. It is not an unusual thing at all for the Council to be in the position of cooperatively producing reports with the help, including the financial help, of other agencies.

I call your attention to the statistics report which, while we were the principal responsible party, it was cosponsored by the other agencies mentioned, and they contributed financially.

Mr. SABO. How much do other agencies contribute for projects such as this?

Mr. SPETH. We will supply that for the record.

[The information follows:]

PUBLICATIONS FUNDING

Concerning the amount of support the Council might receive from other agencies, this sum can and does vary vastly from report to report. As you know, publications are frequently the products of studies. Such studies are sometimes entirely funded by CEQ and others are jointly pursued by CEQ and other agencies. An example of the latter is the Toxic Substances Strategy Committee. Thus, reports that may result from these studies could be funded either significantly or not at all by other agencies.

The statistics report—Environmental Statistics—1978—was cosponsored by CEQ, the U.S. Geological Survey of the Department of the Interior, and the Environmental Protection Agency. The direct costs of preparing, producing, and printing the publication amounted to about $54,000, and about 75 percent of these funds were contributed by other agencies. Examples of publications that were published with CEQ funds are Oil and Gas in Coastal Lands and Waters and Good News About

Energy, which examined the potential for increasing energy productivity and for long-term energy conservation in the United States.

COUNCIL'S REQUEST FOR FISCAL YEAR 1981 FUNDS

Mr. SABO. What was the Council's total request to OMB for fiscal year 1981?

Mr. SPETH. $3,606,000.

Mr. SABO. About $170,000 less than approved.

Mr. SPETH. Part of that was an effort to increase our staff resources. We were convinced by OMB that we were wrong.

Mr. SABO. Page 5 details the Interagency Coordination and Environmental Quality Improvement Program. This activity is decreasing 11 percent, or $220,000 in 1981. What are you doing in this area in 1980 that you won't continue in 1981?

Mr. STROHBEHN. There are two major committees which we do not expect to continue in 1981. One is the Environmental Data and Monitoring Task Force, and the other is the Toxic Substances Strategy Committee.

Secondly, our major efforts in coordinating the NEPA regulations by then will decrease. All the agencies will be expected to have procedures in place. They will be promulgated, the regs will be out, and we will be in an area where there will be less need for resources to supervise that process.

Mr. SABO. The justifications indicate the Toxic Substances Subcommittee will be continuing in 1981.

Mr. SPETH. In 1981, if that is in there, that is incorrect. We envision the strategy committee continuing in diminished form in 1980, through part of 1980, but certainly——

Mr. STROHBEHN. We said "similar to", we said there would be other committees "similar to" it, not that the Committee will be continuing.

Mr. SABO. List other committees that will be discontinued in fiscal year 1980.

Mr. STROHBEHN. Sure.

[The information follows:]

FUNDS FOR CEQ DECISION UNITS

For fiscal year 1981 as compared with fiscal year 1980, we have estimated an 11 percent decrease in funds for the interagency Coordination and Environmental Quality Improvement Program. This compares with an increase in support for the other two decision unit areas: Environmental Policy Analysis and Development and Environmental Data Assessment and Acquisition. Several major factors account for these estimated changes.

Three interagency committees on which the Council has had a major role will complete their work in fiscal year 1980 or early in fiscal year 1981: Environmental Data and Monitoring Task Force; Toxic Substances Strategy Committee; and the Agricultural Lands Study. Although, as noted in the Justification Statement, the Council expects that it will play a major role in interagency committees in fiscal year 1981, we do not anticipate chairing committees of the scope and size of these.

We also expect that the scope and extent of our activities in implementing the NEPA regulations will be less in fiscal year 1981 than it will be in fiscal year 1980. By fiscal year 1981 all agencies should have promulgated their implementing procedures and the Council's extensive follow-up activities, for ensuring implementation of the regulations by the agencies, including the development of appropriate guidance, will be reduced.

As a result, we are according higher priority to the efforts of the other two decision unit areas and allocating more funds to support the activities in these areas.

INCREASE IN PERSONNEL COMPENSATION

Mr. SABO. Page 8 indicates the Council is requesting an additional $208,000 in 1981 for personnel compensation and benefits. Table A, following page 10, provides some details. Last year's justifications reflected $294,000 in 1979 and $340,000 in 1980 for temporary positions. Actual 1979 was $485,000, and the 1980 current estimate is $497,000. At the same time the number of temporary positions is remaining constant at 17.

What accounts for this tremendous change, and why do you need an additional $87,000 for temporary positions in 1981?

Mr. STROHBEHN. As we have indicated, we are increasing the use of our temporary positions for doing substantive work at the Council, which means these people are professionals, Ph. D.'s, lawyers. We decided to make better use of our temporaries, after the 20 percent reduction, because they were primarily students, interns, GS–4's for example.

Mr. SABO. How long does the average person stay with you who is in a temporary position?

Mr. STROHBEHN. Each person is appointed for a term not to exceed twelve months. At the end of each year, we reassess whether or not that person should be reemployed or not. If we decide to reemploy them again we would place them permanently if a position was available or retain them as a temporary. The longest time so far that anyone has been with us in a temporary status has been about 1½ years, I guess.

Mr. SABO. A very interesting statement appears on page 8 in connection with the personnel compensation increase.

"The difference is also due in part to our expectation that we may need to pay greater than normal amounts for terminal leave payments due to personnel shifts that may accompany a new term."

I would have thought the President's own Executive Office would be more optimistic than this.

Mr. STROHBEHN. That depends on how you interpret it. In terms of tenure at the Council in 1977 new people came in. The time in government service bears up for so long, then there tends to be a time when many people leave, and not necessarily for any reasons of change in Administration.

Mr. SABO. For the record, provide additional details on the $208,000 increase for personnel compensation. For example, how much for these greater than normal terminal leave payments, how much for step increases, how much for promotions, et cetera?

[The information follows:]

PERSONNEL COMPENSATION AND BENEFITS

For fiscal year 1981, the Council's budget estimate for total personnel compensation and benefits is $2,071,000; this is $208,000 higher than the fiscal year 1980 budget estimate. The Council is authorized 32 permanent and 17 temporary positions. The reasons for the budget estimate increases for each category of personnel expenses listed in the Budget Justification Statement follow.

For permanent positions, the fiscal year 1981 budget estimate is $74,000 higher than fiscal year 1980. This amount is to provide for federal cost-of-living increases, step increases, and promotions for the 32 staff members holding permanent positions. Of this amount we estimate that about $23,000 will be for step increases and promotions.

For temporary positions, the fiscal year 1981 budget estimate is $87,000 higher than fiscal year 1980. This increase is due to the Council's policy of employing in temporary positions higher graded professionals with advanced degrees (Ph.D.s and J.D.s) and relevant work experience, who qualify as GS-14's and GS-15's, for example, rather than only lower graded personnel such as GS-14's. As a result, our temporary personnel costs are significantly higher than in past years when this was not the policy. We expect to complete the implementation of this policy in fiscal year 1981 and to achieve what we believe is a properly balanced, well-qualified professional staff with appropriate diversity of professional skills. This imaginative use of CEQ's temporary positions has enabled us to meet more effectively and efficiently our statutory responsibilities and to provide more authoritative advice to the President, the Congress, and the public. The $87,000 estimate is based on the need to employ one highly skilled professional and to meet cost-of-living and other increased expenses for temporary personnel.

For reimburseable detailees, overtime, and lump sum terminal leave payments, the fiscal year 1981 budget estimate is $28,000 higher than fiscal year 1980. Our reimburseable detailee expenses are expected to increase as a result of cost-of-living pay increases and our having two detailees for the full year as contrasted with fiscal year 1980 when one of the detailees arrived at the mid-year mark. This accounts for about $22,000 of the $28,000 estimated increase. In fiscal year 1981 we estimate that our overtime costs may increase slightly (about $500 or so) in order to meet production and printing deadlines. If these deadlines are met in a timely manner, this will enable us to realize savings in printing costs that greatly exceed the increased overtime costs.

In fiscal year 1981 we estimate that lump sum terminal leave payments will increase over fiscal year 1980. Historically the members of CEQ's professional staff have stayed at the Council for approximately three years. In fiscal year 1981, it appears that many of the Council's staff will have been with the Council longer than three years. Thus, more than the usual number of the Council's professional staff may return to jobs in the private sector from which they came or to other private sector jobs such as consulting. The fact that fiscal year 1981 is the first year of the new term for the Administration may also affect Council staffing, wholly apart from specific election results. A new term is simply an obvious time when people may choose to pursue new opportunities. Lump sum terminal leave payments in fiscal year 1979 amounted to $11,500 and we estimate that this amount may be $17,000 to $18,000 in fiscal year 1981. Given the small base and the size of a lump sum leave payment for a professional staff person (about $2,000), it does not take many people to affect expenditures by a significant percentage amount. OMB cleared our Budget Justification Statement and understand the planning implications of our budget estimates. CEQ has no knowledge about OMB's views on the justifications of other agencies for their budget submission.

INCREASE IN SLUC

Mr. SABO. On page 9, I notice you have estimated a $39,000 increase in 1981 for standard level user charges. Your 1979 SLUC charge was $19,000 less than estimated, however. What accounts for the 1979 variance? What is the basis for the 1981 increase?

Mr. STROHBEHN. The amount less than the estimate was due to the Council on Wage and Price Stability which was increased dramatically last year. The Executive Office gave them major access to space in the New Executive Office Building and we gave up space to make room for their staff. We lost that much space for that amount of time.

Mr. SABO. Did you operate less efficiently?

Mr. STROHBEHN. I would say it did cause some inefficiency.

Mr. SPETH. If you have some time in our area, come see our digs on the fifth floor of the Executive Office Building. We are piled on top of each other.

Mr. STROHBEHN. We have talked with GSA as to the costs for the space assigned to us in the New Executive Office Building and that

is the increase. It is GSA's estimate of the increase of CEQ's annual costs.

Mr. SABO. Does it evolve into increased space?

Mr. STROHBEHN. No, excuse me. It does include a slight increase. When they give us back the space, the White House Historical Society was next door to our offices and they gave it to us. It is a slight increase in space.

FISCAL YEAR 1979 EQUIPMENT PURCHASE

Mr. SABO. Turn to table A. In 1979, $45,000 was obligated for equipment purchases, compared with $7,000 planned. Why were actual obligations so much greater than planned?

Mr. STROHBEHN. Part of that was again, the major part was occasioned by the cramming of all of us from our prior space into this small space where the equipment we had was not able to handle the staff. We had to get partitions. For example, half our staff was put in the hallway. So they would have to sit behind these partitions. The "Class A" desks would not fit——

Mr. SABO. For the record, indicate the equipment obligations by month, for that year?

[The information follows:]

The cost breakdown is as follows: October 1978, $33,590; February 1979, $573 and March 1979, $10,873.

In October 1978, the Council was forced to relinquish a large portion of its office space to the Council on Wage and Price Stability whose staff was dramatically increased in a very short time in order to implement the President's anti-inflation program that had just been announced. Thus, the Council was forced to relocate the staff occupying that space into its existing space, including an area that had been reception areas. To accomplish this, it was necessary for the Council to order furniture components, desks, and interlocking acoustical panels which could fit in the small space and which would provide the best working conditions possible under the circumstances. This was a one time expense for the Council and the total cost involved was spread over the several months that it took to accomplish this.

INCREASE IN OTHER SERVICES

Mr. SABO. Also on on table A, I notice that other services in 1979 were $376,000, one-half the planned $753,000. Other services in the 1980 current estimate have been revised to $446,000 from $720,000 in the original submission. This is related to the increase for temporary positions and represents a major policy change for the Council.

Does the proposed change limit the Council's flexibility or ability to respond quickly to the President on a wide range of issues?

Mr. STROHBEHN. A major change has not been effected. We testified last year that we were increasing our use of temporary personnel by employing people more highly qualified. It is just that these figures are catching up with our estimates. We do not believe this affects our ability to respond to the President.

Mr. SABO. It does reflect a rather significant change from what you have indicated in your past budget estimates.

Mr. STROHBEHN. That is right. This process of bringing people on was one which we testified to and gave our best estimates. I think we have gotten better at figuring what these exact costs are and we wanted to let you know what they are, precisely.

Mr. SABO. In past years the Council has indicated the extreme importance of the special studies funds. By halving those amounts, the clear implication is that the current Council does not place nearly as much emphasis on contracted studies. Is that correct?

Mr. SPETH. Mr. Chairman, we have tried to, as I think Executive Director Strohbehn has indicated, bring the figures for studies versus personnel into line with what we think we ought to be doing. We think we have done that now, and we do not anticipate the types of shifts that you have seen in the past. The point is, we feel quite the contrary, that the studies are extremely important. However, we do feel that it was appropriate to do what we have done, which was to shift resources relatively from studies to personnel. We think we are better able to respond to the President, to give him advice, to work with other agencies in the environmental area with this balance than we were in the past, had we continued the previous division.

NONFUEL MINERALS

Mr. SABO. Are you familiar with the work the Office of Science and Technology Policy is doing in the area of non-fuels minerals? In 1979, they funded a $58,000 contract with Resources for the Future to study non-fuel minerals. How does the Council's effort in this area compare with that of the OSTP?

Mr. SPETH. We have a statutory obligation which is in Section 709 of the 1977 Surface Mining Act to undertake a major study of non-coal mining and reclamation with the National Academy of Sciences. We contracted for this study in 1978 with the National Research Council of the National Academy. They just completed the study a few months ago and have given it to us. We have been going around holding public hearings and getting reaction to the recommendations in that report. If you would like more detail on that. Mr. Robert Smythe, our Senior Staff Member for Natural Resources, can provide it.

Mr. SABO. What is the cost of the study?

Mr. SMYTHE. There are two related efforts here. First let me come back to the one of the work done by OSTP. That was the Domestic Policy Review of nonfuel minerals, conducted at the President's direction by the Interior Department and with membership from a Policy Coordinating Committee of a number of agencies, including the Council. The Council participated in the organization of the study, oversaw and provided critiques of some papers developed by other Federal agencies, particularly the EPA. We did not invest our funds in that study. OSTP's participation was similar; however, they felt in one area they wanted additional information. They conducted a small contract study of their own.

The second effort, which is related but separate, is a review of the potential applicability of the requirements of the Coal Surface Mining Act to achieve reclamation of minerals other than coal. For that, the Council has the lead. We were directed, in fact, by section 709 of the Surface Mining Act of 1977, P.L. 95–87, to conduct an in-depth study of this potential applicability and of the existing technology for surface mining reclamation. The statute directed that we conduct the study with the National Academy of Sciences and

at the conclusion, submit regulations for reasonable and effective regulation of mining and reclamation for minerals other than coal.

So, we did contract with the National Academy of Sciences. We needed and sought the assistance of two other major agencies, the EPA and the Department of the Interior. Although that section of the Act authorized additional expenditures to the Council to pay for the study, no appropriation was made. Instead, the study was funded primarily by contributions from EPA and the Department of the Interior, with some contribution from the Council as well.

The contract study with the Academy is a cost contract not to exceed $450,000. The Council in addition contributed approximately $40,000 of our own funds to employ an expert consultant to work with us on the study, to oversee the role of the National Academy, to assist in hearings and in developing recommendations which follow.

Mr. SPETH. Thank you.

PERSONNEL COMPENSATION

Mr. SABO. What lapse rate was assumed in developing personnel compensation requirements for 1981? Do you have that or will you submit it for the record?

Mr. DELANEY. Between one and two percent.

Mr. SABO. For the record indicate the number of positions occupied and the 1980 total obligations to date, by month.

[The information follows:]

1980 OBLIGATIONS

During fiscal year 1980, the Council had all permanent and temporary positions occupied for each month from October 1, 1979 through February 1, 1980, with the exception of one secretarial vacancy for a period of three weeks.

Obligations by month for the Council for fiscal year 1980 are as follows:

October	$138,206
November	140,732
December	191,046
January	125,487
February	136,290
Total	$731,761

IMPACT OF THE USE OF AGRICULTURAL PRODUCTS FOR FUEL PURPOSES

Mr. SABO. Going back to one of the areas you mentioned earlier—the loss of farm acreage and topsoil for reasons other than urbanization or highways. What will the impact be to our farmlands if we do substantially increase our use of gasohol and agricultural products for fuel purposes? Have you looked at that problem seriously?

Mr. SPETH. People have looked at it in a minor-league-type way and we have to look at it in a major-league way. There is only so much biological material out there. I think the competition for biological materials will go up. There may be someone here who wants to comment on that.

Mrs. YARN. I will. I think it is one of the problems we need to address, but we do not have enough information about gasohol. It

is frightening to me to know we are moving in a direction of using a tremendous amount of our grain and agricultural residues for gasohol. This seems to be what the Agriculture Department and others are promoting. It is a problem we need to look at very seriously. If we go in the direction of gasohol, we will have to find other ways to replace the organic matter in the soil. If we deprive the soil of all the residue that usually goes back into it, we will have to build soil in other ways, which may mean we will have to have incentive programs for the farmers to use the soil in such a way to replace that organic matter. It is a new idea that needs to be addressed. We are not doing a study on it, but I would like for us to.

TOXIC SUBSTANCES AND STRATEGY

Mr. SPETH. You raised earlier the question as to our involvement in the toxic area. This has been a ten-year effort of Mr. Harris working in that area in Washington and California. I want to make sure Bob gets a chance to comment on that.

Mr. HARRIS. Thank you, Gus.

The big effort, as the chairman has indicated, over the recent past months has been completing the Toxic Substances Strategy Committee report which will be a document in which some 18 agencies participated. It will be a document we will be proud of. We are steadily more concerned at the Council with two areas. The first is hazardous waste, which we did not realize until a few years ago posed the tremendous problem it does. 50 percent of the Nation uses ground water for drinking water purposes. We now see that resource being seriously threatened all over the country. There is not a day that goes by that there is not a major report in the newspaper indicating ground water contamination resulting in loss of supply. These threats do mean loss of supply. They are of such magnitude that treatment is not possible. More often than not, there is no technological fix.

Working and sorting out that problem and developing a national strategy for protecting ground water, not only from hazardous waste, but other activities is one area we will be focusing attention on over the next year.

The other is the noncancer effects of chemicals. Over the decade of the 1970s, we have focused almost all our attention, certainly publicly on the effect of chemicals on cancer rates. Indeed the evidence we have accumulated and which will be presented in the strategy committee report underscores the need to continue that thrust. We have learned recently of our increase in incidence rates between 1969 and 1976 which we did not know existed prior to the study. However, the potential problems of reproductive and behavioral effects of chemicals have fallen through the cracks. I think the Love Canal, the experience in Lathrop with the pesticide workers and sterility, the Love Canal experience with birth defects, miscarriages and behavioral anomalies, the experience with anesthesiologists, with chlorine and other chemicals in the workplace, suggests that these effects, while perhaps more difficult to measure, nonetheless may be as important, maybe more important than the cancer effects. This will be a major effort of ours over the next year.

Mr. SABO. Is there anything else you want to add? If not, thank you all for being here today. The Council's budget justification will be inserted in the record at this point. The Committee stands adjourned.

[The justification follows:]

TABLE OF CONTENTS

INTRODUCTION		1
	A. Authorization Authority	1
	B. CEQ FY 1981 Budget Estimate	1
I.	SUMMARY AND HIGHLIGHTS OF BUDGET ESTIMATE	2
	A. Introduction	2
	B. Council Organization and Responsibilities	3
	C. Summary of FY 1981 Council Program	4
	1. Environmental Policy Analysis and Development	4
	2. Interagency Coordination and Environmental Quality Improvement Program	5
	3. Environmental Data Assessment and Acquisition	7
	D. Budget Estimate Comparisons	7
	1. Major Differences: FY 1981 v. FY 1980	7
	2. Detailed Comparisons of FY 1980-FY 1981 Budget Estimates	8
	3. Program Improvements	10
II.	FUNCTIONS AND OPERATIONS OF THE COUNCIL: CURRENT ACTIVITIES AND ACCOMPLISHMENTS	11
	A. Environmental Policy Analysis and Development Decision Unit	11
	B. Interagency Coordination and Environmental Quality Program Decision Unit	13
	C. Environmental Data Acquisition and Assessment Decision Unit	17
	D. Council Staff Structure	19
III.	ZERO-BASE BUDGET CONSIDERATIONS	19
	A. Decision Units	19
	B. Major Changes in Council Program Responsibilities	20

TAB A:	HIGHLIGHTS OF CEQ ACTIVITIES: 1977-1979
TAB B:	STUDIES SPONSORED BY THE COUNCIL ON ENVIRONMENTAL QUALITY FY 1979
TAB C:	PROPOSED STUDIES BY THE COUNCIL ON ENVIRONMENTAL QUALITY FY 1981
TAB D:	DEVELOPMENT OF NEPA REGULATIONS
TAB E:	UPGRADE: Resources and Expenditures
TAB F:	PROGRESS REPORTS: Agency Implementation of CEQ NEPA Regulations and E.O. 12114

INTRODUCTION

This justification statement is comprised of three sections. The first presents a summary and the highlights of the Council's FY 1981 budget estimate, a discussion of the major activities which we intend to pursue in FY 1981, a table which sets out in detail the Council's budget estimates or actual expenses by object classification for FY 1979, FY 1980, and FY 1981, an explanation of the differences between FY 1980 and FY 1981 budget estimates, and a discussion of program improvements.

The second section provides information on the functions and operations of the Council and summarizes our current activities and accomplishments. The third section discusses key considerations which underlie the Council's zero-base budget process.

Attached to this statement are several appendices, which include: (i) a list of FY 1981 Proposed Studies; (ii) a list of FY 1979 studies.

A. Authorization Authority

The Council on Environmental Quality and the Office of Environmental Quality are authorized appropriations of $1,000,000 under P.L. 91-190, as amended, and appropriations of $3,000,000 under P.L. 91-224, as amended.

B. CEQ FY 1981 Budget Estimate

The FY 1981 Budget Estimate for the Council on Environmental Quality and the Office of Environmental Quality is $3,436,000. Personnel ceilings for FY 1981 are 32 permanent and 17 temporary personnel. A detailed tabular presentation of CEQ's budget estimate by object classification is presented in Table A just after page 10. Table B provides a tabular presentation of CEQ's personnel by GS level.

I.

SUMMARY AND HIGHLIGHTS OF BUDGET ESTIMATE

A. Introduction

The FY 1981 budget estimate for the Council on Environmental Quality and Office of Environmental Quality is $3,436,000. This $310,000 increase over the Council's FY 1980 budget provides the Council with resources to meet a part of the nondiscretionary increases imposed by other government agencies and the private market. Because the inflation rate exceeds this increase, CEQ will have to achieve FY 1981 program improvements similar to those discussed at page 10 to maintain our operations at their current level.

Two sets of facts underscore the effectiveness and efficiency with which CEQ uses its resources. The first is the five-page document attached as Tab A: "Highlights of CEQ Activities: 1977-1979". We believe this reflects an impressive record of accomplishment. The second is the history of the amount of funds that we expired over the 1978-1979 period. In each year the amount was less than one half of one percent which has resulted from carefully planned expenditures over the course of the entire fiscal year. CEQ leads the Executive Office of the President (EOP), and probably most federal agencies, in expiring the smallest percentage of appropriated funds. In sum, we have exercised prudent management of our scarce resources, used them effectively, and produced consistently good work. This we will do with the appropriations we are requesting for FY 1981.

The Council's FY 1981 budget is designed to enable the Council to meet three key statutory mandates:

- to develop and recommend national policies which foster and promote the improvement of environmental quality to meet the health, natural resource, economic, social and other requirements and goals of the nation;

- to assist federal agencies in the implementation and coordination of programs and activities which protect and improve environmental quality; and

- to gather and analyze information relevant to conditions and trends in the quality of the environment and to compile and submit to the President studies relating to such conditions and trends.

The Council's principal responsibility is to provide the President, the Executive Office of the President, and the Congress with timely and authoritative advice on key policy issues. While the key policy issues of FY 1981 cannot be predicted now, the Council can provide a fairly accurate picture of our FY 1981 program plans by presenting a general outline of what the Council expects to accomplish in FY 1981 coupled with examples of FY 1979 accomplishments in similar activities. Before discussing these activities, a brief outline of the Council's structure and statutory responsibilities is presented to provide a context for our budget estimate.

B. Council Organization and Responsibilities

The Council consists of three Council Members appointed by the President, one of whom the President designates Chairman. The staff consists of employees from a broad range of professional disciplines including physics, ecology, economics, toxicology, and law, and who include administrative and other support staff.

In addition to providing the President with policy advice, the Council is responsible for maintaining policy oversight of the Federal Government's implementation of the National Environmental Policy Act (NEPA). Two important Council NEPA responsibilities are to promulgate and maintain regulations implementing the procedural provisions of NEPA and to assist federal agencies to resolve disputes about environmentally unsatisfactory proposals referred to the Council pursuant to NEPA, Section 309 of the Clean Air Act, and the Council's regulations.

The Council has a number of other responsibilities derived from statutory objectives, such as co-chairing with EPA the Interagency Toxic Substances Data Committee, and from directives by the President, such as serving as Executive Secretary of the Acid Rain Coordination Committee established by the 1979 Environmental Message. The Council also has the responsibility to oversee implementation of the Environmental Messages issued by the President. Each year, as required by NEPA, the Council prepares the President's Annual Environmental Quality Report to the Congress and several reports on important environmental quality issues. These issues involve: natural resources, including parks, wilderness, water resources, and agriculture; wildlife; energy; environmental health; toxic substances; pollution; environmental data and monitoring; economics; and human settlements, including the urban and rural environment.

Besides preparing reports for the Congress as required by statute, the Council responds to Congressional inquiries and testifies before committees. The Council also maintains close liaison with the public.

The discussion of the Council's FY 1981 program which follows is based upon CEQ's three decision units, which correspond to the Council's basic statutory mandates set out above:

- o Environmental Policy Analysis and Development
- o Interagency Coordination and Environmental Quality Program Improvement
- o Environmental Data Acquisition and Assessment.

A discussion of how these decision units were developed is presented in Section III at page 19, where important considerations that went into out zero-base budget effort are set out.

C. Summary of FY 1981 Council Program

As noted above, a general picture of the Council's FY 1981 program can best be portrayed by indicating proposed programmatic activities and highlighting FY 1979 accomplishments in those areas. This is presented below for each decision unit.

1. Environmental Policy Analysis and Development

FY 1981 Budget Estimate:

- o $1,770,000
- o 16 permanent staff
- o 9 temporary staff

In FY 1981, the Council will publish its 12th Annual Environmental Quality Report, aided, in part, by resources and materials provided by other agencies. The Council will provide the President with weekly reports and will prepare memoranda on important issues on a regular basis for the President and the EOP. The Council will oversee implementation of Presidential directives, such as those issued pursuant to an Environmental Message, and will regularly participate on White House task forces. In addition, the Council will prepare special reports and provide the President and the EOP with independent policy advice. The Council will develop or assist other agencies in developing Messages to Congress, legislative proposals, and administrative initiatives. The Council will provide Congress with advice and information through testimony and responses to inquiries. Finally, the Council will develop and manage contract studies and publish reports.

60-531 O - 80 - 68

Examples of Council efforts and accomplishments in FY 1979 in these areas include the following: we developed and prepared the President's 1979 Environmental Message and the Administration's environmental program as set out in the Message (Attached as Tab G); we played a major role in developing Administration policies involving environmental concerns such as the June 20, 1979 Solar Message; Oil Spill and Hazardous Waste "Superfund" legislation; July 15, 1979 oil import reduction program; April 5, 1979 energy message; regulatory reform program, including participation in the RARG process chaired by CEA; Alaska land designations; and RARE II wilderness area designations. The Council oversaw implementation of the President's 1977 and 1979 Environmental Messages to ensure performance of the President's directives, focusing on federal agency compliance with the five 1977 Executive Orders and the twenty-four 1979 directives. The Council assisted in developing, coordinating, and implementating the President's directive to improve U. S. performance of its obligations under the Convention for Trade in Endangered Species. In 1979 the Council published reports on: increasing energy productivity (Good News About Energy); Our Nation's Wetlands; Offroad Vehicles on Public Lands; Wildlife in America; and A Survey of State Programs to Preserve Farmland.

In FY 1979, Council Members and staff presented testimony to Congressional committees on about 15 occasions on such matters as energy conservation and the environmental effects of developing synthetic fuels. The Council and its staff developed and managed about seven major independent policy analysis studies (See Tab B). Finally, in FY 1979, the Council Members and staff presented speeches and participated in conferences or panels on about 80 occasions.

2. Interagency Coordination and Environmental Quality Improvement Program

FY 1981 Budget Estimate:

- o $974,000
- o 11 permanent staff
- o 6 temporary staff

In FY 1981, the Council will chair several key interagency committees similar to its 1978-1980 role on the Agricultural Lands Study, the Toxic Substances Strategy Committee, the Environmental Data and Monitoring Task Force, the Integrated Pest Management Coordinating Committee, and the Interagency Toxic Substances Data Committee. The Agricultural Lands Study, which is cochaired by USDA and CEQ, is addressing the important question of the availability and the conversion of agricultural land and will submit its final report to the President in January 1981. The Toxic Substances Strategy

Committee and the Environmental Data and Monitoring Task Force will complete their final reports and submit recommendations to the President early in 1980. The Integrated Pest Management Coordinating Committee will implement the President's 1979 Environmental Message IPM directives which require increased use of IPM measures by federal agencies. The Council is the Executive Secretary of the Acid Rain Coordination Committee and has principal responsibility for developing the ten-year acid rain research plan and overseeing its implementation.

In FY 1981 the Council will play a lead role in several other important interagency committees similar to its 1978-1979 role in the Solar Domestic Policy Review, Nuclear Waste Management Task Force, Resource Conservation Committee, and Non-Fuels Minerals Policy Coordinating Committee. All of these committees, except the Non-Fuels Minerals Policy Coordinating Committee, have completed final reports, with policy recommendations, which were submitted to the President or to the Congress. In FY 1979, the Council also participated in the Energy Coordinating Committee, the Task Force on Export of Hazardous Substances, and the Task Force on Tropical Forests. In FY 1981 the Council may convene ad hoc interagency task forces to deal with discrete, mid-level policy problems such as the current task forces coordinating implementation of NEPA for federal housing programs and for federal water and sewer programs in rural areas.

In FY 1981 the Council will continue to meet its important responsibility to oversee implementation of the National Environmental Policy Act (NEPA). The Council's NEPA regulations became effective July 30, 1979 (Tab D provides detailed information on this activity which spanned almost two years and involved all CEQ staff members.) The U.S. Supreme Court in its June 1979 decision in Andrus v. Sierra Club relied on the Council's NEPA regulations as providing authoritative requirements for the application of NEPA to agency actions. And in September 1979, OMB in its review of federal agency regulatory reform activities commended the Council for its NEPA regulations, noting in particular that they are written in plain, understandable English and that they are designed to reduce paperwork and delay.

In overseeing agency implementation of NEPA, the Council will seek to ensure that the threefold objectives of the NEPA regulations are met -- reducing paperwork, reducing delays, improving decisions. In FY 1981 the Council will provide oversight of agency implementation of Executive Order 12114 (environmental reviews of agency actions outside the U.S.). Tab F contains copies of the most recent progress report -- the sixth -- on agency actions to implement the Council's NEPA regulations and the most recent progress report -- the third -- on agency actions to implement E.O. 12114. The Council will respond to Department of Justice requests for advice on NEPA ~~i~~ssues in cases being handled by the Department. Finally, in FY 1981 the Council will process and provide recommendations on about four to six agency referrals under NEPA and Section 309 of the Clean Air Act of environmentally unsatisfactory proposals, similar to the referrals of the Fire Island to Montauk Point, N.Y., beach erosion control and hurricane control project and the Hendry County flood control project in Florida.

3. Environmental Data Assessment and Acquisition

FY 1981 Budget Estimate:

- o $692,000
- o 5 permanent staff
- o 2 temporary staff

In FY 1981 the Council will continue to monitor and evaluate agency data collection and analysis programs, and to develop ways to improve these programs, such as our 1979 actions to improve the water quality data acquisition and assessment programs. In FY 1981 the Council will prepare detailed quantitative analyses of environmental issues -- such as air and water quality and soil erosion -- using the CEQ-developed UPGRADE interactive user-oriented computer system. These analyses will be used in the Annual Report (about 75 were used in the 1979 Annual Report) and in special reports and will support specific policy assessments for CEQ, the EOP, and other agencies. In FY 1981 CEQ will work with other agencies to make their environmental data available for analysis by CEQ and others. Finally, in FY 1981 the Council will issue regular reports on environmental statistics, on environmental indicators, and on trends in environmental quality, such as the 1979 publication, Environmental Statistics--1978.

D. Budget Estimate Comparisons

1. Major Differences: FY 1981 v. FY 1980

As noted above, the Council's FY 1981 budget estimate seeks an increase of $310,000 over FY 1980 in order to meet nondiscretionary expenses imposed by other government agencies and the private market. Table A after page 10 presents a tabular budget presentation that identifies the differences between the Council's FY 1981 and FY 1980 budget estimates. Table B, which follows, lists CEQ personnel by GS level. A detailed explanation of the reasons justifying these differences is provided on pages 8-10. The major differences are:

- o an increase of $208,000 in personnel costs to provide for the federal cost-of-living pay increase (for CEQ, the cost-of-living pay increase covers FY 1980, not FY 1981; CEQ has not submitted supplemental requests for routine cost-of-living increases), step increases, and other personnel costs.

- o an increase of $80,000 to cover expenses that CEQ must bear due to increases imposed by other federal agencies and price increases for goods and services we acquire from the private sector. Specifically, CEQ will face:

-- $39,000 increase in GSA rent
-- $15,000 increase in U.S. Post Office charges
-- $20,000 increase in GPO printing costs
-- $ 6,000 increase in expenses for supplies and materials, due to inflation

o an increase of $24,000 for studies

o a decrease of $2,000 for travel, which represents a real reduction of about $9,000 in light of inflation

2. Detailed Comparisons of FY 1980-FY 1981 Budget Estimates

The differences between the Council's FY 1980 and FY 1981 budget estimates are discussed below.

(i) Personnel. Expenses for total personnel compensation and benefits are estimated to increase $208,000 over FY 1980 in order to cover federal cost-of-living increase, promotions, step increases, increased use of temporary personnel who have professional qualifications and experience, increased use of reimbursable detailees, and increased overtime costs of the support staff. The increase between FY 1981 and FY 1980 is due primarily to our continued effort to use authorized temporary positions more effectively by employing highly qualified experienced professionals rather than part-time students. The difference is also due in part to our expectation that we may need to pay greater than normal amounts for terminal leave payments due to personnel shifts that may accompany a new term.

(ii) Travel. Expenses for travel are estimated to be reduced for FY 1981 by $2,000 which, in real terms accounting for inflation, may be about $9,000. This decrease reflects the Council efforts of the past three years to reduce travel, i.e.

Fiscal Year	Travel
1976	140 (includes transitional quarter)
1977	94
1978	40
1979	51

The reduction is the direct result of continuous, top level management oversight of travel authorization requests to ensure that travel is taken only for clearly important tasks. In addition, when Council Members or staff are invited to speak at conferences and similar occasions, the Council's policy is that the Council should not pay for such trips unless the inviting organization cannot pay travel expenses and participation is clearly of significance for meeting priority Council objectives.

(iii) Rent, Postage, Printing, Supplies and Materials. The FY 1981 budget estimate provides an $80,000 increase over FY 1980 to cover higher costs imposed by other agencies and inflation. Specifically, we estimate a $39,000 increase for rent charged by GSA, a $15,000 increase in postage charged by the U. S. Postal Service, and a $20,000 increase in printing costs charged by GPO. For goods and services acquired from nongovernment sources, such as rental fees for communications facilities, word processing equipment, and paper copiers, the FY 1981 budget estimate provides for only a 2.2 percent increase over FY 1980. Thus, because the rate of inflation is likely to be higher, to maintain the Council's current level of operations, the Council will have to achieve significant program improvements.

(iv) Other Services. The estimated FY 1981 increase over FY 1980 for studies is $24,000 (about five percent higher than FY 1980) which, due to inflation, is likely to mean that in constant dollars CEQ would be spending less on studies in FY 1981 than is estimated for FY 1980. The FY 1981 budget estimate of $470,000 for "Other Services" is well below the $635,000 that CEQ had in FY 1978* and the even higher levels of previous years, i.e.:

Fiscal Year	Other Services*
1975	643,000
1976	925,000 (includes transitional quarter)
1977	761,000
1978	635,000

If CEQ is to meet its statutory mandate "to conduct investigations, studies, surveys, research, and analyses relating to . . . environmental quality," CEQ must have sufficient research funds available. The studies the Council conducts are critical to enabling it to provide expert, timely, independent, and authoritative advice to the President, the Executive Office of the President, and the Congress. In addition, the Council requires study funds to maintain its role as an effective catalyst of important research performed jointly with other agencies.

* Figures adjusted to remove from "Other Services" category the portion of appropriations received each year from 1975 through 1978 under the Non Nuclear Energy R & D Act of 1974 that was expended for "Other Services".

An excellent example of the significance and benefits of Council studies is the Council's development of the concept of integrated pest management over the past seven years. This began with the initial 1972 report which brought national attention to the issue, and was extended by the President's Integrated Pest Management initiative in his 1979 Environmental Message and the recent detailed report which is scheduled for release in March 1980. The Council's IPM efforts have been supported by CEQ study funds along with support from EPA and the Department of Agriculture.

3. Program Improvements

The discussion above underscores the importance of our achieving program improvements in order to maintain the Council's current level of operations within the FY 1981 budget estimate resources because:

- o the FY 1981 increase in funds for the purchase of non-government goods and services is only about two percent.

- o the FY 1981 increase in funds for government-provided goods and services is expected to just meet these needs.

The principal method by which the Council expects to maintain its record of accomplishment is by careful management of its resources. This includes establishing Council priorities early each fiscal year and obligating funds in a planned, systematic manner during the course of the year.

In addition, each year the Council seeks to improve its operations so that it can use its scarce resources more efficiently and effectively. Examples of FY 1979 program improvements follow.

1. Obtained for brief periods two part-time detailees from agency management intern programs, thereby gaining staff assistance for specific CEQ tasks.

2. Obtained magnetic card word processors/typewriters for all staff secretaries and made the secretarial work stations more efficient.

3. Computerized CEQ mailing lists to eliminate duplication and to permit mailings to specific sets of people rather than having to send documents to everyone on the mailing list for each mailing or to sort out by hand the specific people and groups to receive the documents.

4. Transferred administration of our petty cash fund to the Office of Administration.

Table A

PRELIMINARY 1981 BUDGET ESTIMATE FOR SALARIES AND EXPENSES
SUMMARY OF OBLIGATIONS BY OBJECT FOR FY 1979, FY 1980, FY 1981

		Actual FY 1979	Estimate FY 1980	Estimate FY 1981	Difference FY 1981/80
A.	Personnel Compensation and Benefits				
	Permanent Positions	$1,079,000	$1,088,000	$1,158,000	$ 74,000
	Temporary Positions	485,000	497,000	584,000	87,000
	Reimbursable Detailees, Overtime, Terminal Leave	144,000	140,000	168,000	28,000
	Personnel Benefits	124,000	138,000	161,000	23,000
	Total	$1,832,000	$1,863,000	$2,071,000	$208,000
B.	Travel, Rent, Supplies & Printing				
	Transportation of Persons	51,000	72,000	70,000	(2,000)
	Transportation of Things	2,000	2,000	2,000	0
	Space Rental	199,000	241,000	280,000	39,000
	Communications and Equipment Rental	169,000	185,000	200,000	15,000
	Printing and Reproduction	237,000	230,000	250,000	20,000
	Supplies and Materials	98,000	76,000	81,000	5,000
	Equipment Purchases	45,000	11,000	12,000	1,000
	Total	801,000	817,000	895,000	78,000
C.	Other Services: Includes Contracts for Studies	376,000	446,000	470,000	24,000
D.	Total Direct Obligations	3,009,000	3,126,000	3,436,000	310,000
E.	Amount of Appropriations Expired, FY 1978	17,000*			
F.	Total Appropriation	3,026,000	3,126,000	3,436,000	310,000

* This was the amount expired as of September 30, 1979. Additional bills which have been presented for payment since September 30, 1979 have reduced this amount to $6,000.

Table B

COUNCIL ON ENVIRONMENTAL QUALITY AND
OFFICE OF ENVIRONMENTAL QUALITY

Personnel

	1979 actual	1980 est.	1981 est.
Executive level II	1	1	1
Executive level IV	2	2	2
Subtotal	3	3	3
GS-18	1	1	1
GS/GM-15	5	5	5
GS/GM-14	3	4	4
GS/GM-13	1	1	1
GS-12	1	---	---
GS-11	1	2	2
GS-10	2	1	1
GS-9	---	1	1
GS-8	2	1	1
GS-7	3	3	3
Subtotal	19	19	19
Ungraded	10	10	10
Total permanent positions	32	32	32
Unfilled positions, end of year	-1	---	---
Total permanent employment, end of year	31	32	32

II.

FUNCTIONS AND OPERATIONS OF THE COUNCIL: CURRENT ACTIVITIES AND ACCOMPLISHMENTS

The Council's assigned duties and responsibilities are set out in the National Environmental Policy Act (NEPA) (P.L. 91-190), the Environmental Quality Improvement Act of 1970 (P.L. 91-224), Executive Order No. 11514, as amended by Executive Order No. 11991, and Reorganization Plan No. 1 of 1977.

The Council consists of three Council Members appointed by the President with the advice and consent of the Senate, one of whom is designated Chairman by the President.

The three key statutory mandates of the Council have been set out at page 2 above and may be summarized as:

- o environmental policy analysis and development;
- o interagency coordination and environmental quality program improvement;
- o environmental data acquisition and assessment

As discussed in detail below and in the zero-base budget discussion in Section III, the Council translated these three mandates into specific objectives for the Council's three decision units.

A. Environmental Policy Analysis and Development Decision Unit

FY 1981 Budget Estimate:

- o $1,770,000
- o 16 permanent staff
- o 9 temporary staff

1. Basic Objectives

In order to meet its statutory responsibilities, the Council's basic environmental policy analysis and development objectives are:

- o to provide the President and the Executive Office of the President with policy advice, including relevant analyses and data
- o to provide the Congress with advice and recommendations in response to requests

- o to prepare and submit to the President and the Congress the Annual Environmental Quality Report

- o to review and assess major federal agency programs and to recommend changes where appropriate in order to improve environmental quality

- o to develop the President's environmental program, including the preparation of legislation, environmental messages for the Congress, and administrative policy initiatives

- o to conduct independent studies and analyses of key environmental quality issues and to prepare reports on these efforts

2. Current Activities

(a) Policy Analysis for the President and Executive Office

The Council submits weekly reports to the President. The Chairman attends Cabinet and twice weekly White House Senior Staff meetings. When key policy issues arise, such as the Three Mile Island recommendations, April 5 and July 15, 1979 energy messages, June 20 Solar Energy Message, Alaska Lands designation recommendations, and RARE II wilderness recommendations, memoranda are submitted to the President and appropriate EOP staff. The Council Members and staff attend policy development and decision meetings. The Council participates fully in the development of the Administration's budget by reviewing budget materials, consulting with OMB staff, and submitting comments. The Council assisted in the development of Administration legislative proposals involving environmental quality issues such as energy and nuclear waste management proposals, the RARE II proposals, the Oil Spill and Hazardous Waste ("Superfund) legislation, and amendments to the Endangered Species Act.

(b) Policy Analysis for Congress

During 1980, the Council Members and senior staff members presented testimony to the Congress on about 15 occasions on issues such as:

- o environmental effects of synthetic fuels development;

- o energy conservation;

- o national coastal protection and management policy;

- o environmental effects of non-fuels minerals mining.

In addition, the Council responded to numerous Congressional inquiries which sought information and assessments of issues being considered by the Congress. Finally, the Council has devoted significant resources to developing and monitoring the $500,000 multiyear study of non-coal mineral mining reclamation techniques pursuant to the mandate in the Surface Mining and Reclamation Act of 1977. The National Academy of Sciences completed its study and submitted it to the Council in November 1979. During 1980, the Council will hold a series of public hearings on the study, review comments, and develop legislative recommendations as required by the Act.

(c) Public Reports and Analyses

In 1979, CEQ researched, developed, and, where noted below, published the following reports:

- Tenth Annual Environmental Quality Report (published February 1979)
- Good News About Energy (published March 1979)
- Our Nation's Wetlands (published June, July, 1979)
- Off Road Vehicles on Public Lands (published May 1979)
- Wildlife and America (published May 1979)
- Survey of State Programs to Preserve Farmland (published June 1979)

In addition, the Council Members and key staff members presented speeches and participated in conferences or panels on about 80 occasions which focused on assessing and analyzing major environmental policy issues.

(d) Policy Development and Analysis

CEQ staff developed and managed about twelve independent data acquisition and policy analysis studies. See Tab B for a list of FY 1979 contracts and amendments.

B. Interagency Coordination and Environmental Quality Program Decision Unit

FY 1981 Budget Estimate:

- $974,000 --
- 11 permanent staff
- 6 temporary staff

1. Basic Objectives

In order to meet its statutory responsiblities, the Council's basic interagency coordination and environmental quality program improvement objectives are:

- o to organize interagency task forces, to develop recommendations, to complete the efforts as promptly as possible, and to monitor agency implementation of Presidential directives that result from such task forces in order to produce necessary program changes consistent with Presidential and Congressional policy directives

- o to produce on a timely basis interagency reports required by the Congress and the President, such as the Toxic Substances Data Committee Report submitted to the Congress in 1978

- o to promulgate and maintain regulations implementing the procedural provisions of NEPA and the referral process established by Section 309 of the Clean Air Act.

- o to oversee agency implementation of NEPA, including approving agency implementation procedures and providing advice to agencies upon request

- o to process promptly and provide decisions on referrals of environmentally unsatisfactory federal projects as required by NEPA. Section 309 of the Clean Air Act, and CEQ regulations

2. Current Activities

(a) NEPA Regulations

On November 29, 1978, the Council published in the Federal Register final regulations implementing the procedural provisions of NEPA. These regulations are binding on all federal agencies and became effective on July 30, 1979. The U. S. Supreme Court in Andrus v. Sierra Club (1979), relied on the regulations as providing authoritative rules for the application of NEPA's requirements to agency actions. The regulations are designed to reduce delay and paperwork while producing an improved decisionmaking process. Tab D provides a more detailed discussion of the process by which the Council developed the NEPA regulations. This process involved all Council Members and staff.

All Departments except for the Departments of Health, Education, and Welfare and Navy have published proposed or final agency regulations implementing the Council's regulations. The Council will continue to oversee agency implementation of NEPA to ensure that agencies promulgate adequate implementing regulations and that the three principal objectives

of the NEPA regulations are met: to reduce paperwork, to reduce delay, and to improve decisions. The Council provides oversight of agency implementation of Executive Order 12114 which involves environmental reviews of agency actions outside the U.S. (See Tab F for progress reports on these oversight activities.) Finally, the Council responds to Department of Justice requests for advice on NEPA issues in all litigation under the Act being handled by the Department. This role enables the government to be consistent in its interpretation of NEPA in the various courts.

(b) Development of Policy Recommendations

Together with other agencies, CEQ developed policy and program recommendations for the following committees:

- Water Resources Policy Committee (Interior, CEQ, OMB). On June 6, 1978, the President submitted to the Congress his Water Resources Policy Reform Message. The three agencies were directed to oversee the implementation of the President's directives.

- Toxic Substances Strategy Committee (chaired by CEQ). A final report will be completed February 1980, containing recommendations for reducing research overlaps and gaps, improving data sharing while respecting necessary confidentiality requirements, and for developing a uniform federal cancer policy.

- Interagency Toxic Substances Data Committee (cochaired by CEQ and EPA). The Committee followed up on the report submitted to the Congress in July 1978, producing a feasibility study for CSIN and a prototype which is now operational.

- TSCA Interagency Testing Committee. Every six months this committee submits to EPA a list of chemicals that it has determined EPA should test in order for EPA to determine if EPA should regulate the chemical as a toxic substance.

- Environmental Data and Monitoring Task Force (chaired by CEQ). A final report will be published early in 1980 containing recommendations for improving federal environmental data and monitoring capabilities.

- Nuclear Waste Management Task Force. A final report was submitted to the President in March 1979, and a Presidential policy statement, together with initiatives, will be issued early in 1980.

- Hazardous Substances Export Policy Task Force. Together with the Office of Consumer Affairs, CEQ produced a draft interagency report with recommendations for hazardous substances export policy reform. The draft report was circulated for agency review in January 1980 and a final report is expected to be published in April 1980.

- Tropical Forests Task Force. CEQ played a major role in preparing the draft report which was circulated to agencies for review in November 1979. A final report is expected to be published in April 1980.

- Resources Conservation Act Coordinating Committee (USDA, CEQ, OMB). The Committee is examining and analyzing soil, water, and related resources of the nation to determine availability and what improvements are needed in their management.

In addition, CEQ participated in about 36 other interagency committees.

(c) Agency Referrals

CEQ completed the processing of two referrals by federal agencies of environmentally unsatisfactory projects and provided the agencies with recommendations as required by Section 309 of the Clean Air Act and Part 1504 of CEQ's regulations.

(d) Research and Analysis

CEQ staff developed and managed about seven independent data acquisition and policy analysis studies. See Tab B for list of FY 1979 contracts and amendments.

In addition, in 1979 CEQ in conjunction with the Department of Agriculture undertook two important agricultural policy studies, both of which are to be completed in January 1981, when reports with policy recommendations are to be submitted to the President. The first study is cochaired by USDA and CEQ and addresses the question of the availability and conversion of agricultural land. As directed by the President in his 1979 Environmental Message, the other study is being conducted by USDA in consultation with CEQ and addresses the question of developing recommendations for improving federal soil erosion control programs.

(e) Agency Oversight

In 1979 CEQ oversaw agency implementation of

- the President's 1979 Environmental Message directives

- the President's 1978 Water Policy Reform Message directives (with Interior and OMB)

- the 1977 Wetlands and Floodplain Management Executive Orders

C. Environmental Data Acquisition and Assessment Decision Unit

FY 1981 Budget Estimate:

- o $692,000
- o 5 permanent staff
- o 2 temporary staff

1. Basic Objections

In order to meet its statutory responsibilities, the Council's basic environmental data acquisition and assessment objectives are:

- o making the Council's UPGRADE computer system available to other federal agencies and to the public
- o satisfying in-house requests for analysis and analytic assistance, including providing information, graphs, and tables for the Annual Report and other CEQ publications and providing specific analyses in response to requests from Council and staff members
- o developing environmental indicators which can accurately assess trends in environmental quality based, in particular, on long-term time series data
- o publishing regularly environmental statistics to enable policy analysts to assess conditions and trends in environmental quality
- o improving the information base and analytic support of environmental policy decisionmaking across the government
- o overseeing the use of adequate data and statistics by federal agencies in environmental policy and decisionmaking
- o providing the President and the Executive Office of the President with advice and information on environmental statistics, conditions, and trends

2. Current Activities

(a) Development of UPGRADE

Since 1975, with cosponsorship of the Department of Energy, Environmental Protection Agency, and National Cancer Institute, CEQ has developed and is continuing to improve a computer-based environmental data display and analysis system called UPGRADE. The system permits rapid and easy analysis of complex sets of data by policy-making officials. Appendix E provides a summary of UPGRADE resources and expenditures.

(b) Providing Analytic Support for the Council

Detailed analyses for the President's Annual Environmental Quality Report and other special studies have been provided for air and water quality, living resources, environmental health, including assessments of birth defects data, and economics. About 75 graphs and tables in the Tenth Annual Report were produced by UPGRADE.

(c) Providing Analytic Support for Other Agencies

UPGRADE generated studies are used by a variety of agencies in their programs and policy formulations, including primarily DOE and EPA. In 1979, about 25 studies requiring more than 1,000 hours of computer time were completed.

(d) Improving Agency Data and Monitoring Programs

CEQ manages an interagency task force which will recommend in 1980 improvements in the federal government's data and monitoring programs. The task force supplements ongoing work with other agencies to improve the use of environmental data in decisionmaking. The task force has seven subgroups and about 200 participating agency personnel.

(e) Developing Environmental Indicators

A book -- Environmental Statistics - 1978 -- comprising 11 chapters and about 200 tables of time series environmental data, was published in 1979. The book forms the basis for developing environmental indicators and CEQ will publish in 1980 a book of environmental indicators.

(f) Improving the NEPALIT Program

The NEPALIT Program involves compiling comprehensive data on litigation involving NEPA. The computer program developed by this effort will permit rapid and easy access to NEPA legal issues that have been raised in cases, the types of relief granted, and the types of federal programs or actions affected by litigation. The Council is improving the program.

(g) Research and Analysis

CEQ staff developed and managed about seven independent data acquisition and policy analysis studies. See Tab B for a list of FY 1979 contracts and amendments.

60-531 O - 80 - 69

D. Council Staff Structure

To accomplish its objectives, the Council has organized its professional staff into seven substantive issue areas, each of which is led by a Senior Staff Member:

- Economics and Pollution Control
- Energy and Resource Recovery
- Environmental Data and Monitoring
- Environmental Health and Toxic Substances
- International Affairs
- Land Use and Wildlife
- Natural Resources

In addition, the Council has four other offices:

- Office of General Counsel
- Office of Public and Congressional Liaison
- Office of Public Information
- Administrative Office

III.

ZERO-BASE BUDGET CONSIDERATIONS

A. Decision Units

Careful analysis of the Council's operations and its statutory responsibilities and objectives resulted in our identifying three decision units. These three units correspond with the Council's basic statutory mandates and comport with the key considerations which are brought to bear in determining priorities among Council activities. The three decision units will be consistent over time in contrast with staff units which may be changed depending upon a variety of factors such as professional skills of senior staff members, substantive issue area interests of Council Members, and management efficiency. The three decision units are also large enough in personnel and resources to make it feasible to assess trade-offs in allocating marginal resources to one unit or another.

The three decision units have the following basic objectives:

- to provide policy advice to the President, the Executive Office of the President, and the Congress

- to assist agencies in coordinating environmental quality programs and issues

- to collect and analyze data concerning conditions and trends in the Nation's environmental quality

B. Major Changes in Council Program Responsibilities

A principle of ZBB analysis is to examine major alternative program responsibilities, including effective abolition of programs. Alternatives for divesting CEQ of some or all of its major responsibilities were thoroughly analyzed over 1977-1978 by two separate reorganization efforts: (1) The Executive Office of the President reorganization team; (2) the Natural Resources/Environment reorganization study of the President's Reorganization Project. Both efforts concluded that CEQ should remain within the Executive Office of the President where CEQ could most effectively fulfill CEQ's environmental policy statutory mandates. The Executive Office reorganization team determined that three CEQ administrative type functions should be performed by other agencies:

- o preparing draft materials for inclusion in the annual report and other annual report preparation activities
- o processing and filing of environmental impact statements and monitoring agency NEPA implementation at the individual project level
- o review of the adequacy of non-nuclear energy research

A principal reason for moving these three functions out of CEQ was to strengthen and focus CEQ's policy analytic responsibilities. In presenting the Executive Office of the President reorganization plan in the Senate Government Affairs Committee, former OMB Director Bertram Lance testified:

> "By sharpening and focusing [the Council's] role [through reorganization] we believe that the Council can be more effective in formulating policy at the Executive Level."

In addition, in a September 2, 1977 letter to Senator Edward Muskie in response to a Congressional inquiry on reorganization, OMB Director Lance stated:

> "CEQ has in fact been given additional responsibilities as noted in the President's Environmental Message . . . . Now that CEQ will provide advice to the President, input to the budget process, and reorganization initiatives, and be a part of the network of key Presidential advisers, the mutual policy concerns of the President and the Congress will be well served."

A Q&A response by OMB attached to the above letter stated:

> "The only change made by the reorganization is that CEQ will not be spending its time on day-to-day problems of the agencies. Removing this responsibility, which has become much less important as other agencies have implemented strong NEPA procedures, will allow CEQ to focus more on general policy level issues."

In sum, major program changes that would improve CEQ's operations have been independently and thoroughly assessed and necessary changes made.

TAB A

Highlights of Activities
Council on Environmental Quality
1977-1979

A. The President's Environmental Program

1. Developed and prepared the President's 1977 Environmental Program and May 23, 1977 Message on the Environment and Presidential directives to heads of agencies.

2. Developed and prepared the President's 1979 Environmental Program and August 2, 1979 Message on the Environment and Presidential directives to heads of agencies.

3. Developed, prepared and promulgated National Environmental Policy Act (NEPA) Regulations, November 28, 1978.

4. Developed and prepared six Executive Orders issued by the President:

Executive Order 12114 -- Environmental Effects Abroad of Major Federal Actions
Executive Order 11991 -- Protection and Enhancement of Environmental Quality (NEPA reform)
Executive Order 11990 -- Protection of Wetlands
Executive Order 11988 -- Floodplain Management
Executive Order 11987 -- Exotic Species
Executive Order 11989 -- Off-Road Vehicles on Public Lands

B. Formulating National Policies and Coordinating Federal Environmental Efforts

The Council had a major role in the following:

1. Ocean Oil Pollution Policy and the President's 1977 Message on Tanker Safety and Standards and oil spill liability fund legislation.

2. Water Resources Policy review and the President's July 12, 1978 Message and directives to agency heads on Water Resources Policy Reform.

3. Solar Energy domestic policy review and the President's June 20, 1979 Message on Solar Energy.

4. Interagency Nuclear Waste Management Policy review and report.

5. Plutonium recycling and breeder reactor policy and Clinch River Breeder Reactor project.

6. Reauthorization and strengthening of the Coastal Zone Management Act.

7. Implementation of the Convention on Trade in Endangered Species (CITES).

8. Water Project Review, Authorizations and Appropriations.

9. Alaska Natural Gas and Northern Tier Pipeline proposals.

10. Oversight and implementation of President's Environmental Messages and directives to agencies.

The Council initiated, chairs, or has a lead role in the following:

1. National Agricultural Lands Study (co-chair with USDA)
   Initiated in 1979 to evaluate and make recommendations on the availability of agricultural land in the U.S.

2. Wildlife Law Enforcement Coordinating Committee.
   Initiated in 1979 to coordinate vigorous enforcement efforts by five Cabinet Departments to stem illegal domestic and international trade in plants and wildlife.

3. Acid Rain Coordinating Committee (Executive Secretary)
   Initiated in 1979 to plan and manage a ten-year program to research and assess the acid rain problem.

4. Toxic Substances Strategy Committee (chair)
   Initiated in 1977 to develop a coordinated federal strategy for data, research and regulatory activities on toxic substances.

5. Interagency Toxic Substances Data Committee (co-chair with EPA)
   Initiated in 1978 to develop a chemical substances information network throughout the government in order to support toxic substances research and regulation.

6. Environmental Data and Monitoring Task Force (chair)
   Initiated in 1977 to review federal environmental monitoring and data programs and recommend ways to improve their effectiveness.

7. Integrated Pest Management Coordinating Committee (chair)
   Initiated in 1979 to assure adoption of IPM strategies in federal programs and to oversee further development and use of IPM practices.

8. Economic Assistance Task Force (chair)
   Initiated in 1977 to review the need for and effectiveness of federal economic assistance to communities experiencing economic dislocation due to federal pollution control programs.

9. Interagency Committee on Housing and the Environment (chair)
   Initiated in 1978 to simplify and improve the environmental review process for federal housing programs, in response to recommendations of HUD's Housing Costs Task Force Report (May 1978).

10. Interagency Committee on Water/Sewer Programs and the Environment (chair)
    Initiated in 1978 to simplify and improve the environmental review process for federal water and sewer programs.

11. Non-Coal Minerals Mining and Reclamation Study
    Initiated in 1978 in response to statutory requirement that CEQ conduct a study of options for regulating mining and reclamation for minerals other than coal.

12. Lake Tahoe Basin Study
    Initiated in 1978 by CEQ for all federal agencies taking actions in the Tahoe Basin to prepare a basin-wide environmental impact statement.

13. Barrier Islands Policy Environmental Impact Statement
    Initiated in 1978 by CEQ and being conducted by the Department of the Interior as lead agency.

The Council handled 8 referrals from heads of agencies under NEPA on proposed actions that other heads of agencies view as environmentally unacceptable, including:

1. Hendry County Flood Control project, Florida.

2. Fire Island to Montauk Point, N.Y. beach and hurricane control project.

3. Packer River Terminal, Minnesota.

4. Foothills Reservoir and Water Treatment Plant, Colorado.

5. County Trunk Highway "Q", Wisconsin.

6. Wando River Marine Terminal, South Carolina.

7. West Side Highway ("Westway"), New York.

8. Lake Alma, Georgia.

The Council developed UPGRADE, a major environmental data system for general use by federal agencies and the public.

C. Council Participation in Other Interagency Efforts

The Council worked with other agencies in the development of Administration policy on the following:

1. Oil Spill and Hazardous Waste legislation (Superfund).
2. The President's Energy Program and Messages.
3. Alaska Lands Designations (D-2 lands and Presidential action).
4. Cost-sharing and other water resources reform legislation.
5. Tuna-Porpoise Controversy.
6. U.S. position and negotiations for the International Whaling Commission meetings and for marine mammal protection.
7. Predator control policy.
8. Antarctica Convention.
9. Regulatory Reform program (legislative and administrative).
10. Highway and mass transit legislation.
11. Non-fuel minerals domestic policy review.
12. Resources Conservation Committee (recycling and resource recovery).
13. Toxic Substances Control Act Interagency Testing Committee.
14. Interagency Tropical Forests Task Force.
15. Soil and Water Resources Conservation Act (RCA) Coordinating Committee (soil, water, and related resources).
16. Interagency Committee on Urban Noise.
17. Interagency Working Group on Export of Hazardous Substances.

The Council is a participant in the following White House and interagency efforts:

1. Preparation of the President's Annual Budget in the Executive Office of the President.
2. Regulatory Analysis Review Group (RARG) in the Executive Office of the President.
3. The President's Reorganization Project.

4. Energy Coordinating Committee.

5. National Productivity Council.

6. Interagency Coordinating Committee (IACC) for the President's urban program.

7. Water Resources Council.

D. Other Legislative Activities

The Council assisted in developing and supporting the Administration's legislative proposals on:

1. Reform of the 1872 Mining Law (hardrock mining).

2. Non-game Wildlife.

3. Section 404 Wetlands Protection Program of the Clean Water Act amendments of 1977.

4. Endangered Species Act Reauthorization in 1977 and 1979.

5. Auto emissions issue and economic incentive provisions of the Clean Air Act amendments of 1977.

E. CEQ Studies and Publications

The Council prepared the following reports:

1. The President's Annual Environmental Quality Reports for 1977, 1978, and 1979.

2. Solar Energy: Progress and Promise.

3. The Good News About Energy.

4. Oil and Gas in Coastal Lands and Waters.

5. Report to the President on Environmental Impacts of Proposed Alaska Gas Transportation Corridors.

6. Progress in Environmental Quality.

7. Integrated Pest Management: Status and Prospects in the U.S. (December 1979 publication date).

8. Report to the President of the Toxic Substances Strategy Committee.

The Council had the following contract studies prepared (partial list):

1. Macro-Economic Effects of Pollution Control Programs (DRI).
2. Environmental Statistics 1978.
3. Wildlife and America.
4. Our Nation's Wetlands.
5. Hardrock Mining on the Public Land.
6. Off Road Vehicles on the Public Land.
7. A Survey of State Programs to Preserve Farmland.
8. The Boston Case Studies on water quality goals, alternatives, and the institutional aspects of wastewater management (with DMB, et al.).
9. Chemical Substances Information Network (CSIN).
10. U.S. Non-Proliferation Strategy Reformulated.
11. Some Long-Term Consequences of Hypothetical Major Releases of Radioactivity into the Atmosphere from Three Mile Island.
12. Energy Conservation in Industry: The Present Approach, The Future Opportunities.
13. Overcoming Social and Institutional Barriers to Energy Conservation.

The Council has the following studies in preparation (partial list):

1. Global 2000.
2. Environmental Indicators.
3. The Availability of Agricultural Lands.
4. Desertification in the United States.
5. Land Impacts of Rural Growth.
6. Community Guidebook for Management of Coastal Floodplains.
7. Guide to the President's Order on Wetlands Protection.
8. Handbook on Water and Sewer Programs.

TAB B

STUDIES SPONSORED

BY THE

COUNCIL ON ENVIRONMENTAL QUALITY

FY 1979

CEQ Fiscal Year 1979 Contracts

EQ9AC001: Analysis of national land use and natural resource policy — $61,369.00

To perform project planning, research, and preparation to provide the Government with a final report which, from an analysis of pertinent Federal law and related legal issues, will summarize national policy in land use and natural resources.

Contractor: Aspen Systems Corporation

EQ9AC002: Development of systems to disseminate information to the public — $17,533.00

To develop and design programs and systems which are for the use of the Council for public involvement and participation in the contribution to appropriate activities of the Council and for disseminating information to the public regarding matters of interest to the Council.

Contractor: Janet Bearden

EQ9AC003: Preparation of environmental policy handbooks on housing programs and on water/sewer programs. — $31,000.00

To conduct an analysis and prepare two Handbooks suitable for publication on the alternatives to be considered by federal agencies during the environmental review process for housing programs and for water and sewer programs.

Contractor: Urban Land Institute

EQ9AC004: Study of East Coast areas to determine suitability for energy facilities — $150,000.00

Identification and mapping of areas on the East Coast having resource values, environmental constraints and development activities. The purpose of the project is to display for decisionmakers those East Coast areas that are least suitable for the siting of energy and other facilities and that should be most carefully protected and managed.

Contractor: The Johns Hopkins University

EQ9AC005: Editor/publisher of the 10th Annual Report — $19,977.00

To act as the editor/publisher for the Tenth Annual Report of the Council on Environmental Quality

Contractor: Social Research Applications Corporation

EQ9AC006: Prepare documents to give states information on federal OCS activities; and prepare a report on implementation of 102(2)(G) of NEPA — $505,797.00

To prepare a series of Summary Reports to regions affected by OCS development. These reports are a major source of transfer of federal information to the states and are needed by them for coping with the environmental and social consequences of OCS development.

Contractor: Rogers and Golden

EQ9AC007: Administrative support and coordination for Toxics Committee — $15,920.00

Administrative coordination and assistance for the Interagency Toxic Substances Data Committee (ITSDC), the Chemical Substances Information Network Sub-Committee (CSIN) of the ITSDC and the Toxicology Information Subcommittee of the DHEW Committee to coordinate toxicology and related programs.

Contractor: Nan Fremont

EQ9AC008: Provide recommendations on improving the quality of data used to predict the non-health environmental effects of toxic substances — $175,000.00

Contractor: National Academy of Sciences

EQ9AC009: CANCELLED

EQ9AC010: Report on OCS Oil and Gas Information Program and related Rogers and Golden Contract — $19,203.00

To monitor USDI/RALI activities in the OCS Oil and Gas Information program as well as progress of Rogers and Golden under contract EQ9AC006.

Contractor: Margaret Johnson

EQ9AC011: Technical Consultation on Network Administration — $78,225.00

To provide expert technical consultation to Network Administration of the Chemical Substances Information Network (CSIN) for a one-year period.

Contractor: Graf Associates

EQ9AC012: Feasibility Study on Registration of Chemical Substances from Pre-1965 Indexes of Chemical Abstracts — $135,590.00

To explore the technical feasibility, resource requirements and estimated costs for registering substances from the chemical literature prior to 1965.

Contractor: American Chemical Society

EQ9AC013: Questionnaire for environmental public opinion survey — $14,000.00

To design and prepare a questionnaire for the purpose of conducting an environmental public opinion survey.

Contractor: Resources for the Future

EQ9AC014: Evaluation of EPA's Pesticide Applicator Training and Certification Program — $320,000.00

To evaluate the effectiveness of the private pesticide applicator training and certification program currently conducted by EPA.

Contractor: Abt Associates, Inc.

EQ9AC015: CANCELLED

EQ9AC016: Impact Analysis of Alternative Energy Technology $50,000.00

Analyze risks and benefits inherent to conventional energy technologies and their potential vulnerability to disasters, accidents and sabotage; review and discuss preparedness policies to determine their applicability and effectiveness in mitigating the possible adverse impacts of alternative energy technologies.

Contractor: Friends of the Earth

EQ9AC017: Study and development of a reference book of state and local programs to protect agricultural land $14,000.00

Conduct inquiries and an extensive literature review of existing and proposed state and local programs designed to protect agricultural land; compile an inventory and a brief description of these state and local programs.

Contractor: Regional Science Research Institute

EQ9AC018: Assessment of Federal Agency Compliance with the President's 1979 Directive on Integrated Pest Management $29,103.00

Assist the Council in overseeing implementation of the Integrated Pest Management initiative in the President's August 1979 Environmental Message.

Contractor: University of Maryland

EQ9AC019: Environmental Evaluation and Policy Analysis of Mineral and Energy Resource Management $11,000.00

Provide assistance to the Council in its ongoing technical evaluation and policy analysis of the environmental consequences of mineral and energy resource development.

Contractor: Environmental Planning/Research Institute

FY 1979 Amendments to 1979 Contracts

EQ9AC007: Amendment #1 — $14,300.00

Administrative coordination and technical assistance to Toxic Substances Data Committee

Contractor: Nan Fremont

FY 1979 Amendments to 1978 Contracts

EQ8AC002: Amendment #3 — $4,743.20

Extension of development and design of programs and systems for public involvement.

Contractor: Bernice Steinhardt

EQ8AC004: Amendment #3 — $2,572.00

To enable Contractor to participate in November 1978 OECD Group of Experts meeting in preparation for May 1979 meeting.

Contractor: Daniel Tunstall

EQ8AC004: Amendment #4 — $3,050.00

To support the drafting of the Wildlife Chapter for the Organization for Economic Cooperation and Development on the State of the Environment.

Contractor: Daniel Tunstall

EQ8AC004: Amendment #5 — $27,931.00

Prepare draft technical report for OECD and finish input to Indicators Book.

Contractor: Daniel Tunstall

EQ8AC004: Amendment #6 — #5,425.00

Provide additional copies of Statistics Book.

Contractor: Daniel Tunstall

EQ8AC004: Amendment #7 — $20,695.00

Drafting of Biosphere Chapter of Environmental Conditions and Trends

Contractor: Daniel Tunstall

EQ8AC008: Amendment #3 — $22,987.00

Environmental Energy Disputes

Contractor: American Arbitration Association

EQ8AC008: Amendment #4 — $25,000.00

Environmental Energy Disputes

Contractor: American Arbitration Association

EQ8AC011: Amendment #1 — $20,000.00

To administer NAS study of Surface and Open Pit Mining and Reclamation Technologies for minerals other than coal, and to provide CEQ with additional information on such issues.

Contractor: Erik Rifkin

EQ8AC012: Amendment #1 — $220,000.00

Additional funding for the surface and open pit mining study.

Contractor: National Academy of Sciences

EQ8AC015: Amendment #2 — $2,500.00

Conference fees

Contractor: Booz-Allen & Hamilton, Inc.

EQ8AC016: Amendment #1 — $7,500.00

Implementation of four economic incentives

Contractor: Pacific Environmental Studies, Inc.

EQ8AC017: Amendment #1 — $3,000.00

Evaluate potential successful implementation of four economic incentives

Contractor: Environmental Law Institute

60-531 O - 80 - 70

EQ8AC026: Amendment #1 — $20,000.00

Technical support for the TSCA Interagency Committee Workshop

Contractor: Enviro Control, Inc.

EQ8AC028: Amendment #1 — $158,726.00

Study of System Alternatives for the Chemical Substances Information Network

Contractor: Computer Corporation of America

EQ8AC028: Amendment #2 — $539,999.00

Expanded requirements analysis and prototype development of a Chemical Substances Information Network

Contractor: Computer Corporation of America

FY 1979 Amendments to 1977 Contracts

EQ7AC003: Amendment #8 — $858,713.00

Continuation of support of UPGRADE project including work for CEQ's Annual Report.

Contractor: Sigma Data Computing Corporation

EQ7AC003: Amendment #9 — $859,666.00

Strengthen health analysis capabilities of UPGRADE to track chemical substances in regulatory review.

Contractor: Sigma Data Computing Corporation

EQ7AC003: Amendment #10 — $8,500.00

Complete analysis of air effects on health and complete graphics for Indicators Book.

Contractor: Sigma Data Computing Corporation

EQ7AC004: Amendment #1 — $17,834.00

Preparation of text for designed typesetting.

Contractor: Conservation Foundation

EQ7AC026: Amendment #1 — $9,861.00

Preparation of a series of papers for the Government dealing with the relationship between economic growth, environmental quality, and natural resource availability and consumption.

Contractor: Public Interest Economics Center

TAB C

PROPOSED STUDIES

BY THE

COUNCIL ON ENVIRONMENTAL QUALITY

FY 1981

Introduction

FY 1981 study proposals are divided among subject matter categories and are listed on the following pages. The ten categories are:

- o National Environmental Policy
- o Environmental Data and Monitoring
- o Economics
- o Energy
- o Environmental Health and Toxic Substances
- o Public Lands and Primary Federal Responsibilities
- o Private Lands
- o Natural Resources
- o Pollution Control and Resources Conservation
- o International Affairs

About 60 study proposals are listed below. They involve greater amounts of money than CEQ has available for studies. In the lists below, priority studies are asterisked; the more important studies within the priority category contain two asterisks.

National Environmental Policy

A major CEQ responsibility is overseeing implementation of the National Environmental Policy Act (NEPA). This responsibility was enhanced and given particular focus when in May 1977 in his first Environmental Message President Carter directed CEQ:

(i) "to issue regulations requiring federal agencies to meet [the] criteria [of being, for example, based upon competent professional analysis, concise, readable] and the provisions of Section 102(2) of [NEPA]," and

(ii) "to establish a procedure for referring to the Council differences among agencies concerning implementation of [NEPA]."

On November 29, 1978, CEQ promulgated final regulations, which became effective July 30, 1979, and began assisting agencies in developing their procedures to implement CEQ's regulations.

During 1978 and 1979 the Council worked intensively assisting and supervising the preparation and adoption of agency supplemental procedures.

In 1980 and 1981 the Council will be devoting substantial time to interagency and federal/state coordination of NEPA responsibilities to ensure that the reforms of the NEPA regulations are fully implemented.

More generally, CEQ has responsibility for assisting agencies to achieve the environmental policy goals proclaimed in NEPA and to aid citizens, state and local agencies, private industry, and others in undertaking their environmental responsibilities and to improve the quality, utility, and relevance of environmental impact statements.

CEQ's FY 1981 study proposals in the national environmental policy area are:

*	Completing its study of federal environmental review and permitting requirements and developing initiatives to improve implementation of these requirements	$75,000
	Assessing the time required by agencies to complete the EIS process under the new NEPA regulations	$10,000
	Updating the Council's NEPA litigation computer files (NEPALIT system) for 1981	$20,000
**	Analyzing agency implementation of important components of the NEPA process as revised by the NEPA regulations (e.g., the scoping process; joint federal/state EISs; quality of the new EISs; effectiveness of new measures to reduce delay, paperwork, and improve agency decisions)	$30,000
	Evaluating the NEPA process as it is applied to proposed federal energy projects, policies and programs	$25,000
*	Developing guidance for federal agencies and distributing pamphlets, manuals and other materials to aid citizens, federal agencies, state and local agencies, private industry, and others in understanding environmental requirements.	$25,000

Environmental Data and Monitoring

Since 1975, CEQ has developed a capability to assess and interpret environmental data. Major staff effort has gone into developing this system and demonstrating its capacities to a range of federal agencies. The data system allows better and quicker analysis of environmental trends and reduces the need for outside contractors by CEQ and by other agencies. (The major component of this data system is called UPGRADE.)

Like any information system, data in CEQ's system is constantly in need of updating and replacement as better sources and better information become available. The system itself has already been useful in identifying areas where improved monitoring and data collection methods are most necessary. The amounts needed for this work by CEQ are in most cases supplemented by funds from other agencies with interests in the developing system.

Another important area of environmental data and monitoring research for CEQ is its program to improve our ability to determine and to predict significant environmental trends. A principal focus to this effort is the regular reporting of environmental statistics and the development of quantifiable environmental indicators. Another important concern is to assist agencies in identifying environmental monitoring needs and the appropriate role of environmental data in decision making.

CEQ's FY 1981 research and related analytical study proposals in the environmental data and monitoring area are:

**	Analyzing air, water, epidemiological, wildlife, natural resources, land use, and other data bases, including their interrelationships, in order to fulfill our statutory responsibility to assess status and trends in environmental quality; the results of much of this work are published in the Council's Annual Report	$ 80,000
**	Publishing second edition of Environmental Statistics	$ 50,000
*	Developing environmental indicators from available environmental statistics in order to improve and refine environmental quality assessments; preparing for publication second edition of Environmental Conditions and Trends	$100,000
*	Assessing federal environmental monitoring capabilities and activities to recommend improvements in data acquisition, development and quality control and changes in information processing and collection systems	$ 50,000
	Developing a set of environmental data which is comparable with data gathered by other OECD nations	$ 50,000
	Integrating demographic, health, and pollutant statistics to identify long term human health standards	$ 60,000

Integrating economic data into the UPGRADE system to do comparative air and water quality analyses involving economically related variables	$ 60,000
Developing coordinating mechanisms for environmental data between state and federal agencies	$ 65,000

Economics

Since CEQ's establishment in 1970, CEQ has taken the lead in assessing the costs associated with federal environmental programs and the impacts of environmental legislation on the national economy. An important factor in this assessment is the employment effect of environmental requirements. CEQ has also assisted in developing methods for ensuring achievement of environmental goals by non-regulatory means such as economic incentive schemes.

CEQ's FY 1981 economic analysis study proposals are:

**	Updating the results of the assessment of the macro-economic impacts of environmental programs (economic growth, employment, inflation, etc.)	$ 40,000
	Analyzing the productivity-enhancing effects of clean air, clean water, a healthy workplace, and other benefits of regulation	$ 60,000
*	Developing innovative approaches to regulation that will confront regulators with an incentive to reveal truthful, complete information about the impacts of proposed rules	$ 20,000
**	Reviewing the economic analyses and cost/benefit studies of regulations that were done at the time of planning and decision making to determine how accurately the costs of regulation have been estimated in the past	$100,000
	Analyzing the economic rationale for a "wait-and-see" approach to environmental and health regulations; assess the degree of caution called for in order to acquire and use new information	$ 95,000
	Developing pilot or model studies or programs to test the feasibility and efficiency of economic incentive pollution control techniques	$ 40,000
	Assessing the environmental and economic impacts of important federal policies, including tax credits and other incentives, licensing systems, targeted assistance	$ 30,000

Energy

Important environmental effects are associated with energy production and consumption. The nation's energy system is responsible for substantial amounts of air and water pollution. Land impacts are also significant. Since the 1973 Oil Embargo, energy problems have become one of the most critical national concerns. The National Energy Act, signed into law in the fall of 1978, will lead to major changes in domestic energy use, increasing, for example the extent to which we conserve energy or increase the efficiency with which we use energy. Similarly, the President's goal to reduce dependence on foreign oil by one-half by the end of the next decade and his goal to derive 20 percent of the nation's energy needs from the sun by the year 2000 will also accelerate the evolution of the energy system. All of these developments have important environmental implications which relate to achieving environmental policy goals established in various departmental/agency programs and federal statutes including NEPA.

CEQ's FY 1981 energy/environment contract proposals are:

	Reviewing the scope and detail of the "Need for Power" analysis contained in recent Environmental Impact Statements. Evaluating the adequacy of these analyses and developing approaches to improve their content where necessary	$ 40,000
	Analyzing agency EIS plans, CEQ's coordinating role, state and local government participation and public participation as they relate to the disposal of radioactive wastes in the United States	$ 50,000
*	Assessing the feasibility of alternative energy storage technologies which could operate within the next two decades	$ 15,000
	Assessing nuclear non-proliferation implications of international arrangements for the nuclear fuel cycle	$ 50,000
**	Developing alternative means, including assessing alternative technologies, for meeting industrial energy needs in a solar economy	$ 35,000
**	Developing alternative methods for encouraging energy conservation in commerical buildings	$ 25,000

Environmental Health and Toxic Substances

In the environmental health and toxic substances area CEQ plays a leadership role in assisting in the development of strategies for improving our understanding of the health effects of environmental factors and our ability to control or to mitigate these effects. CEQ is active in participating in the development of the Administration's overall toxic substances budget, including recommending new Administration initiatives developed by CEQ. CEQ also directs, coordinates, or participates in several key interagency activities concerned with research, data, regulatory, and policymaking actions. Examples of CEQ's role are found in the results and initiatives produced by the Interagency Toxic Substances Data Committee and the Toxic Substances Strategy Committee, both of which CEQ chairs.

CEQ's FY 1981 environmental health and toxic substances study proposals are:

	Identifying and analyzing constraints in existing laws for compensation of victims of pollution related diseases and examining other alternative regulatory strategies for toxic substances control	$100,000
	Analyzing the relationships and correlations between environmental factors such as geographic areas and pollutant emmissions and health statistics such as death rates from cancer	$ 50,000
*	Providing support, including technical support, for the research and analysis needs of CEQ interagency responsibilities including analyses of risk assessment methodologies and their roles in broadening risks and benefits analyses, toxic substances control efforts, and the health costs of environmentally related diseases	$ 75,000
*	Continuing development of improved federal data collection and accession including further implementation of the recommendations for a government-wide chemical information network made by the Interagency Data Committee in its report to Congress, and trade secrets and confidentiality policy by the Toxic Substances Strategy Committee	$ 75,000
	Identifying and analyzing constraints in existing laws and regulations for identifying, reporting, and treating of environment related environmental health problems	$ 40,000
*	Developing public information documents/reports on a variety of toxic substances issues, including cancer, mutagenesis, birth and behavioral defects, and victim compensation	$ 50,000

Analyzing the impact on groundwater from hazardous waste disposal site and other sources and developing policy recommendations to prevent and address groundwater pollution $ 75,000

Land and Natural Resources

A. Public Lands and Primary Federal Responsibilities

CEQ exercises a leadership role in providing independent assessments and analyses of federal land use policies and programs and of federal responsibilities for proper land management. Significant changes in federal land use responsibilities have occurred over the past few years. Among the issues appropriate for review, assessment, and analysis by the Executive Office are: enactment of the Bureau of Land Management Organic Act, determination of federal land responsibilities in Alaska, enactment of the Surface Mining Control and Reclamation Act, and others. Another land use issue involves federal/state/private relationships and activities regarding private lands adjacent to federally-owned or managed lands.

CEQ's FY 1981 public lands study proposals are:

Evaluating Forest Service and BLM environmental planning and monitoring programs to assess agency compliance with the monitoring provisions of the NEPA regulations $10,000

* Evaluating the implementation of the BLM Organic Act to assess the changes such legislation have made in the management of public rangeland $25,000

** Assessing the results of federal agency actions to adopt integrated pest management practices as required by the 1979 Environmental Message $25,000

Examining the effect of the 1977 Surface Mining and Reclamation Act on mining activities conducted on federal lands $20,000

B. Private Lands

There are many important federal programs which affect private lands, both urban and rural, within the Departments of Housing and Urban Development, Interior, Agriculture, and Commerce, in the Environmental Protection Agency, and in other agencies such as the Department of Defense. These programs operate essentially independently and often pursue conflicting goals. A problem of many of the programs is that they lack comprehensive or integrated land use analyses. CEQ exercises leadership in sponsoring

Land and Natural Resources (continued)

programs operate independently and often pursue conflicting goals. A problem of many of the programs is that they lack comprehensive or integrated land use analyses. CEQ exercises leadership in sponsoring essentially interagency studies of the effects of federal programs on private lands, in helping to coordinate interagency programs on these issues, and in developing administrative initiatives to resolve problems that involve private lands and federal programs.

CEQ's FY 1981 study proposals involving federal program/private land issues are:

** Analyzing environmental and land use effects of forecasted demographic changes occurring in the United States over the next 20 years; among the demographic factors to be considered are the large proportion of older and retired Americans in our population, the increasing rate of household formation, in-migration to rural areas, regional population shifts, migration of aliens, general population growth and other significant factors $40,000

Assessing the effects of agriculture, energy and water resource programs on wildlife habitat and identifying and describing successful cases in which wildlife ecosystems and habitat have been protected through the use of a variety of cooperative techniques with private and public agencies; analyzing methods for protecting wildlife habitat and entire ecosystems on private land through public programs $15,000

Analyzing and describing the experiences of local governments in using a variety of legal and economic techniques, including soil erosion protective techniques and economic incentives to protect prime and unique farmland resources $30,000

* Analyzing the environmental effects and opportunities of the EDA, HUD (UDAG) and Farmers Home Administration federal construction assistance programs, including case histories; developing recommendations for innovative approaches to use development aid programs to stimulate not only economic welfare but also energy conservation, protection of existing rural communities and urban neighborhoods and other cultural environmental and aesthetic values $50,000

Land and Natural Resources (Continued)

Reviewing and analyzing critical area protection programs of selected states in order to identify promising techniques that local and state governments might wish to employ and identifying gaps in environmental management or overlaps with federal programs that might be avoided. Critical area to be studied would include wetlands, floodplains, hazardous areas, and key wildlife habitat $40,000

* Examining the need for and the effectiveness of alternative federal systems for protecting and enhancing urban and rural open spaces, parks, and landscapes, including the experience gained with techniques employed under the Pinelands Reserve Act $35,000

* Evaluating the extent and the environmental effects of non-structural flood control measures adopted by federal agencies, with particular attention on the Federal Emergency Management Agency programs and activities $35,000

C. Natural Resources

CEQ has an important leadership role in policy decisions affecting the management of natural resources, particularly because many of these decisions are directly associated with major federal programs for managing the public lands, developing water resources, and regulating mining activities.

CEQ's FY 1981 natural resources related study proposals are:

Evaluating the impact of federal irrigation policies on land use in areas receiving federal water supplies $25,000

* Evaluating the implementation and effectiveness of the President's water resources policy reforms on the Soil Conservation Service, the Corps of Engineers, and the Bureau of Reclamation programs $40,000

* Conducting a detailed study of how well the May 1977 Executive Orders for Protecting floodplains and wetlands were implemented and assessing the impacts and effectiveness of the new programs established by the Executive Orders $25,000

Pollution Control and Resources Conservation

CEQ has a major responsibility to analyze the efficiency and effectiveness of the implementation of federal pollution control programs. CEQ's research efforts in this area focus on issues that are not being covered by an agency, that are of concern to several agencies, or that are not covered by federal legislation but are particularly important. Close coordination with the research programs of other federal agencies concerned with these issues avoids duplication and ensures cooperation. CEQ undertakes important pollution control assessments of such matters as air and water quality, waste treatment, toxic substances, noise, resources recovery and conservation and radiological programs.

CEQ's FY 1981 pollution control and resources conservation related study proposals are:

* Examining alternative waste treatment technologies, including land treatment methods, to determine cost effective waste treatment systems as they relate to different circumstances; included in this effort will be studies of complete system costs such as collector systems and sludge disposal $30,000

Examining the interrelationships and overlaps among pollution control and other federal environmental control programs that affect land use activities, such as the Section 208 program, and determining if improved programs and policies are appropriate $20,000

Conducting a study of waste treatment facility environmental impact statements prepared on grants which were made under the provisions of the new Clean Water Act of 1977 in order to determine the extent of compliance with and attention to the new requirements $25,000

* Assessing the health and environmental implications of using conventional water pollutants as "proxies" for toxic pollutants in developing environmental control requirements $25,000

International Affairs

Since its inception, CEQ has played a major role in developing and assessing federal international environmental policy. Due in part to responsibilities assigned to CEQ by the President in his 1977 and 1979 Environmental Messages, CEQ has increased its examination of international environmental trends and events. One purpose of this effort is to develop a better understanding about factors such as ozone depletion, CO_2 buildup, acid rain, deforestation, desertification, and ocean pollution.

CEQ also assists in the development of the U.S. position for international agreements that involve wildlife matters.

CEQ's FY 1981 international study proposals are:

**	Analyzing the high priority unresolved questions identified by the Global 2000 study and developing appropirate initiatives	$80,000
*	Identifying and analyzing ecological or natural resources of global importance, so that major federal actions significantly affecting these resources outside the United States will be reviewed for their environmental effects under Executive Order 12114	$25,000
	Studying the problem of "runaway" firms, that is companies based in the United States or other developed countries which are shifting operations to LDC's to escape environmental or worker safety regulations	$30,000

TAB D

Development of NEPA Regulations

On May 24, 1977, President Carter issued Executive Order 11991 which directed the Council to promulgate regulations to implement the procedural provisions of the National Environmental Policy Act (NEPA). Since that time, the Council has devoted extensive resources, including the involvement of all staff members, to the development of these regulations and to assisting all federal agencies.

Early in June 1977, the Council held three days of public hearings to solicit recommendations on the content of the regulations. About 50 witnesses appeared. The U.S. Chamber of Commerce coordinated testimony from business interests; the Building and Construction Trades Department of the AFL-CIO coordinated labor interests; the National Conference of State Legislatures coordinated state and local governmental interests; the Natural Resources Defense Council coordinated environmental interests. Scientists, scholars, and members of the general public also testified. Many of the witnesses submitted detailed documents containing analyses of the NEPA process and recommendations.

After the hearings, CEQ staff culled the hearing record to organize the problems and solutions identified by witnesses into a 38-page "NEPA Hearing Questionnaire." About 1100 copies were distributed to interested persons, including all the witnesses, every state governor, and all federal agencies. About 300 fully completed questionnaires were returned. In addition, CEQ staff met personally with staff from all of the federal agencies to gather their ideas on the content of the regulations. All these materials were carefully analyzed by CEQ staff.

Based on these materials, discussions, and analyses CEQ developed a draft set of regulations which were circulated to the federal agencies in December 1977. After initial comments were received and analyzed, CEQ prepared revised informal drafts which were circulated to federal agencies with special experience in implementing NEPA. Redrafts were circulated to agencies with the greatest experience in preparing environmental impact statements. Throughout this period, CEQ staff informally discussed the draft regulations with agency staff. In addition, during this period, CEQ staff met with, listened to, and briefed members of the public, including representatives of business, labor, state and local governments, environmental groups, and others.

On June 9, 1978, CEQ published in the Federal Register its proposed regulations implementing the procedural provisions of NEPA, for a 60 day period of public review and comment. The Council received nearly 500 written comments on the proposed regulations.

CEQ staff read and analyzed each of the written comments and developed recommendations for responding to them. A strong majority of the comments expressed strong support for the proposed regulations as a major improvement over the existing Guidelines. Some comments suggested further improvements and a smaller number of comments expressed more general concerns about the approach and direction taken by the regulations.

CEQ staff then met with individuals and groups, and federal agency representatives. The Council staff sought out all who had expressed reservations about NEPA or the regulations. This process continued until most of the concerns with the proposed regulations were alleviated or satisfied.

A final version of the regulations was approved and published in 43 Fed. Reg. 55978 (November 29, 1978), with a detailed preamble explaining each of the significant comments received and how the Council responded to each. The final regulations implement substantially all the recommendations made by the Commission on Federal Paperwork and the General Accounting Office in their recent studies of the EIS process. In many cases, such as streamlining intergovernmental coordination, the regulations go further than these recommendations.

After their adoption, the Council received letters of support for the NEPA regulations from the U.S. Chamber of Commerce, the National Governors' Association, the Natural Resources Defense Council, the National Wildlife Federation and others.

After adoption of the NEPA regulations, the Council staff prepared a detailed guidance memorandum for all federal agencies indicating how agencies should prepare their own supplementary NEPA procedures for tailoring their activities to the requirements of the NEPA regulations. During 1979 and continuing into 1980, the Council staff has worked with all federal agencies assisting them in the development of their procedures, working out specific problems, reviewing draft procedures and authorizing final procedures for publication. As of this date, all of the Departments, except the Department of Health, Education, and Welfare and the Department of Navy, have published their supplementary procedures in either final or proposed form. The Council staff continues its oversight function to insure promulgation of the remaining agency procedures.

60-531 O - 80 - 71

TAB E

SUMMARY OF COSTS AND FUNDING FOR UPGRADE

FY 1975-79 AND ESTIMATED FY 1980

	FY 1979	(estimated) FY 1980	(projected) FY 1981
Total Costs Associated with UPGRADE System and Its Use	$1,419,000	1,100,000	975,000
• Development of UPGRADE System	128,000	150,000	100,000
• Studies and Data Base Development Involving UPGRADE	406,000	500,000	450,000
• Computer Costs	662,000	250,000	250,000
• Interagency Users' Training, Evaluation and Documentation	58,000	100,000	75,000
• Space and Facilities Cost	165,000	100,000	100,000
Total Resources Provided for UPGRADE System and Its Uses	$1,419,000	1,100,000	975,000
• Resources from CEQ	185,000	160,000	135,000
• Resources from Other Agencies	1,234,000	940,000	840,000
Environmental Protection Agency	1,046,000	640,000	515,000
Department of Energy	--	75,000	75,000
National Cancer Institute	160,000	--	25,000
Health, Education & Welfare (other)	--	30,000	25,000
Geological Survey	--	75,000	80,000
Water Resources Council	--	5,000	--
New Jersey	25,000	70,000	70,000
USDA	3,000	20,000	25,000
Veteran's Administration	--	25,000	25,000
Percentage of Total Resources Provided By: CEQ	13.0	14.5	13.8
Other Agencies	87.0	85.5	86.2

TAB F

PROGRESS REPORTS: Agency Implementation

of

CEQ NEPA Regulations

and

E.O. 12114

COUNCIL ON ENVIRONMENTAL QUALITY

Third Progress Report on Agency Procedures Implementing Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions"

January 4, 1979.

AGENCY: Council on Environmental Quality, Executive Office of the President.

ACTION: Information Only: Publication of Third Progress Report on Agency Procedures Implementing Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions"

SUMMARY: On January 4, 1979, President Carter issued Executive Order 12114 entitled "Environmental Effects Abroad of Major Federal Actions." Executive Order 12114 requires all federal agencies taking major federal actions outside the U.S. which are encompassed by and not exempted from the Order, to have in effect procedures implementing the Order within 8 months after January 4, 1979 (i.e., by September 4, 1979). The Order requires agencies to consult with the Council on Environmental Quality and the Department of State before p[illegible]ng their implementing procedures in [illegible]t. The Council has previously published certain explanatory documents concerning implementation of E.O. 12114 (44 FR 18722, March 29, 1979). On September 26, 1979 the Council published its first progress report on agency procedures implementing the Executive Order (44 FR 55410), and on November 8, 1979 a second progress report (44 FR 64101). The purpose of this third progress report is to provide an update on where affected agencies stand in this process.

FOR FURTHER INFORMATION CONTACT: Nicholas C. Yost, General Counsel, Council on Environmental Quality, 722 Jackson Place, N.W., Washington, D.C. 20006; (202) 395–5750.

Third Progress Report on Agency Procedures Implementing E.O. 12114

The progress report lists federal agencies in two categories. In Category 1 are agencies that have published proposed or final procedures implementing Executive Order 12114. Category 2 lists agencies that have prepared draft procedures or are in the process of developing such procedures, and contains an estimated time such p[illegible]dures will be published in the Federal Register.

Category 1—Federal Agencies That Have Published Proposed or Final Procedures Implementing E.O. 12114

Department of Defense, Final Procedures issued April 12, 1979 (44 FR 21786)

Export-Import Bank of the United States, Final [1] Procedures issued August 20, 1979 (44 FR 50813)

Overseas Private Investment Corporation, Final [1] Procedures issued August 31, 1979 (44 FR 51385)

National Oceanic and Atmospheric Administration, Proposed Revised NOAA Directive Implementing NEPA and E.O. 12114, October 22, 1979 (44 FR 60779)

Department of Energy, Proposed Guidelines Issued September 6, 1979 (44 FR 52146)

Department of State, (1) Foreign Affairs Manual Circular No. 807A, Procedures Implementing E.O. 12114 [1] (except nuclear actions) November 21, 1979 (44 FR 67004). (2) "Unified Procedures Applicable To Major Federal Actions Relating To Nuclear Activities Subject To Executive Order 12114," [1] November 13, 1979 (44 FR 65560)

Agency for International Development, Proposed Environmental Regulations, October 1, 1979 (44 FR 56378)

Department of Transportation, Contained in NEPA procedures (DOT Order 5610.1C) issued October 1, 1979 (44 FR 56420), Paragraph 16

National Aeronautics and Space Administration, Contained in NEPA procedures, Section 1216.321 issued July 30, 1979 (44 FR 44490–44491)

Department of Agriculture, Proposed amendments (containing procedures implementing E.O. 12114) to departmental NEPA procedures, November 15, 1979 (44 FR 65768)

Environmental Protection Agency, Proposed procedures implementing E.O. 12114, November 29, 1979 (44 FR 68776)

Category 2—Federal Agencies Scheduled To Publish Procedures Implementing E.O. 12114 in the Near Future

Department of Commerce, Proposed procedures implementing E.O. 12114 are awaiting final approval. (Publication anticipated by February 15, 1980).

Department of Treasury, Proposed procedures implementing E.O. 12114 are awaiting final approval. (Publication anticipated by February 15, 1980).

Department of Interior, Draft procedures implementing E.O. 12114 are under preparation. These procedures are expected to be published in the near future.

Dated: January 24, 1980.

Nicholas C. Yost,
General Counsel.

[FR Doc. 80-2818 Filed 1-28-80; 8:45 am]
BILLING CODE 3125-01-M

[1] Although not published in proposed form for public review and comment, the preamble provides an opportunity for public comment on final procedures.

Sixth Progress Report on Agency Implementing Procedures Under the National Environmental Policy Act

AGENCY: Council on Environmental Quality, Executive Office of the President.

ACTION: Information Only: Publication of Sixth Progress Report on Agency Implementing Procedures Under the National Environmental Policy Act.

SUMMARY: In response to President Carter's Executive Order 11991, on November 29, 1978, the Council on Environmental Quality issued regulations implementing the procedural provisions of the National Environmental Policy Act ("NEPA"). 43 FR 55978–56007; 40 CFR 1500–08) § 1507.3 of the regulations provides that each agency of the Federal Government shall have adopted procedures to supplement the regulations by July 30, 1979. The Council has indicated to Federal agencies its intention to publish progress reports on agency efforts to develop implementing procedures under the NEPA regulations. The purpose of these progress reports, the sixth of which appears below, is to provide an update on where agencies stand in this process and to inform interested persons of when to expect the publication of proposed procedures for their review and comment.

FOR FURTHER INFORMATION CONTACT: Nicholas C. Yost, General Counsel, Council on Environmental Quality, 722 Jackson Place, N.W., Washington, D.C. 20006; 202–395–5750.

Sixth Progress Report on Agency Implementing Procedures Under the National Environmental Policy Act

At the direction of President Carter (Executive Order 11991), on November 29, 1978, the Council on Environmental Quality issued regulations implementing the procedural provisions of the National Environmental Policy Act ("NEPA"). These regulations appear at Volume 43 of the Federal Register, pages 55978–56007 and in forthcoming revisions to Volume 40 of the Code of Federal Regulations, Sections 1500–1508. Their purpose is to reduce paperwork and delay associated with the environmental review process and to foster environmental quality through better decisions under NEPA.

Section 1507.3 of the NEPA regulations provides that each agency of the Federal government shall adopt procedures to supplement the regulations. The purpose of agency "implementing procedures," as they are called, is to translate the broad standards of the Council's regulations

into practical action in Federal planning and decisionmaking. Agency procedures will provide government personnel with additional, more specific direction for implementing the procedrual provisions of NEPA, and will inform the public and State and local officials of how the NEPA regulations will be applied to individual Federal programs and activities.

In the course of developing implementing procedures, agencies are required to consult with the Council and to publish proposed procedures in the Federal Register for public review and comment. Proposed procedures must be revised as necessary to respond to the ideas and suggestions made during the comment period. Thereafter, agencies are required to submit the proposed final version of their procedures for 30-day review by the Council for conformity with the Act and the NEPA regulations. After making such changes as are indicated by the Council's review, agencies are required to promulgate their final procedures. Although CEQ's regulations required agencies to publish their procedures by July 30, 1979 a number of Federal agencies did not meet this deadline. We stress, however, that the CEQ regulations are in effect now and are binding on all agencies of the Federal government now, whether or not agencies are on time or laggard with their own procedures.

The Council published its first progress report on agency implementation procedures on May 7, 1979, its second report on July 23, 1979, its third report on September 26, 1979, its fourth report on November 2, 1979 and its fifth progress report on December 14, 1979. (44 FR 26781–82; 44 FR 43037–38; 44 FR 55408–55410; 44 FR 63132–63133; 44 FR 72622–72623.) The sixth progress report appears below. The Council hopes that concerned members of the public will review and comment upon agency procedures to insure that the reforms required by President Carter and by the Council's regulations are implemented. Agencies preparing implementing procedures are listed under one of the following four categories:

Category No. 1: Final Procedures Have Been Published

This category includes agencies whose final procedures have appeared in the Federal Register.

Central Intelligence Agency, 44 FR 45431 (Aug. 2, 1979)
Department of Agriculture, 44 FR 44802 (July 30, 1979)
  Animal and Plant Health Inspection Service, 44 FR 50381 (Aug. 28, 1979) [correction: 44 FR 51272 (Aug. 31, 1979)]
Forest Service, 44 FR 44718 (July 30, 1979)
Soil Conservation Service, 44 FR 50576 (Aug. 29, 1979)
Rural Electrification Administration (at the Federal Register)
Department of Defense, 44 FR 46841 (Aug. 9, 1979)
Department of Transportation, 44 FR 56420 (Oct. 1, 1979)
Federal Aviation Administration, 45 FR 2244 (Jan. 10, 1980)
Department of the Treasury, 45 FR 1828 (Jan. 8, 1980)
Environmental Protection Agency, 44 FR 64174 (Nov. 6, 1979)
Export-Import Bank, 44 FR 50810 (Aug. 30, 1979)
General Services Administration, 45 FR 83 (Jan. 2, 1980)
Public Buildings Service (see 44 FR 65675, Nov. 14, 1979)
International Communications Agency, 44 FR 45489 (Aug. 2, 1979)
Marine Mammal Commission, 44 FR 52837 (Sept. 11, 1979)
National Aeronautics and Space Administration, 44 FR 44485 (July 30, 1979) [corrections: 44 FR 49650 (Aug. 24, 1979); 44 FR 69920 (Dec. 5, 1979)]
National Capitol Planning Commission, 44 FR 64923 (Nov. 8, 1979)
National Science Foundation, 45 FR 39 (Jan. 2, 1980)
Overseas Private Investment Corporation, 44 FR 51385 (Aug. 31, 1979) [NEPA Procedures are contained in this agency's procedures implementing Executive Order 12114 cited above.]
Postal Service, 44 FR 63524 (Nov. 5, 1979)
Water Resources Council, 44 FR 69921 (Dec. 5, 1979)

Category No. 2: Proposed Procedures Have Been Published

This category includes agencies whose proposed procedures have appeared in the Federal Register. Those agencies whose final procedures are expected within 30 days are marked with a single asterisk (*); those expected within 60 days by a double asterisk (**).

ACTION, 44 FR 60110 (Oct. 18, 1979)
Advisory Council on Historic Preservation, 44 FR 40653 (July 12, 1979)*
Agency for International Development, 44 FR 56378 (Oct. 1, 1979)
Civil Aeronautics Board, 44 FR 45637 (Aug. 3, 1979)*
Consumer Product Safety Commission, 44 FR 62526 (Oct. 31, 1979)
Department of Agriculture:
  Agriculture Stabilization and Conservation Service, 44 FR 44167 (July 27, 1979) [correction: 44 FR 45631 (Aug. 3, 1979)]*
Department of Defense:
  Department of the Air Force, 44 FR 44118 (July 26, 1979)*
  Department of the Army, Corps of Engineers, 44 FR 38292 (June 29, 1979)*
  Department of the Army, 45 FR 1086 (Jan. 4, 1980)
Department of Commerce:
  National Oceanic and Atmospheric Administration, 44 FR 60779 (Oct. 22, 1979)*
Department of Energy, 44 FR 42136 (July 18, 1979)*
  Federal Energy Regulatory Commission, 44 FR 50052 (Aug. 27, 1979)*
Department of Housing and Urban Development, 44 FR 67906 (Nov. 27, 1979)*
  Community Development Block Grant Program, 44 FR 45568 (Aug. 2, 1979)*
Department of the Interior, 44 FR 40436 (July 10, 1979)*
  Water and Power Resources Service, 44 FR 47627 (Aug. 14, 1979)*
  Heritage Conservation and Recreation Service, 44 FR 49523 (Aug. 23, 1979)*
  Fish and Wildlife Service, 44 FR 65822 (Nov. 15, 1979)**
Department of Labor, 44 FR 69675 (Dec. 4, 1979)
Department of Justice, 44 FR 43751 (July 26, 1979)*
  Drug Enforcement Agency, 44 FR 43754 (July 26, 1979)*
  Immigration and Naturalization Service, 44 FR 43754 (July 26, 1979)*
  Bureau of Prisons, 44 FR 43753 (July 26, 1979)*
Department of State, 44 FR 66838 (Nov. 21, 1979)*
Department of Transportation:
  Coast Guard, 44 FR 56308 (Oct. 15, 1979)*
  Federal Highway Administration, 44 FR 59438 (Oct. 15, 1979)*
  Federal Railroad Administration, 44 FR 40174 (July 9, 1979)*
  Urban Mass Transportation Administration, 44 FR 59438 (Oct. 15, 1979)*
Federal Communications Commission, 44 FR 38913 (July 3, 1979)**
Federal Emergency Management Agency, 44 FR 70197 (Dec. 6, 1979)
Federal Maritime Commission, 44 FR 29122 (May 18, 1979)*
Federal Trade Commission, 44 FR 42712 (July 20, 1979)
International Boundary and Water Commission (U.S. Section), 44 FR 61665 (Oct. 26, 1979)*
Pennsylvania Avenue Development Corporation, 44 FR 45925 (Aug. 6, 1979)
Small Business Administration, 44 FR 45002 (July 31, 1979)*
Tennessee Valley Authority, 44 FR 39679 (July 6, 1979)*
Veterans Administration, 44 FR 48281 (Aug. 17, 1979)*

Category No. 3: Anticipate Publication of Proposed Procedures by Mar. 1, 1980

This category includes agencies that are expected to publish proposed procedures in the Federal Register by Mar. 1, 1980.

Arms Control and Disarmament Agency
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Mines
Department of Health, Education and Welfare
Federal Reserve System
Geological Survey
Law Enforcement Assistance Administration
National Credit Union Administration
National Park Service
Nuclear Regulatory Commission

Office of Surface Mining Reclamation and Control
Science and Education Administration (Department of Agriculture)

Category #4: Publication of Proposed Procedures Delayed Beyond March 1, 1980

This category includes agencies that are *not* expected to publish proposed procedures in the Federal Register by Mar. 1, 1980.

Appalachian Regional Commission
Community Services Administration
Department of the Navy
Defense Logistics Agency
Economic Development Administration
Farm Credit Administration
Farmers Home Administration
Federal Deposit Insurance Corporation
Federal Home Loan Bank Board
Federal Savings and Loan Insurance Corporation
Food and Drug Administration
Interstate Commerce Commission

Metro

National Highway Traffic Safety Administration
Saint Lawrence Seaway Corporation
Securities and Exchange Commission

The development of agency implementing procedures is a critical stage in Federal efforts to reform the NEPA process. These procedures must, of course, be consistent with the Council's regulations and provide the means for reducing paperwork and delay and producing better decisions in agency planning and decisionmaking.

Interested persons will have the opportunity to make their suggestions for improving agency procedures when they are published in the Federal Register in proposed form. Broad public participation at this crucial juncture could go a long way toward ensuring that the goals of the NEPA regulations are widely implemented in the day-to-day activities of government.

Nicholas C. Yost,
General Counsel.
January 24, 1980.
[FR Doc. 80-3120 Filed 1-28-80; 8:45 am]
BILLING CODE 3125-01-M

DEPARTMENT OF DEFENSE

Department of the Army

Mission Realinement at Fort Indiantown Gap, Annville, Pa; Intent To Prepare an Environmental Impact Statement

Notice is hereby given of intent to prepare an Environmental Impact Statement (EIS) concerning the possible realignment of the ongoing mission of Fort Indiantown Gap, Annville, Pennsylvania.

The EIS will place special emphasis on socio-economic factors in the Fort Indiantown Gap area. The current mission of Fort Indiantown Gap is to provide garrison, administrative, training, and logistical support to Army units and activities at Fort Indiantown Gap and in its assigned geographic area. The proposed realignment of the US Army mission at Fort Indiantown Gap would reduce Army occupancy at Fort Indiantown Gap in an effort to improve Army combat capabilities through improved management of Army resources. Three alternatives will be considered; (1) terminating Army occupancy at Fort Indiantown Gap, with the Department of Military Affairs, Commonwealth of Pennsylvania supporting Army tenants and Reserve Components training at Fort Indiantown Gap, and Fort Meade assuming the area support mission; (2) retaining Fort Indiantown Gap as a subinstallation of Fort Meade with Fort Meade assuming the area support mission; and (3) retaining the status quo. The Army's preferred alternative, at present, is Alternative 1.

A meeting will be held at Fort Indiantown Gap, Building 1166 at 7:30 pm on 20 Feb 79 to consider the scope of issues to be addressed in the EIS and to identify the significant issues. Federal, state, and local agencies, private organizations, and interested persons are encouraged to attend and participate in the meeting. Comments as to the scope of issues and impact analysis to be included in the EIS also may be mailed to Headquarters, Department of the Army, ATTN: DAEN-ZCI, Washington, DC 20310. Further information concerning the proposed realignment and the EIS process may be obtained from MAJ Nataluk, (703) 694-3986.

Daniel R. Voss,
Acting Deputy for Environmental, Safety and Occupational Health OASA(IL&FM)
[FR Doc. 80-2735 Filed 1-28-80; 8:45 am]
BILLING CODE 3710-08-M

Office of the Secretary

Organization of the Joint Chiefs of Staff; Joint Strategic Target Planning Staff Scientific Advisory Group; Closed Meeting

Pursuant to the provisions of Section 10 of Pub. L. 92-463, effective January 5, 1973 as amended by Pub. L. 94-409, notice is hereby given that a meeting of the Joint Strategic Target Planning Staff Scientific Advisory Group will be held at Offutt Air Force Base, Nebraska, during the period: Tuesday, April 1, 1980 through Thursday, April 3, 1980.

The entire meeting is devoted to the discussion of classified information within the meaning of section 552b(c)(1), Title 5 of the U.S. Code, and therefore will be closed to the public.

H. E. Lofdahl,
Director, Correspondence and Directives, Washington Headquarters Services, Department of Defense.
January 23, 1980.
[FR Doc. 80-2741 Filed 1-28-80; 8:45 am]
BILLING CODE 3810-70-M

Task Force on Evaluation of Audit, Inspection, and Investigative Components of the Department of Defense; Advisory Committee Meeting

Pursuant to the Federal Advisory Committee Act, as amended, section 10, 5 U.S.C. app. section 10 (1976), notice is hereby given that a meeting of the Task Force on Evaluation of Audit, Inspection and Investigative Components of the Department of Defense will be held on February 11 and 12, 1980 from 1000 to 1200 and 1330 to 1630 each day in Room 3D973, The Pentagon, Washington, D.C.

The mission of the Task Force is to advise Congress and the Secretary of Defense with respect to the effectiveness of the audit, inspection and investigative components of the Department of Defense.

The meeting will be open to the public.

H. E. Lofdahl,
Correspondence and Directives, Washington Headquarters Services, Department of Defense.
January 23, 1980.
[FR Doc. 80-2742 Filed 1-28-80; 8:45 am]
BILLING CODE 3810-70-M

DEPARTMENT OF ENERGY

National Petroleum Council; Oil Supply, Demand and Logistics Task Group and the Coordinating Subcommittee of the Committee on Refinery Flexibility; Meetings

Notice is hereby given that the Oil Supply, Demand and Logistics Task Group and the Coordinating Subcommittee of the National Petroleum Council's Committee on Refinery Flexibility will meet on Friday, February 15, 1980 and Tuesday, February 19, 1980, respectively in the Standard Oil Company of California Building, 225 Bush Street, San Francisco, California, beginning at 10:00 a.m.

The National Petroleum Council provides technical advice and information to the Secretary of Energy

WEDNESDAY, FEBRUARY 18, 1980.

NATIONAL COMMISSION ON AIR QUALITY

WITNESSES

SENATOR GARY HART, CHAIRMAN, NATIONAL COMMISSION ON AIR QUALITY (NCAQ)
HON. TOM McPHERSON, VICE CHAIRMAN, NCAQ
WILLIAM H. LEWIS, JR., DIRECTOR, NCAQ
KATHERINE Y. CUDLIPP, GENERAL COUNSEL, NCAQ
RICHARD A. PENNA, ASSISTANT DIRECTOR FOR RESEARCH, NCAQ
MORRIS A. WARD, ASSISTANT DIRECTOR FOR PUBLIC AFFAIRS AND ADMINISTRATION, NCAQ

FUNDING HISTORY

	Requested	Appropriated
1978 (supplemental)	$2,000,000	$500,000
1979	4,000,000	2,000,000
1980	6,000,000	5,500,000
1981	2,500,000	
Total	14,500,000	8,000,000

Mr. TRAXLER. The Committee will come to order. I want to welcome our witnesses. We are pleased to have all of you before us.

The National Commission on Air Quality was established by Section 323 of the Clean Air Act Amendments of 1977. The legislation requires the Commission to prepare a series of reports to the Congress on a number of specified issues.

The Commission is composed of 13 members including the Chairman and ranking minority members of the Senate Committee on Public Works and Environment and the House Committee on Interstate and Foreign Commerce, or their designates, and nine public members appointed by the President. The Commission Chairman is elected by the members. Currently there are twelve commissioners and one public vacancy, is that right? Have you nominated anyone to fill that vacancy?

Senator HART. First of all, thank you for your time and interest in hearing us today.

The issue of the filing of that vacancy I think is up to the White House. That is a public member.

Mr. LEWIS. It is a public member. I could give the status report with respect to that.

Senator HART. First of all, Mr. Chairman, let me introduce the people with us for the record. As you know, our colleague Congressman Stockman is a member of this Commission, a valuable member. He is not able to be here today. I understand he had a

conflict. Representative Tom McPherson, member of the state legislature of Florida, is our Vice Chairman. He is with us today. Mr. Lewis, our Staff Director; Ms. Katherine Cudlipp, our General Counsel; Mr. Richard Penna, Assistant Director; and Mr. Morris "Bud" Ward, Assistant Director.

We have all of the principal staff people with us. Mr. Lewis will give you a status report on the public member vacancy.

Mr. TRAXLER. Just as an aside, what is the life of the Commission?

Senator HART. I will get into that in my remarks, if I may. That is one of the issues, as you properly noted when you opened this up, the Commission was created by the law passed in August 1977. It had a 3 year life by statute. Because of almost exactly a year delay on the part of the White House in nominating public members, we in fact got started a year late, in fact got our business started in November 1978, so we are in the process now of trying to get an extension. It would then be August 1981.

Mr. TRAXLER. In response to my question, have you nominated anyone?

Mr. LEWIS. The situation is that the White House has selected someone that is going through the clearances at this time. It will take approximately two weeks before the person will be appointed formally.

Senator HART. But that is not interferring with the work of the Commission.

Mr. TRAXLER. Senator, may we have your statement?

Senator HART. I would like with your consent to insert the formal statement, and summarize a few points if I may.

Mr. TRAXLER. Fine.

GENERAL STATEMENT

Senator HART. I will summarize two or three cogent points, one of which I have already done. That is the year delay. We are working currently with the Senate Environment and Public Works Committee to attach as an amendment to the Noise Control Act an extension of the Commission. Through a lot of negotiations we are hopeful of getting that done fairly quickly.

We are more than halfway through the work of the Commission, in spite of the year delay. That work mostly has to do with preparing a final report and recommendations to Congress on air quality programs.

The Administration is supporting the one-year extension. That will allow us to evaluate the data developed by contract studies and to make policy recommendations.

For your purposes, I think the principal issue before us this year is our budget request of $2.5 million. That includes a reappropriation of $500,000 that was initially appropriated for fiscal year 1978. Because of the year delay, that money lapsed, and we are working again as with the extension with the Senate Environment and Public Works Committee to get that $500,000 reauthorized, so that it could be reappropriated for fiscal year 1981. That is one of the items that I think you may want to focus on.

Mr. TRAXLER. We are keenly interested in that because of our House rules, as you know.

Senator HART. Yes, and finally with very limited funding the Commission I think is serving a very vital purpose in conducting studies of air quality and related energy and economic issues. This extension, I want to stress for your purposes, does not represent merely the perpetuation of a new commission bureaucracy. It is something all of us have looked at very closely and feel is necessary for us to effectively conclude what we believe is very important work, and of course we are available to answer any comments or questions you have.

[The statement follows:]

Good afternoon. Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to appear before you today as chairman of the National Commission on Air Quality in support of the Commission's fiscal year 1981 budget request.

Mr. Chairman, the air quality issues being examined by this Commission are of profound and increasing interest to this nation. In establishing this Commission in 1977, the Congress clearly did not intend that it simply conduct a series of arcane studies on an issue of limited importance and of only passing interest. The need to resolve this nation's related energy, economic and environmental problems make the work of this Commission extremely timely; I cannot overestimate the importance of Congress's having the benefits of a thorough examination of this nation's air quality program. As I mentioned in this hearing last year, the circumstances facing this nation require that the country take very seriously the work of this Commission.

Despite very austere funding of $10 million over three years, the Commission now has gone more than half the distance in fulfilling Congress's hope for a comprehensive review of the Clean Air Act. Again as I mentioned last year, my constituents are saying many of the same things that your constituents no doubt are saying: They do not want their tax dollars wasted. They do want more efficiency and more effectiveness in their government programs. We have assured that our $10 million authorization is stretched to the utmost to guarantee Congress the most comprehensive air quality report. Having made these efforts at frugality, Mr. Chairman, I have come to the conclusion now that the Commission fully deserves the additional year to complete its reporting requirements in a responsible way. Even more importantly, the Congress and the country as a whole deserve the benefits of the Commission's best thinking on air quality issues as we prepare for future consideration of our air quality program and goals.

Congress established the National Commission on Air Quality in the 1977 Amendments to the Clean Air Act. Our studies are to provide guidance on alternative means for achieving healthful air quality, consistent with other national goals. The Commission is compromised of four congressional members—Senator Robert Stafford and myself and Congressmen Harley Staggers and Dave Stockman—and nine public members appointed by the President.

Mr. Chairman, in supporting this budget request, the Commission and the Office of Management and Budget are actively seeking a one-year extension of the Commission's final reporting deadline to August 7, 1981. Although the Commission was established in the August 1977 Clean Air Act Amendments, its public members were not appointed by the President for more than a year after that. It was not until July 1978 that enough public members had been appointed to allow us to hold an initial organizational meeting. The Commission therefore is seeking not an additional year for its work, but rather just the full three-year period which Congress believed necessaary for conducting studies of this broad scope. Furthermore, we are determined to fulfill our mandate with no more than the original actual spending levels authorized in 1977.

After the one-year delay in the President's appointments of our public members, we now are beyond the halfway point in meeting our congressional mandate to review and report on the Clean Air Act. In addition to the substantial research being conducted by our own staff, the Commission so far has approved contract awards totalling nearly $3.4 million ($3,387,737) for research to carry out our Clean Air Act Section 323 mandate. The Commission for fiscal year 1981 is requesting an appropriation of $2.5 million for completion of the research and analyses initiated

since last year. The Commission's intent is to complete and distribute broadly for public review and comment a draft of our final report and recommendations no later than March 31 of next year. The Commission then would submit the final report and recommendations by August 1981.

Mr. Chairman, as you noted in these same hearings last year, the scope of the nation's air quality program and the associated public health, economic and energy development impacts make the work of this Commission very important to Congress in its future deliberations on air quality issues. There is a pressing need tc acquire a better understanding of the nature and opportunities presented by the relationships between our economic, environmental, and energy goals. In this final year of the Commission's existence prior to transmitting our conclusions and recommendations, we will tie together our findings and those of others conducting research in both the public and private sectors. We will present this information to the Congress for its use in future air quality consideration.

I think it important to emphasize that in seeking a one-year extension of our final reporting deadline and in seeking a fiscal 1981 appropriation, the Commission is not requesting authority to spend more than the $10 million initially authorized over three years. The delays in the naming of our public member Commissioners cost the Commission not only time but also important funding: One million dollars ($1 million) initially to have been available to the Commission in fiscal 1977 and another five-hundred thousand dollars ($500,000) in fiscal 1978 were allowed to lapse because of those delays. Nonetheless, we plan to obligate no more than the $10 million initially authorized; rather we have determined that prudent use of recent and ongoing air quality studies conducted independently of the Commission studies will allow us to live within the $10 million originally authorized. Experts on all sides of the air quality debate agree that this funding is restrictive given the scope of Congress's mandate.

Mr. Chairman, allow me to just highlight several of the most significant components of the Commission's fiscal 1981 budget proposal.

The largest single component of our request is the $1.2 million for compensation for 37 full-time permanent positions and for our nine public Commissioners. The total reflects a smaller staff than the Commission anticipates at the beginning of the fiscal year because of our allowance for attrition which we anticipate will occur naturally as our termination approaches. However, with 32 complex research studies outstanding, it is of critical importance that the Commission retain much of its highly competent professional staff throughout the analysis of those studies, evaluation of public comments and suggestions, and preparation of the final report and recommendations.

The $595,000 requested for Other Services will primarily cover additional research activities needed to analyze promising alternative control strategies and conduct follow-up studies of issues arising from our fiscal 1979 and fiscal 1980 studies.

The next largest single budget category will provide $200,000 for preparation and publication of our final report and recommendations to the Congress and to cover additional printing costs throughout the year.

Mr. Chairman, the Commission is requesting appropriations of $185,000 to cover travel expenses throughout the year. In addition to providing for travel to Washington, D.C., for the Commission's public members for regular meetings and hearings, this total is necessary to assure effective management of $5 million in contract studies and to assure through regional workshops that the Commission's draft report and recommendations undergo thorough public review before being submitted to the Congress as final report and recommendations.

Additional budget categories apply to matters such as office space rental, purchase and lease of supplies, and communications and utilities, Mr. Chairman.

We will be pleased to respond to any questions the Subcommittee may have concerning specifics of our budget submission.

Thank you.

Mr. TRAXLER. Thank you very much.

Mr. Coughlin, did you have a question at this time?

Mr. COUGHLIN. I have no questions at this time.

Mr. TRAXLER. Senator, I think that your Commission is well aware of the House problem relative to your authorization, and I am sure, as you indicated, you will be seeking legislation to correct that?

Senator HART. Yes.

Mr. TRAXLER. So we can do whatever is necessary then in this Subcommittee, without seeking some kind of a rule that waives the House rules?

Senator HART. Yes. We would hope to avoid that and I think we can.

Mr. TRAXLER. Excellent. Has the legislation proposing the extension of the report deadline been introduced yet?

Mr. LEWIS. The situation actually is that the Noise Control Act was passed by the Senate in September and it was subsequently passed by the House. There are differences between the two bills. The bill now has gone back from the House to the Senate, and in the Senate they intend to add our amendment.

The bill normally would have gone to conference directly from the House, but the House had worked out to send the bill back to the Senate, and at the current time what they are essentially doing is working out the differences between the House and the Senate. At that time our amendment would be added and it will go to conference very quickly, within a month we should have the extension accomplished.

Mr. TRAXLER. The chances look good?

Mr. LEWIS. Yes.

Mr. TRAXLER. Turn to page 6 of your Research Functions and Operations. Part one of the Commission's Plan of Study is an analysis of the National Ambient Air Quality Standards. The methodology involves examining EPA research, procedures, criteria, definitions and resources. In the course of this or other parts of the Plan of Study, is the Commission receiving any assistance from EPA either in the form of people or other resources?

Mr. LEWIS. The Commission is not receiving any direct assistance in the way of personnel. We certainly are working directly with EPA to make sure we are taking advantage of studies and other things that have been done by EPA so that we can critique those, but we are not actually receiving those resources on a loan from EPA.

REGIONAL STUDIES

Mr. TRAXLER. Part two of the Plan of Study is described on pages 6 and 7 of your budget submission. The methodology of reviewing prevention of significant deterioration of attainment areas includes a study of selected regions. What regions were chosen for study, and how were they selected?

Mr. LEWIS. The regions that have been chosen are the southern California area, where they have the most severe air quality problems in the country, especially an ozone problem.

The Four Corners area, which is an area that basically is an area of clean air that is anticipated for substantial increased energy development.

The Ohio River Valley area, which is an older area that has air quality problems, but it is not an area that has been growing particularly.

The New York-Hartford area, which was an area selected primarily because of the fact that it again is not an area that is growing but does have a transport of ozone problem. And Minneapolis-St.

Paul, which is a medium-sized area which doesn't seem to have severe air quality problems, but seems to be able to comply with the requirements. And so with these five areas we think that we have a cross-section of areas of the country.

The purpose in selecting those areas was that we get that cross-section look. In addition to doing that, though, we have seven other studies that look at seven other areas for certain parts of their programs, principally focusing on rule development and enforcement areas as well, so we feel with those, together with studies that we plan to conduct with our research funds in 1981, that we will be able to get a broad look at the country.

I might focus on the money for 1981, since that is of particular concern to you. What we are proposing to do there is take some of the information that we obtained from our five regional studies, specifically relating to policy alternatives that we are looking at, to see how those policy alternatives will look in certain areas of the country which have been studied substantially by EPA. Those are Houston, St. Louis, Philadelphia, and Chicago.

Those four areas are areas that we think will again give us another look at four urban areas that have very serious air quality problems.

Mr. TRAXLER. Did you have the staff recommendations in terms of the regions that are to be considered?

Mr. LEWIS. Yes, we did. The staff recommendations were that we look at all of these areas except for the Ohio River Valley, and the Ohio River Valley recommended that we look at the TVA area instead, and it was decided by the Commission members that looking at the Ohio River Valley would actually be a better area to look at.

ANALYSES OF MOTOR VEHICLE EMISSIONS

Mr. TRAXLER. Part four of the Plan of Study deals with the review of Vehicle Emission Standards. Included in the methodology is an examination of the effectiveness of inspection and maintenance programs for in-use vehicles. Do you have any tentative results on this research?

Mr. LEWIS. No. That is a study that is really in the formative stages, and we have not concluded it yet, and so we do not have any recommendations at this time.

Mr. TRAXLER. That is a drastic change in the thrust of our air pollution efforts from the past, and it places the specific responsibility upon the consumer. Do you think such a program would be publicly and practically acceptable, perhaps politically popular?

Senator HART. I think one of the things we want to test to a certain degree, in answer to those questions, is the 1977 amendments. It became apparent to me anyway that what the Congress could do best was to look at the question of new car standards, performance standards, and try to get the states involved in the control of on-road cars, and that meant that we had to leave some flexibility.

My own State of Colorado is presently battling through the State legislature a question of whether to have a mandatory inspection program or some other device to meet the standards, but as you

know, we turn over the cars in this country roughly at a rate of 10 percent a year, and it would take the Congress dealing with new cars about a decade to get those standards into effect on all the cars on the road, and you would still, even then, have some clunkers out there as they come in very fast.

Mr. TRAXLER. Is there any need that at some point in time we would want to consider a limitation on the amount of dollars that the consumer would be required to bear of any type of an inspection maintenance program?

Senator HART. I certainly think that would be a legitimate subject for debate here. I do think, however, the states ought to have the principal authority and responsibility for controlling cars on the road, since traditionally licensing and authorization of vehicle operations has heen conducted at the state level, and that is one of the items of debate in the Colorado Legislature now—whether to put up a total amount on there, so the people don't get ripped off by unscrupulous operators tinkering with their carburetors and charging $500 or something.

COST AND BENEFIT ANALYSES

Mr. TRAXLER. The issue in part five, costs and benefits associated with air pollution control, is obviously of great concern to the Commission, and I am sure to the public and the Congress as well. The second item listed under the methodology is "Sponsor workshops, to determine accepted methodologies for assessing both costs and benefits." The result of this research could be greatly affected by the people who attend the workshops and how they make their decisions, and what they determine acceptable.

Have you made a decision yet as to who will be attending and how many workshops you are planning? How are these individuals selected to participate in the workshops?

Senator HART. Mr. Lewis should answer that, but before he does, if I could ask the indulgence of the Chairman of the Committee to excuse myself for business over on the other side, and leave the Committee in the very capable hands of the Director and the Vice-Chairman, I would appreciate it.

Mr. TRAXLER. We appreciate your presence. Thank you, Senator.

Mr. LEWIS. With respect to the cost and the benefit workshops that you mentioned, at this point we have had both a cost and benefit panel. In selecting the members, an attempt was made to get a broad cross-section of experts on the issue of costs, primarily economists, but we also tried to bring in experts in health and other issues that were relevant.

The same was true with respect to the benefit panel. They are now in the process of developing a report for the Commission, but we think we had a broad cross-section of interests. One way to insure that was we had the Commission members actively involved in selecting these people, and made certain that the various perspectives that would be represented on the Commission were also represesnted by experts on the panels.

Mr. TRAXLER. Of course, I always like to know, being from the State of Michigan, whether or not you had any automobile industry representatives on the panel.

Mr. LEWIS. On the cost-benefit panel?

Ms. CUDLIPP. There was someone from General Motors, if I am not mistaken, on the benefit panel.

Mr. LEWIS. There was a representative of General Motors on the panel.

Ms. CUDLIPP. The gentleman's name escapes me at the moment, but we can provide that for the record.

[The information follows:]

The following General Motors Corporation officials have served on expert panels established by the Commission: Walter A. Albers, Ph.D., head of societal analysis, General Motors Research Laboratories, Warren, Mi.—Cost Methodolgy Panel; Richard C. Schwing, Ph.D., societal analysis, General Motors Research Laboratories, Warren, Mi.—Benefits Methodology Panel; Fred W. Bowditch, executive assistant to the vice president, environmental activities staff, General Motors Corporation, Warren, Mi.—Regulatory Reform Panel; and Richard Klimmisch, environmental science staff, General Motors Technical Center, Warren, Mi.—Oxidant Formation Panel.

Mr. TRAXLER. Thank you. How many workshops are you planning?

Mr. LEWIS. At the current time we are planning approximately seven for this year. We anticipate that we will have three additional panels next year, which will deal primarily with following up the results of the panels that we have this year. They will relate to modeling, photochemical oxidants, and the transport issue.

Mr. TRAXLER. And is it anticipated that the Commission itself will play a role in the selection of participants?

Mr. LEWIS. Absolutely. The Commission will.

Mr. TRAXLER. The panelists?

Mr. LEWIS. We will review who the panelists are.

Mr. TRAXLER. Which industries were selected for study under Part Six, The Impact of Air Pollution Abatement Activities on Selected Activities? How were they selected?

Mr. LEWIS. The situation is that no industry, no final decision has been made on which industries should be selected. A substantial amount of work that we thought we would do in that particular part of the study is being done in conjunction with our regional studies that we are doing, which cover a large number of industries. In terms of a specific industry study, the industries primarily under consideration now are the smelter industry and the refining industry.

LONG-RANGE POLLUTANT TRANSPORT

Mr. TRAXLER. Mr. Coughlin?

Mr. COUGHLIN. While I have a moment here, I would like to inquire about ambient air quality standards, particularly as it refers to the transport of pollution from one part of the country to another.

As you undoubtedly know, Pennsylvania and the New England states are severely impacted by having relatively stringent ambient air quality standards. They are up against the top of these standards because of pollution that comes from other parts of the country.

There are some people say that you can track this; some people say you can't track the transport of pollutants. I wondered if your

Commission has examined this question or is planning to examine this question, or has any studies relating to this question. The need is significant.

Mr. LEWIS. The Commission will have a series of studies to look at the transport issue. We do not have any results at this point. It is clear that you are right and that there are a large number of issues that need to be looked at in terms of our ability to actually trace pollution. There have been a number of techniques developed for tracing it, but it is not clear that that can be done on a broad-scale basis, or whether it has to be done on a source-by-source basis, which is a very expensive process.

We will have a study that will focus on transport of pollution in this particular fiscal year, and in the next fiscal year we are going to be doing an analysis of a study that is being conducted by EPA, which is a multimillion-dollar study of the Northeast corridor, essentially looking at the pollution problem, the transport problem in that area.

We hope as a result of some of the work that is done there that we will be able to be in a better position to make recommendations to Congress on how this should be addressed. There are institutional problems as to how you deal with one of the issues you addressed, since it is not an intrastate problem, it is interstate, and what kind of institutions do we need to actually address it. Can we deal with it under our current arrangements? Those are issues that the Commission will be addressing.

Mr. COUGHLIN. But you have no studies outstanding now on that question?

Mr. LEWIS. We have no outstanding studies, to address only the transport problem. We do have the Los Angeles regional study. We have a study that is being conducted of the New York-Hartford area and in each of those areas we would be looking at the transport of pollutants. But in terms of the major technical questions related to transport, we have a study that will be approved presumably by the Commission within the next month that will address that issue, that will run into the next fiscal year, and then we will do another study of the Northeast corridor.

Mr. COUGHLIN. In terms of the acid rain question, there is apparently some dispute as to what causes acid rain, whether in fact it is caused by emission, or whether it is caused by some other reasons. Do you have any studies on that, as to the causes of acid rain as opposed to transport itself?

Mr. LEWIS. That will actually be a part of this large study that we are doing on the transport of pollutants. We see acid rain as a subset of the transport problem, and with respect to that issue, I think that there may be a little less dispute with respect to whether emissions are associated with the acid rain problem than there is with respect to which emissions are actually causing the acid rain problem.

In talking to some of the experts, I seem to hear more consensus with respect to the fact that it is probably being caused by emissions from some sources. The question is which sources, and in what locations is the problem being created?

Mr. COUGHLIN. And your study will go into which sources?

Mr. LEWIS. We will try to identify ways for us to address the problem in the future; that's correct.

Mr. COUGHLIN. One further question on that. Does the likelihood of increased coal-burning in the future concern you?

Mr. LEWIS. That is a question for the Commission to address. To the extent to which it increases emissions of SO_2 and SO_2 is creating a portion of the acid rain problem, certainly there will be reason to be concerned about it. That will certainly be an issue for the Commission to address in its final recommendations as to increased coal-burning.

Mr. COUGHLIN (presiding). Appendix one contains the Commission's final Plan of Study, which was adopted on June 22, 1979. I notice in the second paragraph only 53 written and oral commitments were received on the proposed Plan of Study. Were you disappointed in the small number of respondents?

Mr. LEWIS. I am sorry, I missed the question.

Mr. COUGHLIN. Only 53 written and oral commitments were received on the proposed Plan of Study.

Mr. LEWIS. No. We thought at the time, given the fact that it is a pretty massive document, that we were quite fortunate to get as many comments as we did. We got them from most of the major interests that are affected by the air pollution programs that are being carried out in the country. We got them from most of the major industries. We got them from environmental groups. We got them from Federal, State and local agencies, so we thought we had a good cross-section of comments.

Also I might add that with respect to the participation of the public in general in our studies, we are finding a substantial amount of interest in our five regional studies and seven implementation/enforcement studies which are being conducted in other regions, and at this point it is a major issue for the Commission to deal with as to how to effectively channel all of the public interest.

Mr. COUGHLIN. Several extensive literature searches are mentioned in the Plan of Study. For example, page 6 of the Plan, Part three, lists one. Will these literature searches be performed by Commission employees or by contract?

Mr. LEWIS. Generally speaking, the literature searches are conducted principally by the Commission's staff before we actually go out with contracts, but usually that is the preliminary literature search, and then there is a further literature search that actually is conducted by the contractor, if the work is to be done by a contractor. In the case of some studies, they are actually being performed by Commission staff in their entirety, and obviously those searches are done by the staff.

CATALYTIC CONVERTER STUDY

Mr. COUGHLIN. Part four of the plan, Review of the Vehicle Emissions Standards, is described on page POS-7. The third column indicates "The Commission will review catalyst technology to determine how much catalytic converters deteriorate in-use vehicles. In addition, the Commission will determine the extent to which tampering with other engine components in fuel switching reduces the control obtained from these devices."

That appears to be a pretty tall order. EPA has never definitively determined the answers to these issues. Do you think the Commission will be able to do so?

Mr. LEWIS. We have a study that is under way currently looking at automotive emission control technologies. All of these issues are to be addressed in that study. I am sure that there will be areas where we will not be able to come up with a definitive answer, but the studies that we are conducting will look at all the available data, EPA's data, auto industry data in particular.

Mr. COUGHLIN. You are not reinventing what EPA is already doing?

Mr. LEWIS. Absolutely not. We are not reinventing what EPA is doing. Basically, our starting points are different studies that are around. We are not able to do the original research in terms of testing of cars or that sort of thing, but basically we are having to contract and work with our staff to evaluate the technology and evaluate the studies that have been done to date on that issue.

Mr. COUGHLIN. With that percentage of in-use cars do you think have been tampered?

Mr. LEWIS. That would be one of the issues that the study addresses, but we don't have the results from that at this point. I have a personal opinion based upon studies that have been conducted in California.

Mr. COUGHLIN. What is that?

Mr. LEWIS. Twenty to thirty percent.

Mr. MCPHERSON. We had some testimony at a public hearing in California. This year it was up about ten percent, up to about a quarter. Two tankfuls pretty much destroys the catalytic converter.

Mr. COUGHLIN. Do you think a cap on the price differential between leaded and unleaded gasoline would be useful in this area?

Mr. LEWIS. That is an issue that we also are trying to address in this study, but again I only have a personal opinion based on some surveys that I have seen which seems to indicate that certainly the price differential does contribute to the problem. It is not clear that that is all of the problem, though. In California it did not seem to be the major problem. People that were switching often were switching from unleaded to leaded premium, which was greater in price than the unleaded. That seems to be atypical for the rest of the country. The rest of the country seems to have a greater problem of unleaded to regular gasoline, which does suggest that it is not totally performance but also for price reasons.

Mr. MCPHERSON. I would like to comment on that. I don't think it is price. I think availability. Right now in Florida, stations just don't have unleaded gasoline, and in southeast Florida they are having 20–30 minute lines at the present time because of fast growth and our allocations are based on a couple of years ago, and people take what they can get, and then after sitting 30 minutes in a gas line and they find out that their brand-new automobile doesn't have any gas at the station, I think that they have a positive motivation to misfuel. In fact, I have got a bill introduced in the Florida Legislature that will cause gasoline stations to post what they have, whether they have leaded, unleaded, or both.

Mr. COUGHLIN. Before I turn it back to the Chairman, I do want to say that I think that the work of your Commission is extraordi-

narily important. It is good, after a program has been in effect for a while, to take a look at what we have, what we have done, and where we are going. I just want to wish you godspeed in your efforts.

Thank you, Mr. Chairman.

Mr. LEWIS. Thank you.

PUBLIC PARTICIPATION EFFORT

Mr. TRAXLER. Appendix two of the justifications contains the Commission's Policy on Public Participation. We just spoke about the number of responses to the draft plan of study. Now I'd like to raise an issue that the Committee discussed earlier with another agency. A senior official that agency felt too much attention was being paid to the public participation. He felt it had the effect of greatly slowing down procedures without providing commensurate benefits. Your Commission has devoted considerable effort to public participation. How do you view the public participation aspect of your hearings? I know this is a subjective question. I guess you can answer as you will.

Mr. MCPHERSON. I personally believe and have been a strong advocate of having as much as possible, because I think the end result will be that it will be more acceptable if more facets of the public are involved in the final recommendations. If they work with it and think that their suggestions and recommendations have been well heard and considered, I think they will be more supportive of a final report.

So far we have been able to embrace, I think, segments of industry that sometimes in the past may have been doubtful as to whether they have been considered. I think you will find that the people who have testified and have come forth with information feel that we have really considered their viewpoints thoroughly.

Mr. LEWIS. Mr. Chairman, I think there has to be a balance. I think you can devote too much of your resources to public participation, but I don't think the Commission has done that. As a matter of fact, I agree with the vice-chairman of the Commission that there is substantial benefit to be gained. The type of public participation that we are generally getting is from individuals who are knowledgeable about the area.

They are either representatives of industry, they are representatives of Federal, state and local agencies, or they are from environmental groups, and they have particular views and knowledge that is very helpful in our deliberations, and I think will be even more helpful as we move towards developing a final report.

One recent example of something that was similar to public participation was a Regulatory Reform Workshop that we conducted in Denver. We essentially had representatives of government, representatives of industry, and environmental groups sitting down together for the first time in many instances to talk about the procedural requirements for permitting, and actually got into a much greater number of issues than that. They found out when they were sitting down for the first time together, they found much more agreement among themselves than they ever anticipated to be the case.

This gives me some optimism that we may be able to develop a final report that might be more consensus-oriented than some of us might otherwise have believed possible. Also I would like to submit for the record the participants in the Regulatory Reform Workshop, which was conducted in Denver.

[The information follows:]

NCAQ Regulatory Reform Panel—February 13-15, 1980, Denver, Colo.

Dr. Robert Arnott, Assistant Director, Colorado Department of Health, 4210 E. Eleventh Street, Denver, CO 80220.

Dr. John Bartlit, New Mexico Citizens for Clean Air and Water, 113 Monte Rey North, Los Alamos, NM 87544.

Mr. Fred W. Bowditch, Executive Assistance to the Vice President, Environmental Activities Staff, General Motors Corporation, General Motors Technical Center, Warren, MI 48090.

Mr. George D. Carpenter, Group Leader, Environmental Control Department, The Proctor and Gamble Company, 7162 Reading Road, Cincinnati, OH 45222.

Ms. Frances Dubrowski, Natural Resources Defense Council, 1725 I Street NW., Washington, D.C. 20006.

Ms. Karen Edgecombe, Law Office of Bruce Terris, 1526 Eighteenth Street NW., Washington, D.C. 20036.

Ms. Nancie Fadeley, State Representative, State of Oregon, 260 Sunset Drive, Eugene, OR 97403.

Frank B. Friedman, Esq., Manager, External Affairs, Occupational Environmental Protection, Atlantic Richfield Company, 515 S. Flower Street, Los Angeles, CA 90071.

Mr. Michael Glusac, Executive Director, Southeast Michigan Council of Governments, 8th Floor, Book Building, 1249 Washington Boulevard, Detroit, MI 48226.

Mr. Dan Goodwin, Manager, Division of Air Pollution Control, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, IL 62706.

Mr. William B. Huelson, Vice President, Environmental Affairs, American Foundrymen's Society, Golf and Wolf Roads, Des Plaines, IL 60016.

Mr. David Kee, Director, Air and Hazardous Materials Division, U.S. EPA, Region V, 230 South Dearborn Street, Chicago, IL 60609.

Mr. Robert Kelley, Washington Representative, Union Carbide, 1730 Pennsylvania Avenue NW., Washington, D.C. 20006.

Mr. Kevin Markey, Friends of the Earth, 2239 E. Colfax, Denver, CO 80206.

Henry V. Nickel, Esq., Partner, Hunton and Williams, 1919 Pennsylvania Avenue NW., Washington, D.C. 20006.

Mr. Bob Offutt, Secretary, Air Pollution Control District of Jefferson County, Kentucky, 914 East Broadway, Louisville, KY 40204.

Mr. Andrew Paretti, President, Moore & Company, 166 Abington Avenue, Newark, NJ 07107.

Mr. James A. Patton, Northern Plains Resource Council, 419 Stapleton Building, Billings, MT 59101.

Mr. Carl Pope, Sierra Club, 530 Bush Street, San Francisco, CA 94108.

John R. Quarles, Esq., Partner, Morgan, Lewis and Bockius, 1800 M Street NW., Washington, D.C. 20036.

Mr. Robert Rauch, Environmental Defense Fund, 1525 Eighteenth Street NW., Washington, D.C. 20036.

Mr. Ron Rudolph, Friends of the Earth, 124 Spear Street, San Francisco, CA 94105.

Dr. Carleton B. Scott, Director, Environmental Services, Union Oil Company of California, Los Angeles, CA 90051.

Mr. Doug True, Deputy Director of Energy Policy, State of Iowa, Capitol Complex, Des Moines, IA 50319.

Ms. Anne Stubbs, Council of State Governments, Ironworks Pike, Lexington, KY 40511.

Mr. John Tuteur, County Supervisor, 1115 First Street, Napa, CA 94558.

David Vann, Esq., Carlton and Boles, 727 Frank Nelson Building, Birmingham, AL 35203.

David Wooley, Esq., Appalachian Research and Defense Fund, 1116 Kanawha Boulevard, Charleston, WV 25301.

Mr. Earl F. Young, Jr., Assistant Vice President, Environmental Affairs, American Iron and Steel Institute, 1000 Sixteenth Street NW., Washington, D.C. 20036.

Mr. Robert Yuhnke, Citizens for a Better Environment, 59 East Van Buren, Suite 1600, Chicago, IL 60605.

60-531 O - 80 - 72

Mr. TRAXLER. In 1979 and 1980 to date, how much money have you obligated to reimburse travel expenses of public participants?

Mr. LEWIS. Basically, the amount of funds that we have available, that we are using for public participation for travel—that is one category I know that you are interested in—is a very small amount. In addition, we have liaison personnel, but is it a question addressed to all public activities? Liaison personnel on our staff?

Mr. TRAXLER. No, not your staff. Public participants who are non-staff persons for whom you pay travel. Will you give us the figures for 1979 and 1980 to date?

Mr. LEWIS. The figure that we have to date in 1979 is approximately $50. Excuse me, for 1980 is approximately $50. For the balance of this year, we anticipate that it will be a total of $4,375. This is basically for five workshops or actually we call them advisory committees or information groups.

In connection with our regional studies we have advisory committees that meet with certain people who cannot pay their way. We feel that instead of employing them as consultants that we are getting some expert advice for a very small price by paying their travel, so $4,375 for this year, and $4,375 for next year, is the figure.

Mr. TRAXLER. What is the figure for 1979?

Mr. LEWIS. The figure for 1979 is zero.

Mr. WARD. The figure for 1980, the actual obligation is $47.25.

Mr. TRAXLER. At this point in time, you anticipate it will be $4,375

Mr. WARD. That is correct.

Mr. TRAXLER. For 1979 and 1980 combined, what was the cost to maintain the Commission speakers bureau?

Mr. LEWIS. In reality, in terms of the speeches that are being made by the Commission, primarily we are traveling at the expense of other agencies rather than traveling at the expense of the Commission. There is only a small number of people who are actually making speeches. I am one of them. I have yet to make a speech at the Commission's expense. I can give you the specific numbers later, but it is very small.

Mr. MCPHERSON. They won't let me charge anything. The National Bureau of Standards asked me to make a speech to a group of their people up here about two months ago. I have to do it when we have a Commission meeting. They are pretty tight—too tight actually.

REIMBURSEMENT FOR TRAVEL

Mr. TRAXLER. Does the Commission ever receive any reimbursement from the groups before whom you speak?

Mr. LEWIS. For fees for speaking?

Mr. TRAXLER. Yes.

Mr. LEWIS. Or for expenses?

Mr. TRAXLER. For expenses. Do they reimburse you or the Commission for expenses?

Mr. LEWIS. Yes, we have fees for a small number of speeches, that is correct.

Mr. TRAXLER. Do you mean a personal fee or reimbursement?

Mr. LEWIS. Reimbursement for expenses.

Mr. TRAXLER. And what happens to that? Where does that go? Does that go to the Commission or does that go to the individual?

Mr. LEWIS. It can go both places. Essentially, it reimburses the individual's expenses. Primarily we are speaking before groups that are government groups when we are having expenses reimbursed, and the limitations such as there are for the Commission in terms of the amount that can be reimbursed, and generally speaking the individual is reimbursed for his expenses.

[The information follows:]

The Commission has a policy of not accepting reimbursement for travel and lodging expenses from interests regulated under the Clean Air Act. This policy does allow for reimbursement of expenses from other federal agencies and public sector organizations and from nonprofit organizations which are conducting conferences at which Commissioners or Commission staff are invited to speak.

The reimbursements for expenses for such speeches go to the Commission in the event the individual has sought an advance for the travel or to the individual in the event the individual travels at his or her own expense without an advance.

In actual practice, this policy has led to the Commissioners' and staff's making few speeches involving out-of-town travel, and in those instances the organization extending the speaking invitation has generally provided airline tickets and arranged for direct billing of legitimate expenses. In no case does Commission policy provide for receipt of a fee covering more than legitimate travel and lodging expenses.

Mr. TRAXLER. How many speaking engagements has the Commission's speakers bureau filled?

Mr. LEWIS. In terms of there actually being a speakers bureau, the Commission does not have the travel funds for a formal speakers bureau. Last year there was a cut from our travel budget of $40,000. This cut in our travel funds has cut back substantially on a large number of things we would like to have done.

It has resulted in basically traveling and making no speeches at the Commission's expense. Other areas that we have had to cut back as a result of that is the fact that a large number of Commission meetings that we would have otherwise held outside of Washington we have not been able to hold because there is about a $5,000 differential between holding a meeting in Washington and holding it elsewhere. We actually have held only one meeting outside of Washington. Advisory committee meetings that we have held have not been attended by a large number of people for the reason that we have been constrained in travel.

Commission members, for example, we cannot afford to reimburse expenses to attend these advisory committee meetings. For that reason the speakers bureau also is not really in existence.

Mr. WARD. Mr. Chairman, this speakers bureau has in effect evolved, I think, into one employee who has numerous other resposibilities, keeping an eye out for activities in which there are conferences in the air quality field and may be interested in a speaker. The major focus of the speakers bureau in effect has been on the Washington area activities, annual meetings of Environmental Quality Committee and that kind of thing. That, in effect, has become the speakers bureau.

FISCAL 1979 TRAVEL BUDGET

Mr. TRAXLER. In 1979 you had a serious travel problem due to oversight by OMB when the budget was originally developed. Section 401 of the HUD-Independent Agencies Appropriation Act prohibits travel in excess of the amounts contained in the budget justifications. Since the Commission had not originally had a travel estimate, it had no funds to travel until relief was provided in a supplemental appropriation bill. After all the effort that was made to provide travel funding in 1979, we were surprised to see that $3,000 was lapsed. Is there any explanation for the lapse?

Mr. LEWIS. The explanation basically was that we were fearful of going over it, and so when you make estimates as to what the travel costs will be, often they are less than you anticipate, and if you find at the end of the fiscal year you have a few thousand dollars left, then you are quite fortunate, but you prefer rather to not go over it so people don't have to pay for the travel themselves.

Mr. TRAXLER. Turning to page 5 of your justifications, which details your 1981 travel budget estimate. Why is it the detail of the six travel items mentioned in the paragraph does not add up to the total request of $185,000?

Mr. LEWIS. As I think the staff has been advised, there is a typo there. One number is incorrect for that reason. We will supply the answer for the record.

[The information follows:]

The figure of $38,600 appearing under the "Travel of Persons" subtitle is properly $8,600. The apparent difference between the $185,000 travel budget request and the $215,000 total therefore is resolved by the elimination of the $30,000 resulting from the typographical error.

IMPACT OF FISCAL 1980 BUDGET REDUCTION

Mr. TRAXLER. For the record, will you provide a detailed analysis of the $500,000 reduction the Congress applied to your 1980 budget request.

[The information follows:]

The Commission's fiscal year 1980 budget submission had proposed an appropriation of $6,000,000, $185,000 of which would be used for travel expenses. After the House passed the HUD-Independent Agencies Subcommittee's bill appropriating $5,000,000, with $145,000 available for travel, the Senate HUD-Independent Agencies Subcommittee and the Senate passed legislation restoring $500,000 of the $1 million House reduction for the Commission's general budget. A House/Senate Conference committee subsequently agreed to appropriate $5,500,000 to the Commission in fiscal 1980, with $145,000 of that total available for travel.

One effect of the $500,000 budget cut has been to reduce from six to five the number of comprehensive regional studies to be conducted by the Commission. In addition to eliminating one planned regional study, the budget reduction means that funding available for each of the remaining five regional studies has been reduced, leading to analyses in each regional study of fewer possible combinations of air quality and growth conditions and fewer alternative air quality strategies.

In addition to the effects on regional studies, the $500,000 budget reduction for fiscal year 1980 has required a more constrained approach to the analysis of the effects on specific industries of Clean Air Act requirements. With the fiscal year 1980 funding actually approved, the Commission currently is able to plan to conduct an analysis of the impacts of the Act for just a single industry, rather than conducting several industry analyses as earlier projected.

The fiscal year 1980 budget cuts also have severely restricted necessary Commission travel by reducing the budget available for travel from $185,000 to $145,000. This reduction has led the Commission to have to forego meetings outside of Wash-

ington, D.C., despite strong support from all sectors for the Commisison to conduct its hearings and meetings throughout the U.S. in order to gain a better understanding of local issues and perspectives. Because of the fiscal year 1980 travel budget reduction, the Commission has had to forego opportunities for Commissioners and staff to participate actively in important studies requiring out-of-town travel. Another serious effect of the travel budget reduction is the impact on travel necessary to oversee contractors' research studies, the highest priority for travel by Commission staff: The $40,000 budget reduction in fiscal year 1980 has curtailed travel for purposes of contract management.

Mr. TRAXLER. Turning to Table Two. Why have 1980 outlays been increased $500,000—although estimated obligations are $500,000 less due to the Congressional reduction?

Mr. LEWIS. Perhaps Bud Ward would like to respond. We can submit that for the record.

Mr. WARD. I am afraid I don't understand the question.

Mr. TRAXLER. The staff will explain it to you and you can provide a response for the record.

[The information follows:]

The original estimate of Commission outlays for fiscal year 1980 was made by the Office of Management and Budget prior to the existence of the Commission staff. The OMB estimate did not take into consideration liquidation of a substantial amount of obligations incurred late in fiscal 1979. Because of its late start-up resulting from delays in the appointments of public members, the Commission could not complete development and approval of an overall research plan of study and research budget until the beginning of the third quarter of fiscal year 1979; as a result, no contracts for research were awarded until the final quarter of that fiscal year.

While obligations in the amount of $1,960,000 were incurred in fiscal 1979, actual outlays for that year amounted to only $482,000. The remainder of the fiscal 1979 obligations—approximately $1,500,000—is to be liquidated in fiscal year 1980. These expected outlays, together with approximately $4,000,000 in expected outlays attributable to obligations incurred in fiscal 1980, equal the $5,500,000 entered in the Commission's budget as expected fiscal year 1980 outlays.

OFFICE SPACE RENTAL, PERSONNEL

Mr. TRAXLER. Table Three contains the object class summary justification. The estimate for Standard Level User Charges is $85,000. However, multiplying the estimated rent of $11.43 per square foot times 8,250 square feet yields $95,947.50. You are almost $11,000 short in your user charges, if your estimated rent of $11.43 carries through. How are you going to pay your rent?

Mr. WARD. The General Services Administration has advised us not to plan to pay rent for the final month of the year in 1981, since our report is due in August. They have advised us that we should not plan to pay rent in September, the final month of that fiscal year.

Mr. TRAXLER. Table Four is the detail of permanent positions. Ten positions were unfilled at the end of 1979. How many positions are currently filled?

Mr. LEWIS. There are forty positions currently filled, with one person who has accepted an offer but has not started to work, and we have one offer outstanding and three vacancies where we do not have offers outstanding.

Mr. TRAXLER. Your average grade in 1980 increased from an already extremely high 11.22 in last year's submission to 11.89 this year. Why is that? How did you get that average increase of some .67?

Mr. LEWIS. In filling the staff positions for the Commission, in order to get the expertise that we need we found that in some cases we have actually had to hire a person at a slightly higher grade. For example, in the health and environmental effects area our division chief is one of the leading epidemiologists in the country. To bring that person in we had to bring him in at a little higher level because of his expertise that we would not have otherwise, and that has resulted in a slightly higher average grade level.

[The information follows:]

As of the end of February 1980, the actual average grade equivalent for Commission staff is 11.47. The increase from the 11.22 average grade equivalent a year earlier reflects the hiring of individuals with special areas of expertise and particularly reflects the October 1979 government-wide pay increase.

The estimated 11.89 average grade equivalent in fiscal year 1981 reflects length of service increases due at the end of one year of employment for many employees. The 11.89 average grade equivalent assumes no staff turnover, and therefore reflects step increases above the starting salaries for particular positions.

Mr. TRAXLER. Why are the three new GS–15 positions included in your 1980 column of the 1981 budget? Does that mean that those positions are filled?

Mr. LEWIS. Yes.

[The information follows:]

The detail of permanent positions in the Commission's 1980 budget submission was prepared by OMB prior to the existence of a Commission staff. All four individuals classified as GS–15 equivalents were employed by the Commission prior to April 1979. The Commission has no plans to increase the number of GS–15 equivalents. In addition, the need for the Commission to employ two GS–17 equivalents has changed so that only one GS–17 equivalent, an individual already employed, will be needed. In lieu of the second GS–17 equivalent, the Commission recently has employed a staff librarian at a salary equivalent to a GS–11.

Mr. TRAXLER. The personnel summary on Table Five indicates 39 total compensable work-years, and a full-time equivalent of other positions of 2. However, on page 3 it indicates that the average full-time staffing is 35 positions. Can you account for the 2 work-year differences?

Mr. WARD. The figure of 35 on page 3 was revised to 37, and the 37 does not include 2 part-time individuals that would make up the difference.

COMMISSION MEETINGS

Mr. TRAXLER. For the record can you provide a list of the meeting of the Commissioners held in 1979 and 1980, including the location of those meetings, and the Commissioners present?

Mr. LEWIS. Certainly.

[The information follows:]

COMMISSION MEETINGS AND ATTENDANCE FISCAL YEARS 1979, 1980 THROUGH FEBRUARY

Date, place of meeting, and attendance

October 2, 1978—Washington, D.C.: Congressman Paul Rogers, Congressman Dave Stockman, Honorable Tom McPherson, Richard E. Ayres, Esq., Mayor Tom Bradley, Dr. Annemarie F. Crocetti, Edwin Dodd (with staff person Richard Berry), Jeanne Malchon, Lloyd McBride (through Robert Hayden acting as his designate), Harold Tso, Governor Jay Hammond (through Ernst W. Mueller, and acting as his designate).

December 4, 1978—Washington, D.C.: Congressman Rogers, Senator Hart, Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mayor Bradley, Mr. Dodd (through staff person Neal Troy with Mr. Berry), Ms. Malchon, Mr. McBride, and Mr. Tso.

January 8, 1979—Washington, D.C.: Congressman Stockman, Mr. McPherson, Mr. Ayres, Mr. Dodd (through staff person Mr. Berry), Mr. Hammond, Ms. Malchon, and Mr. McBride (through staff person Mr. Hayden).

February 12, 1979—Los Angeles: Senator Hart, Mr. McPheson, Mr. Ayres, Mayor Bradley, Dr. Crocetti, Mr. Dodd, Ms. Malchon, Mr. McBride (through Mr. Hayden with Chuck Depew and Mr. Troy), (Commission staff traveling to this meeting listed below) Katherine Y. Cudlipp, Paul A. Freeman, William H. Lewis, and Carol A. Porter.

April 9, 1979—Washington, D.C.: Senator Hart, Congressman Stockman, Mr. McPherson, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride.

May 7, 1979—Washington, D.C.: Senator Hart, Congressman Stockman, Mr. McPherson (with Nancy Leikauf), Mr. Ayres, Mayor Bradley, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. Mc Bride.

June 22, 1979—Washington, D.C.: Senator Hart, Congressman Stockman (through staff person Martin Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride.

July 20, 1979—Research Committee, Washington, D.C.: Senator Hart, Congressman Stockman, Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride.

August 5, 1979—Research Committee, Washington, D.C.: Senator Hart (through staff person Stephen Saunders), Congressman Stockman, Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride (through staff person Mr. Hayden).

August 6, 1979—Washington, D.C.: Senator Hart, Congressman Stockman, Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride (through staff person Mr. Hayden).

September 10, 1979—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Mr. McBride, and Leonard Schine (recently appointed as a Commissioner).

September 24, 1979—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (through staff person Mr. Chuck Depew and with staff person Mr. Berry), Ms. Malchon, and Mr. Schine.

October 5, 1979—Washington, D.C.: Senator Hart, Mr. McPherson (with Ms. Leikauf), Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, Mr. Schine, and Mr. Tso.

October 5, 1979—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. Pherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, Mr. Schine, and Mr. Tso.

October 29, 1979—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. McBride (through staff person Mr. Hayden).

November 13, 1979—Washington, D.C.: Senator Hart, Congressman Stockman, Mr. McPherson, Mr. Ayres, Mayor Bradley, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Mr. Schine, and Mr. Tso.

November 13, 1979—Research Committee, Washington, D.C.: Senator Hart (through staff person Stephen Saunders), Mr. McPherson, Mr. Ayres, Dr. Crocetti, and Mr. Dodd (with staff person Mr. Berry).

December 6, 1979—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), and Ms. Malchon.

January 27, 1980—Research Committee, Washington, D.C.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson (with Ms. Leikauf), Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), and Ms. Malchon.

January 28, 1980—Washington, D.C.: Senator Hart, Senator Robert Stafford, Congressman Stockman, Mr. McPherson (with Ms. Leikauf), Mr. Ayres, Dr. Crocetti, Mr. Dodd (through staff person Mr. Berry), and Ms. Malchon.

February 10, 1980—Research Committee, Denver, Colo.: Congressman Stockman (through staff person Mr. Smith), Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Ms. Malchon, and Mr. Staggers (through staff person Chris Dunne).

Commission staff traveling to this meeting listed below: Ms. Cudlipp, Mr. Lewis, Matthew A. Low, Richard A. Penna, Ms. Porter, and Morris A. Ward.

February 11, 1980—Denver, Colo.: Senator Hart, Mr. McPherson, Mr. Ayres, Dr. Crocetti, Mr. Dodd (with staff person Mr. Berry), Mr. Schine, and Mr. Tso.
Commission staff at this meeting: Ms. Cudlipp, Mr. Lewis, Mr. Penna, Ms. Porter, and Mr. Ward.

Mr. TRAXLER. Thank you very much. We appreciate your appearance.

The budget justifications for the Commission will be inserted in the record at this point. The Committee stands adjourned.

[The justification follows:]

THE NATIONAL COMMISSION ON AIR QUALITY

INTRODUCTION

The National Commission on Air Quality (NCAQ) was established by Congress under Section 323 of the 1977 Amendments to the Clean Air Act (PL 95-95). Congress directed the Commission to evaluate that Act and examine alternative means of achieving healthful air quality.

Under the law, the Commission, after a three-year study, is to make recommendations to Congress in the form of a final report. Accordingly, the Commission is compiling and assessing information on environmental, scientific, technological, economic and social issues related to air quality policies.

The Commission by law is composed of 13 members, including the chairmen and ranking minority members of the Senate Committee on Environment and Public Works and of the House Committee on Interstate and Foreign Commerce or their delegates from among members of those committees. Because of long delays in the President's naming of nine public members, the Commission is seeking a one-year extension to its statutory reporting deadline. No additional authorization is being requested. If this extension is granted, the Commission accordingly intends to submit its final report and recommendations to the Congress by August 7, 1981, with a draft final report available for public review by March 31, 1981.

In a 1978 "Suggested Plan of Study and Administrative and Management Plan for the National Commission on Air Quality," the Congressional Research service of the U.S. Library of Congress recommended that the Commission in its final report and recommendations:

1) Assemble, organize and assess information on the current state of knowledge with respect to a broad range of issues that must be faced in achieving the overall objectives of the Clean Air Act;

2) Present the results, findings and conclusions of the Commission's investigations with respect to those issues on the technological, economic, health, social and environmental aspects of achieving or not achieving national air quality control objectives, including national ambient air quality standards; and

3) Recommend to the Congress those actions that may be required to further the objectives of the Clean Air Act.

To achieve its research objectives, the Commission on June 22, 1979, adopted a Plan of Study outlining major research areas (see Appendix I).

The Plan of Study reflects the Commission's Congressional mandate and divides air pollution issues to be addressed along the lines of the Clean Air Act. In general, the Act provides for controlling pollutants for which ambient air quality standards have been set. Part I, Analysis of National Ambient Air Quality Standards, will examine these standards and, in particular, the way they are established. In this section the Commission also will analyze the need for controlling currently unregulated pollutants.

The Act imposes requirements for control of regulated pollutants under three separate but related general headings: Prevention of Significant Deterioration of Air Quality (areas currently meeting the ambient standards for a particular pollutant or pollutants); Requirements for Nonattainment Areas (areas where current ambient standards are being violated); and Emission Standards for Moving Sources. The Commission will study these requirements in Parts II, III and IV, respectively.

Air Pollution control, like air pollution itself, is costly. It is difficult, however, to quantify with precision the incremental costs of increasingly stringent controls. It is even more difficult to estimate the economic value of related benefits, such as improved public health, increased worker productivity, expanded agricultural yield, and greater visibility. Recognizing the need to advance the state of the art of cost-benefit analysis, the Commission will examine the economic effects of air pollution control in Part V of its study, Costs and Benefits Associated with Air Pollution Control.

In Part VI of the Plan, The Impact of Air Pollution Abatement Activities on Selected Industries, the Commission will examine overall effects of the Act's requirements on specific industries, particularly those using coal or affecting coal use.

Implementation of the Clean Air Act involves related planning and enforcement activities of the private and public sectors. In Part VII of the Plan, Review and Analysis of Institutional Relationships and Research Programs, the Commission will examine the demands imposed on the various institutions complying with the Act.

The Commission's study, however, will not be limited to the existing legal and institutional frameworks for air pollution control. The Commission also will consider whether the goals of the Act could be accomplished in a fundamentally different way. These alternatives will be addressed throughout the Plan and will be compared and evaluated in Part VIII--Review and Analysis of Alternative Approaches to Air Pollution Control.

Authorization Authority

Identification Code 48-1800-0-1-304

The National Commission on Air Quality is authorized appropriation of $10,000,000 under P.L. 95-95. Because of the delays in naming the Commission's members, the Commission did not receive $1,000,000 in fiscal year 1977 authorized to be made available to the Commission by contract from the appropriation of the Environmental Protection Agency for that fiscal year. An additional $500,000 appropriated in fiscal year 1978 lapsed because of the President's delays in appointing Commission members.

Summary of Budget Needs

The Fiscal Year 1981 budget estimate for the National Commission on Air Quality, as approved by the President's Office of Management and Budget, is $2.5 million.

Compensation

In preparing its budget submission, the Commission assumed a natural gradual attrition in staffing as the Commission's 1981 reporting deadline approaches. Accordingly, while the Commission plans to begin the 1981 fiscal year at its budgeted personnel ceiling of 45, the compensation estimate of $1,200,000 is based on an average staffing of 35 full-time permanent positions throughout the fiscal year.

The primary responsibilities of this staff during fiscal 1981 will be the management and administration of ongoing contract studies; compilation, evaluation and integration of completed contractor studies; internal staff research; evaluation of public attitudes toward and critiques of a draft report and recommendations; and preparation of the final report and recommendations to the Congress.

Research

In addition to compensation costs, the major component of the Commission's fiscal year 1981 budget submission is the $595,000 projected for the "Other Services" object classification which provides for contractual services for research to complete the Commission's evaluation of the impacts of the Clean Air Act. Also included in this category is an estimated $64,000 for the cost of the NCAQ and GSA Administrative Services Agreement.

The funds requested for research in fiscal year 1981 will be used in three basic areas: analyzing alternative air pollution control policies evaluated in the Commission's regional studies; conducting follow-up studies of issues which arise from studies initiated in fiscal year 1979 or 1980; and

analyzing the relationship of outdoor and indoor air pollution levels and associated public health issues.

The Commission proposes to use $250,000 of the fiscal year 1981 research budget to analyze alternatives to the existing mechanisms for prevention of significant deterioration of air quality (PSD) in areas currently meeting ambient air quality standards and alternatives for meeting the standards in areas currently violating them.

Commission decisions on the precise scope of these studies will await further work on the regional studies. However, it is anticipated that the studies will address the most promising of the policy alternatives examined in the regional studies. The fiscal year 1981 studies will examine the broad application of the policy alternatives which appear most promising based on data generated in the regional studies.

The projected fiscal year 1981 studies will examine the alternatives in light of possible trends in fuel use, combustion techniques and control technologies.

To assure a comprehensive final report and recommendations to Congress, the Commission is proposing a budget of $231,000 for the following purposes: 1) a contract to synthesize numerous studies undertaken by public and private sector groups on particulate matter air pollution, its composition and transport; 2) assessment of information on photochemical oxidants gathered in support of 1982 state implementation plan submittals and in support of the Environmental Protection Agency's Northeast Corridor study; 3) an analysis of monitoring systems based on the results of the Commission's monitoring study and the implementation of EPA's newly adopted regulations on monitoring; 4) an analysis of information developed in the Commission's study of research, development and demonstration on possible mechanisms to improve development of pollution control techniques and of low-emitting processes.

In addition, the Commission intends to use part of the $231,000 to reconvene the oxidant and dispersion modeling panels in early 1981, as provided for in the Commission's Plan of Study, and to assure adequate opportunity for thorough public and peer reviews of the draft final report and recommendations. (The Commission's Public Participation Plan for assuming a meaningful and timely public role in NCAQ studies is attached as Appendix II.)

The Commission is requesting $50,000 to convene a panel to address the relationship between outdoor and indoor air pollution levels. This panel of experts will examine situations in which outdoor air pollution affects indoor levels and the relative contribution of outdoor air pollution to indoor air pollution. The panel will provide valuable information on total body burden of various pollutants.

Travel of Persons

The Commission projects travel expenses of $185,000 for fiscal year 1981. The $185,000 travel appropriation is necessary to support 1) lodging and travel to and from 10 regularly scheduled full Commission meetings for Commissioners traveling from out of town to Washington, D.C., and other meeting sites (average estimated cost for 10 meetings, 10 travelers per meeting, $60,000); 2) lodging and travel to and from 16 meetings of the Commission's Research Committee (average cost for 16 meetings, five travelers per meeting, $48,000); 3) Commissioners and staff travel to four regional hearings on draft final report and recommendations (average cost for four hearings, 12 Commissioners and staff (total) per hearing, $28,800; 4) staff travel to study sites and contractors' facilities to oversee and manage contract studies (50 person - trips, $30,000); 5) four Regional Information Group meetings in regional study areas (average cost for four meetings, four travelers per meeting, $9,600); 6) Commissioners and staff travel to expert panels convened by NCAQ (total available $38,600).

Rental of Office Space (Standard Level Users Charge)

The Commission's $85,000 estimated office space rental budget is based on rent of $11.63 per square foot for 8,250 square feet of office space on the north side of the second floor, 499 South Capitol Street, S.W., Washington, D.C.

Additional Items

Additional components of the Commission's fiscal year 1981 budget request represent estimates for Printing and Reproduction, primarily of draft and final copies of the Commission's final report and recommendations ($200,000); Communications and Utilities ($100,000); and Supplies and Materials ($25,000).

NCAQ Research Functions and Operations

The area to be examined by the National Commission on Air Quality is highly technical, involving issues which are fast-changing, complex, interrelated and highly controversial. The Commission will endeavor to provide Congress with both technical information and analyses of policy options which can serve as the basis for continuing Congressional decisionmaking on national air quality policy. In the process, the Commission will evaluate both the substance and implementation of the Clean Air Act and consider whether legislative or regulatory changes would more effectively promote the goals of the Act consistent with other national programs.

The National Commission on Air Quality on June 22, 1979, adopted a Plan of Study outlining eight major research areas which are consistent with the Commission's mandate in Section 323 of the Clean Air Act.

Part I--Analysis of National Ambient Air Quality Standards (NAAQS)

Issues: What processes and criteria should EPA use in establishing or reviewing ambient air quality standards? Should currently unregulated pollutants be regulated under NAAQS?

Methodology: 1) Examine current EPA research, procedures, criteria, definitions, and resources. Review existing criteria pollutants.

2) Establish expert panel to study photochemical oxidants and precursors leading to formation of oxidants.

3) Review studies concerning fine particulates and high-altitude carbon monoxide.

Part II--Review and Analysis of Policy for Areas Attaining Standards

Issues: What is the impact of preventing significant deterioration (PSD) of air quality on public health and other important societal values? What is the impact of PSD on regional economic development generally, and on location and size of industry in particular? What air quality-related values are to be protected by PSD? What PSD increments are appropriate to protect those values, and how are the increments determined? Can PSD goals better be achieved through alternative approaches?

Methodology: 1) Study selected geographic regions where air quality meets or exceeds ambient standards for sulfur dioxide and particulates. Examine benefits and costs of maintaining air quality and evaluate alternative ways to achieve PSD.

2) Examine ways of classifying PSD areas, visibility requirements, and desirability of including additional pollutants in PSD.

3) Study procedures for obtaining new source permits.

4) Establish expert panel to study modelling techniques.

Part III--Review and Analysis of Policy for Non-Attainment Areas

Issues: How do existing requirements affect public health, energy development, employment, and economic growth in general? How effective are offset and new source review provisions?

Methodology: 1) Study selected geographic regions where air quality does not meet standards for sulfur dioxide, particulates, and photochemical oxidants. Examine costs and benefits of attaining standards and evaluate alternatives.

2) Examine problems of small businesses and government agencies in obtaining emission offsets.

Part IV--Review of Vehicle Emission Standards

Issues: Are present or proposed control technologies effective and what economic and fuel consumption impacts do they have? Should unregulated pollutants be controlled? What are the effects of fuel switching, tampering, deteriorating equipment, and high altitudes?

Methodology: 1) Study the effects of more and less stringent controls on the emission of oxides of nitrogen.

2) Study in-use equipment and evaluate alternative equipment and engine designs.

3) Examine effectiveness of Inspection/ Maintenance programs.

4) Study carbon monoxide emission levels at various altitudes.

5) Evaluate effects of unregulated pollutants, including emissions from diesel-powered vehicles.

Part V--Costs and Benefits Associated with Air Pollution Control

Issues: When is cost/benefit analysis appropriate? What quantification methodology is best?

Methodology: 1) Through literature search, assess valuation techniques and identify research needs.

2) Sponsor workshops to determine accepted methodologies for assessing both costs and benefits.

3) Identify situations at all levels of government where cost/benefit studies are and are not appropriate.

Part VI--The Impact of Air Pollution Abatement Activities on Selected Industries

Issues: What are the effects of current requirements on new, modified, and existing industrial sources of air pollution? What would be the effects of selected alternative approaches?

Methodology: 1) Select specific industries for study, with priority for those using increased amounts of coal.

2) For each industry, study expansion projections, air quality effects, and impacts of various controls on siting, employment, economic situation, energy consumption and other factors. Evaluate alternatives.

Part VII--Review and Analysis of Institutional Relationships and Research Programs

Issues: Are federal, state, and local governments able to carry out and enforce the Act? Can requirements be simplified? Are research efforts, monitoring systems, and technician training programs adequate?

Methodology: 1) Sponsor a workshop for various interests to discuss permitting, reporting, and enforcement requirements at all levels of government and to recommend appropriate improvements.

2) Examine the role of the federal government in air quality planning and evaluate the Act's implementation at all governmental levels.

3) Evaluate public and private research efforts and the effectiveness of a variety of monitoring systems.

Part VIII--Review and Analysis of Alternative Approaches to Air Pollution Control

Issues: Are fundamentally different ways to achieve clean air feasible? Would alternative approaches encourage advances in control technology?

Methodology: 1) Evaluate alternatives considered in other parts of the Plan and consider effectiveness of each.

2) Examine economic and other non-regulatory approaches.

3) Develop candidate alternatives which are consistent with future growth and technology projections.

Appendix III contains a status chart of research contracts awarded and contemplated as of January 14, 1980.

60-531 O - 80 - 73

NATIONAL COMMISSION ON AIR QUALITY

Final Plan of Study

Printed below is the final Plan of Study of the National Commission on Air Quality. The Plan, adopted by the Commission on June 22, 1979, at a public meeting in Washington, D.C., outlines the Commission's approach to fulfilling its mandate under Section 323 of the Clean Air Act. That Section directs the Commission to analyze alternative approaches to meeting the purposes of the Act and to report back to Congress on how best to meet the nation's air quality goals.

The Commission's draft plan was published in the Federal Register on May 9, 1979, at page 27271. The Commission received 53 written and oral comments during the period of May 9 to June 8 from a variety of interests.

In general, the comments received were positive and supportive of the overall goals of the Commission as reflected in the Plan of Study. A brief summary of the comments is provided below, organized according to the portion of the Plan of Study to which they apply. A brief discussion of the Commission's disposition of these comments also is provided.

Under Part I, many commenters urged the Commission to investigate procedures for setting, and definitions used in setting, National Ambient Air Quality Standards. Some commenters urged the Commission to examine current National Ambient Air Quality Standards (NAAQS) and suggest whether the current standard for each criteria pollutant is proper or determine the proper level. As stated in Part I, the Commission does plan to assess standard setting processes and definitions, but time and resource limitations prclude reformulation of standards.

Numerous commenters focused on Part II, which includes the analysis of policy for attainment areas and the concept of prevention of significant deterioration of air quality. Comments ranged from an interest in an investigation of PSD permitting processes to an expression of the need to analyze the environmental, energy, and economic impacts of PSD. These issues are included in Part II of the Plan of Study.

Modifications to Part II resulting from the public comment period include an expansion of the discussion of the air quality modeling panel, an expansion of the description of general criteria for selection of regions for regional studies, and uses of these studies.

In addition, a study of permitting processes required by the Act was added to this part of the Plan. In this study, the Commission will examine the emission limitations contained in the permits issued, address the uniformity or consistency among permit programs, and examine time periods required for obtaining permits.

Most of the comments received were directed toward Part III of the Plan of Study, which includes an analysis of the nonattainment and emission offset policies. Most commenters urged the Commission to investigate alternatives to the concept of nonattainment or to develop alternatives to the offsets approach developed by the Environmental Protection Agency. NCAQ is planning to review nonattainment and offset policies in the regional studies under Part III. As an integral part of these studies, NCAQ will develop and evaluate alternatives. The discussion of regional studies in this part has been expanded from the draft Plan of Study to provide a more complete description of those studies.

Few persons commented on Part IV of the draft Plan. Commenters on that Part focused primarily on the need for Inspection/Maintenance (I/M) programs, and on the need for control of emissions of nitrgen oxides (NO_x) from vehicles versus NO_x emissions from stationary sources. The study of NO_x in Part IV of the Plan contemplates examining NO_x emissions from mobile sources and the relationship of these emissions to attainment of the primary and secondary photochemical oxidant standards and the short-term NO_x standard, which is to be proposed by EPA.

The issue of I/M programs will be addressed as part of regional nonattainment studies in Part III and through the study adopted by an amendment offered by Chairman Hart to the Plan which was approved at the June 22, 1979, Commission meeting. This study will examine several types of I/M programs to determine their effectiveness in reducing emissions from in-use vehicles.

Comments on Part V were general in nature and warned against potential pitfalls of cost/benefit analysis, especially attempts to quantify qualitative benefits derived from air pollution control. NCAQ recognizes potential problems inherent in attempting to advance the state of the art of cost/benefit analysis. Much of the Commission's early work in this area will involve analysis of shortcomings of existing techniques for the quantification of costs and benefits. The Commission also will attempt to devise methodologies which may be more advanced that those used in the past.

The industry studies outlines in Part VI were supported by industrial groups which commented on the draft Plan of Study. Some industry gourps responding nominated themselves for further study. The Plan of Study does not specify industries for study. The Commission will take these suggestions into consideration in the selection process.

Commenters on Part VII of the Plan supported studies of the following issues:

- Public participation in SIP development;
- Consultation among Federal, State and local government agencies;
- Coordination of planning efforts on all levels, and
- Reform of procedures and regulations.

These issues are addressed in studies set forth in Part VII.

Many commenters on Part VII suggested that the Commission review existing monitoring networks and monitoring techniques. As a result of public comments, the Commission added language to Part VII to incorporate an evaluation of the adequacy of existing monitoring networks. However, the Commission does not plan to evaluate monitoring instrumentation currently used to measure pollutant loadings.

Some commenters expressed concern over the impacts of the Act on development of control technologies. They mentioned both technology-forcing aspects of the Act and the potential for stifling technology. The Commission agrees that the impacts of the Act on development of control technologies is an important issue to be studied. Language added to Part VII of the Plan includes this.

Many commenters suggested specific studies which they felt the Commission should undertake. Many of them are mentioned in the Plan; others will be considered as detailed work statements for studies are developed. However, others are beyond the Commission's scope and resources.

Finally, there was a general concern that the limited time and resources of the Commission will not allow accomplishment of the goals set forth in the Plan of Study. As a result of limited resources, several respondents encouraged an extension of the Commission's mandate. Many commenters encouraged the establishment of priorities among the issues addressed in the Plan.

The Plan of Study was written with the assumption of a one-year extension to allow the Commission to report to Congress in 1981. Priorities for work will be established as a part of the budget process to be considered by the Commission at its August 1979 meeting. However, two additional points should be made on the issue of priorities and budgets. First, the Plan of Study reflects an initial screening of issues to be addressed by the Commission; those issues not included in the Plan of Study will not be addressed by the Commission. Secondly, there is no direct relationship between priorities and budget allocations. For example, a high-

priority study may be far less expensive to undertake than is a study with lower priority.

At the June 22 Commission meeting, Commissioners approved four amendments proposed by individual Commission members.

The first amendment is designed to ensure that Part I of the Plan focus on the process and criteria used in establishing ambient air quality standards and address the problem of the need for an investigation of research to eliminate delays in establishing and re-evaluating standards. Additional language added to Part I effects this change.

A second amendment added to Part IV an investigation of alternative ways to reduce emissions from in-use vehicles. As a result of this amendment, the study of the effectiveness of I/M programs discussed above was added to Part IV.

An amendment to Part VII of the Plan replaced the study of the relationships of federal, state, and local planning with an analysis of the effects of regulatory and procedural requirements promulgated under the Act. This analysis will be directed at ways to simplify and improve the regulations and procedures. The relationship of federal, state, and local planning efforts will be addressed as part of the regional studies in Parts II a. I III and in other studies to be conducted under Part VII of the Plan.

The fourth amendment made explicit that the NCAQ will study alternatives to the internal combustion engine and the relative impacts of these alternatives. Language was added to Part IV to add this subject to the issues to be addressed in Part IV of the Plan.

The plan as amended by the Commission was unanimously adopted as amended at the June 22 meeting. The text of the Plan adopted by the Commission is published below.

National Commission on Air Quality.
William H. Lewis, Jr.,
Director.

Plan of Study

Introduction

Congress established the National Commission on Air Quality in 1977 when it substantially amended the Federal Clean Air Act of 1970. Section 323 of the Act prescribes a number of studies for the Commission to carry out and gives the Commission a broad mandate to evaluate the Act in a comprehensive fashion.

The Commission is to conduct its review in light of the purposes of the 1970 Act and the 1977 Amendments. Those purposes, as stated in Section 101[b][1], are "to protect and enhance the quality of the Nation's air resource so as to promote the public health and welfare and the productive capacity of its population."

This Plan of Study divides the issues to be addressed in generally the same way as the provisions appear in the Clean Air Act. The Commission's study, however, will not be limited to considering the merits of existing provisions. In addition, the Commission will evaluate alternatives for achieving the goals of the Act in a fundamentally different manner. As alternatives are evaluated a major focus will be on simplifying the requirements contained in the present Act to the maximum extent possible consistent with the goals of the Act. These alternatives will be addressed throughout the Plan and will be summarized in Part VIII—Review and Analysis of Alternative Approaches to Air Pollution Control.

In general, the Act provides for controlling pollutants for which ambient air quality standards have been established. The establishment of these standards and the means of attaining or assuring that these standards are not exceeded are the cornerstones of the Act. Part I of the Plan—Analysis of National Ambient Air Quality Standards—will analyze these standards and the way they are established. This Part also will examine the need for controlling currently unregulated pollutants.

The Act imposes requirements for control of regulated pollutants under separate but related general headings: Prevention of Significant Deterioration of Air Quality; Plan Requirements for Non-Attainment Areas; Emission Standards for Moving Sources; Standards of Performance for New Stationary Sources; and National Emission Standards for Hazardous Air Pollutants. The Commission will study in detail the first three of these requirements and alternatives to them in Part II—Review and Analysis of Policy for Areas Attaining Standards; Part III—Review and Analysis of Policy for Non-Attainment Areas; and Part IV—Review of Vehicle Emission Standards. Part VI of the Plan of Study—The Impact of Air Pollution Abatement Activities on Selected Industries will examine the overall impact of all these requirements and the alternatives developed on specific industries.

In addition to directing a review of the key programmatic elements of the Act's requirements, Congress directed the Commission to study certain economic impacts and to review institutional arrangements and scientific research needed to implement the Act. Part V—Costs and Benefits Associated with Air Pollution Control and Part VII—Review and Analysis of Institutional Relationships and Research Programs will address these issues.

Congress also required the Commission to examine the effects of the Act on energy supplies and consumption and to address questions relating to enforcement of air pollution control laws. Because energy and enforcement issues are involved throughout the air pollution control program, the study will deal with these subjects in each appropriate Part.

Each part of the Plan consists of a discussion of issues to be studied by the Commission and a general description of the methodology to be used in studying them. The Commission will draw heavily from studies performed and data collected by government agencies, research organizations, and private groups. The Commission will critically analyze the assumptions, methodology, and findings of these studies. The Commission will supplement these studies as necessary and incorporate relevant information into its final report.

Because of limited time, many studies will be conducted simultaneously rather than sequentially. In a number of cases, however, studies completed early in the Commission's life will provide data and conclusions for studies to be completed later. For example, the information obtained from the oxidant and modelling panels discussed in Parts I and II below will be used in the regional studies in Parts II and III. Additional detail on how this approach will be used is provided in the discussions of methodology.

The Commission will establish a program to ensure broad public participation and will seek comments from the public at all stages of the program, including the development of its reports to Congress.

In fully involving all sectors of the public in its work, the Commission plans not only a public information program but also an active public involvement or public participation program. Through meetings, hearings, workshops, and briefings—both formal and informal, both in Washington, D.C., and throughout the country—the Commission will assure that groups interested in air pollution control issues have abundant opportunity to be involved in Commission activities.

The Commission will develop a detailed public participation/public information work plan which will emphasize that its approach is one in which the Commission not only informs the public of its own activities but also *listens* to the public's experiences and applies that information to the overall study.

This Plan of Study is the initial step in a process which will lead to the development of specific study programs in each of the eight general areas described above. The final Commission approval of this Plan will be followed immediately by a period of intensive research of available information and literature. The information gathering effort will enable the Commission to

define more fully the extent of research efforts which are necessary for each subject area. Based upon this review the Commission will prepare a budget that will indicate the amount of funds to be allocated for the studies in each of the subject areas. After approval of the budget, the Commission will begin preparation of the detailed work statements for studies in each of the areas.

The Commission has prepared an eight-feet by four-feet flow chart to graphically illustrate the interrelationships and sequences of the various parts of the Plan of Study. This chart is available for inspection at the Commission's offices at 499 South Capitol Street, S.W., Washington, D.C.

Upon the completion of all studies and review of public comments on the studies and draft reports, the Commission will develop appropriate reports and recommendations.

I. Analysis of National Ambient Air Quality Standards

A. *Issues to be Addressed.*

The establishment of National Ambient Air Quality Standards (NAAQS), which must be attained by a specified date, is a fundamental requirement of the present statutory framework. Pursuant to the Clean Air Act of 1970, the Environmental Protection Agency adopted national primary and secondary ambient air quality standards for sulfur oxides, total suspended particulates, carbon monoxide, photochemical oxidants, hydrocarbons, and oxides of nitrogen. In response to a court decision that the agency must adopt a standard once it determines that a pollutant coming from numerous sources causes adverse health effects, EPA also has adopted primary and secondary standards for lead.

Congress in the 1977 Clean Air Act Amendments directed EPA to establish an independent scientific committee to review the air quality criteria and ambient standards no later than December 31, 1980, and thereafter at intervals of not more than five years. Congress also provided that the EPA review can take place more often than every five years, and said the standards should be revised whenever the information justifies revision.

In the 1977 Amendments, Congress directed EPA to adopt a short-term (maxium three-hour) standard for oxides of nitrogen within a year of enactment of the amendments unless the EPA Administrator finds no such standard "is requisite to protect public health."

In addition, Congress amended Section 122(a) of the Clean Air Act to require EPA to investigate the need for setting ambient standards for radioactive pollutants, cadmium, arsenic, and polycyclic organic matter. If the EPA Administrator determines that any of those substances may endanger public health, then ambient standards, emission standards for hazardous pollutants, or new source performance standards must be adopted for them within one year of enactment, except for radioactive pollutants, for which the standards are to be adopted within two years of enactment.

The Commission will focus its activities on the process for, and the criteria used in, establishing ambient air quality standards. Special attention will be given to examining the adequacy of the resources available for the identification and evaluation of the effects of pollutants on public health and welfare, and to the adequacy of the present air pollution research organization to attract and encourage staffing capable of producing the highest caliber scientific basis for air quality standards. Studies will attempt to examine both the policy and physical phenomena related to standard setting. Several issues are particularly relevant to this area of study:

- A review of the practices used by EPA in preparing criteria documents and establishing NAAQS and practices which might be substituted for or added to existing ones
- An analysis of criteria considered in establishing NAAQS, including margin of safety, identification of susceptible segments of the population, distinctions among health effects for the purpose of assessing severity, duration, and reversibility, synergistic effects of pollutants, and secondary effects such as acid rainfall
- Scientific and medical bases for NAAQS
- The relationship between hydrocarbons and oxides of nitrogen in the formation of photochemical oxidants
- The necessity to develop a standard for fine particulate matter as a replacement for or in addition to the total suspended particulates (TSP) standard
- The consideration of fugitive dust in the establishment of particulate standards
- The need for a separate NAAQS for carbon monoxide at high altitudes
- The need for additional resources for research, or reorganization of the research effort, or both, to eliminate the delays in setting promised or mandated standards experienced under both the 1970 and 1977 Acts.

In addition to an examination of existing standards, the Commission will study the desirability of developing ambient or other standards for currently unregulated pollutants including pollutants resulting from chemical changes in the atmosphere (secondary pollutants).

B. *Methodology.*

The Commission's study in this area will consist primarily of an examination of the processes used by EPA in establishing NAAQS. The Commission will perform a preliminary literature search for each of the existing criteria pollutants and compile a list of candidate substances for further investigation to determine whether a NAAQS or other regulatory approach is required. The Commission also will establish a review panel to examine the relationship of hydrocarbons and oxides of nitrogen in the formation of photochemical oxidants.

The panel is not intended to develop the ultimate answers to all questions relating to photochemical oxidant formation. Rather, it is to provide the Commission with the most up-to-date scientific approach for use in its studies of oxidants, and clarify some of the considerable uncertainties which surround this subject. In addition, the panel should recommend what additional data and research are necessary to provide further understanding of atmospheric formation of photochemical oxidant. The panel will consist of 10-12 experts in the field selected by the Commission. The Commission will solicit names of candidates from the public through a notice in the **Federal Register** and from the candidates submitted will select the members of the panels. The specific questions to be addressed by the panel are: whether and how much one or both precursors of oxidant (hydrocarbons and oxides of nitrogen) must be controlled to attain the NAAQS for oxidant; whether the precursor to be controlled varies for different parts of the country; and, what are the most appropriate model(s) and assumptions to be used in the non-attainment studies in Part III. The review panel will be charged with developing within 90 days an approach to these issues by means of at least two intensive 3-4 day sessions where data and views can be presented in an uninterrupted manner. The conclusions of this panel will be necessary in order to complete the non-attainment studies in Part III and the NO_x control study in Part IV.

Upon completing the preliminary literature search, the Commission will examine the criteria and procedures used in establishing current and proposed NAAQS, candidate substances, and relevant studies by the National Academy of Sciences and public and private sector groups. In the examination of the criteria and procedures used in establishing NAAQS, the Commission will look at each of the standards established by EPA and will compare the definitions, criteria and procedures used in their development of them. This examination will provide a basis for identification of alternative criteria for issues such as: definition of margin of safety; identification of susceptible populations; distinctions among various health effects including reversibility; severity and duration. The Commission will identify information necessary to set standards based upon these alternatives. In each case the Commission will determine to the extent

possible the consequences of each alternative approach.

The Commission will review relevant scientific studies and data on health effects of fine particles and high altitude effects of carbon monoxide. In addition relevant data on candidate substances will be examined and recommendations will be developed on the most appropriate manner of treating each substance: e.g., establishment of a new source performance standard or no regulation.

The information developed from these studies will be the basis for recommendations by the Commission regarding the standard setting procedure, the need for refinement of certain standards, and the need, if any, for additional substances to be the subject of NAAQS or other standard setting. The research also will be used in other studies; for example, the attainment and non-attainment studies. The special studies on unregulated pollutants and high altitude CO emissions will be used in examining standards for motor vehicle emissions and their health effects.

II. Review and Analysis of Policy for Areas Attaining Standards

A. *Issues to be Addressed.*

Congress in the Clean Air Act of 1970 directed the Environmental Protection Agency to establish national ambient air quality standards and gave states primary responsibility for attainment and maintenance of both primary and secondary standards.

While directing that areas exceeding the standards reduce emissions to meet the standards, the Act did not specify requirements for areas of the country in which air quality was cleaner than required by the ambient standards. The issue raised in subsequent litigation was whether EPA could approve state implementation plans which did not prevent "clean air" areas from becoming "dirtier" up to the national standards.

With the courts ultimately determining that EPA could not approve such plans, EPA in November 1972 notified states that it would disapprove state implementation plans which did not provide for the prevention of significant deterioration of air quality (PSD). EPA's December 1974 PSD regulations were incorporated into SIPs under Section 110(c) of the Clean Air Act.

EPA's regulations established three classes with numerical "increments" specifying additional allowable pollution levels for sulfur dioxide and particulates. Class I allowed very minor additional pollution, Class II moderate additional pollution, and Class III additional pollution up to the NAAQS.

The PSD regulations were to be enforced through a preconstruction and premodification permit program applicable to 19 specified industries. Permits for sources in those industries could not be approved unless the sources would not exceed the applicable increments and unless they used best available control technology (BACT).

In its 1977 Clean Air Act Amendments, Congress affirmed the PSD concept and extended its application. In those Amendments, Congress mandated that EPA adopt PSD regulations for other criteria pollutants by August 1979. Within 21 months of promulgation of those regulations, state implementation plans are to be submitted to EPA and approved or disapproved in the succeeding four months.

Congress in the 1977 Amendments also expanded from 19 to 28 the number of source categories specified to be covered by the PSD regulations. It said "major stationary sources" within those 28 industries with the potential to emit 100 tons or more per year of pollutants would be covered by the regulations. The coverage would extend also to those sources with the potential to emit or increase emissions by 100 tons or more per year of any pollutant or any regulated under new source performance standards, national emission standards for hazardous air pollutants, or those regulated under the mobile source control title of the Act.

Beyond the 28 specified industries, other sources with the potential to emit 250 tons or more per year of any pollutant also would be covered.

The law specified that, except for certain federal lands, all areas initially would be classified as Class II and could be redesignated by states, Indian tribes, and federal land managers.

The Commission in this research will focus on issues related to the prevention of significant deterioration provisions of the Clean Air Act, with particular attention being given to values intended to be protected by those provisions and to impacts of PSD on source location and size, employment and regional economic growth. The Commission also will address questions relating to uniform implementation and enforcement of existing requirements of the Act and will consider alternative techniques for accomplishing the goals of PSD. Of particular interest will be the enforceability of alternative techniques.

In examining PSD and its impacts, the Commission will address a number of significant issues. These include:

- The appropriateness of the increments of additional pollution permitted by the Act in preventing significant deterioration of air quality in Class I, II and III regions;
- Alternative techniques, for example the use of standards in lieu of increments and the use of nonregulatory alternatives to PSD and the enforceability of such approaches;
- The allocation of PSD increments within a state and in interstate areas, particularly in areas with significant existing or potential energy development and generation;
- Whether existing PSD requirements affect the size and location of major sources and the effectiveness and appropriateness of existing siting requirements;
- Whether exclusion of non-major sources will affect the ability of major sources to meet existing increments;
- The reliability of existing modelling techniques and possible alternatives for PSD review, and the extent to which modelling should serve as a basis for approval of PSD permits;
- The desirability of including pollutants other than sulfur dioxide and particulates in PSD review including an analysis of approaches which may be used for these pollutants;
- Whether technology is available to permit projected economic growth without exceeding increments contained in the Act, and the cost of such technology;
- Best available control technology requirements;
- The adequacy of the existing methods for designation of lands of special national interest and of methods to add or delete such lands from Class I designation;
- The impact of the visibility provisions in the Act on future economic development, including industrial growth and tourism.

B. *Methodology.*

The Commission will develop the information necessary to address these issues through studies of selected air quality regions. Separate studies will focus on modelling, alternative designation techniques, inclusion of additional pollutants, and visibility.

The Commission will review existing literature which addresses these questions and on the basis of this search will develop a detailed study methodology. At the same time, the Commission will establish a modeling review panel. This panel, similar in composition and purpose to the photochemical oxidant panel, will have the following responsibilities: Review existing modelling techniques and assumptions taking into account the effects of variations in climate, meteorology, terrain, and other localized effects; recommend model(s) to be used by the Commission in its studies of TSP and SO_x for both level and rough terrain; and, examine the level of reliance which should be placed on modelling in permitting and other decisionmaking under the Act. The selection process for this panel will be similar to that described for the oxidant panel, above. The panel will be charged with making recommendations to the Commission within 90 days of its establishment. These recommendations will be considered by the Commission for use in the regional studies in this part and in Part III, and also for use in developing policy recommendations on modelling.

The Commission during this time will begin a study to examine the appropriateness of the existing increments of additional pollution permitted by the Act. In this study, the Commission will focus on whether the existing increments are appropriate to protect areas designated as Class I, II

and III from significant deterioration of air quality. The Commission will use results of the study to assess costs and benefits associated with the existing increments as compared to the alternative increment levels to be examined in the regional studies.

The Commission concurrently will select regions for study of the issues discussed above. Although these studies will be designed to be comprehensive, the Commission recognizes that local situations for all portions of the country cannot be addressed in these studies. However, the Commission believes that the in-depth evaluation contemplated in these studies will provide a sound basis for evaluation of current and alternative policies.

The Commission may select up to four regions for in-depth analysis depending upon the level of funding available to the Commission. Among the factors to be considered in selecting the regions are: representativeness of the type of area (urban, rural, climate, topography, etc.); industry growth projections including energy generation or development plans; institutional relationships; and, the adequacy of emission inventories. Another very important factor will be whether the region is classified non-attainment for other pollutants. The Commission will attempt to select regions for study which will provide the Commission with a representative range of impacts of Clean Air Act requirements. In this way, the maximum amount of information can be developed within the limited resources available to the Commission.

The regional studies will include the following components:

An examination of control technology and costs necessary for compliance with existing requirements;
The establishment of growth projections;
A review of emission inventory and air quality data from 1979 SIP submissions;
An evaluation of costs of control for existing increments in the region;
An evaluation of regional economic and energy impacts;
The development of alternatives to PSD including alternative increment levels;
An evaluation of costs, enforceability and institutional requirements of alternatives;
A comparison of environmental, economic, energy and technological effects of the current increment approach with the effects under alternatives considered.

The regional studies will be designed and performed in a manner which allows the most complete evaluation of existing requirements and impacts arising from these requirements, and also an evaluation of alternatives and their impacts. The methodology and analytical approach for all of these studies will be the same to assure consistent results.

When regions are selected for study the Commission will establish ad hoc information groups composed of local government, business and citizen representatives for each region. These groups will provide data and help involve local officials to ensure that the analysis uses the most accurate information available. Existing emission inventories and to the extent available monitoring data will serve as the basis for the calculation of the current baseline emission levels. Alternative growth projections will be developed and reviewed for reasonableness by the ad hoc information group. These projections then will be analyzed to determine whether the anticipated growth can occur under existing PSD increments and procedures. The analysis will cover the years 1981–1995. The baseline and growth projections will also be analyzed and compared to alternative classifications under the existing PSD program.

Concurrently with the determination of baseline emission levels and air quality, a comprehensive set of alternatives to PSD will be developed for use in all regional studies. The Commission will seek the participation of the public in the development of these alternatives. Each of the alternatives will be examined for its enforceability and impact on institutional relationships. The analysis described above will be repeated for each alternative approach selected.

These analyses will be designed to provide the following types of information for comparison purposes:

Relative impacts on air quality;
Impacts on ability to meet energy needs;
Technological and financial capacity to meet existing and alternative requirements;
Impact on siting requirements and resulting impact on regional development.

When the regional studies are being conducted, the Commission will examine the issues of designation methods, visibility requirements, and the desirability of including additional pollutants in PSD review. In the study of additional pollutants, the Commission will attempt to identify the types and relative magnitude of costs and benefits associated with including other pollutants in PSD review. This effort will include an examination of approaches which may be used to regulate such pollutants. In the study of visibility, the Commission will attempt to measure effects of the Act's provisions on regional economic development, including industrial growth and tourism, and the Act's effectiveness in protecting visibility in scenic areas. In the designation study, the Commission will examine existing procedures for designating Class I or Class III areas to determine their efficacy in preventing deterioration of air quality while permitting economic growth. The Commission in this study will work closely with the Department of the Interior and state and local officials in affected areas.

An early and on-going activity of the Commission will be a study of new source permits applied for since the enactment of the 1977 Amendments. This study is intended to provide information for several parts of the overall study. New source permit applications submitted to EPA will be examined to determine: the designation status of the area; the length of time from submission to issuance, or the length of pendency of the application if a permit has not been issued; the reasons for delay in issuing and denial of permits; the level of control required of the source; and inconsistencies among permitting agencies. This information will be used to help examine the issues surrounding BACT in this part of the study, and LAER in Part III. In addition, the pendency time will be used in serveral parts of the study to determine impacts on costs, siting and institutional issues, and to address the feasibility of consolidated permitting.

Results of the regional, increment evaluation, pollutant addition, visibility designation and permit studies will form the basis for the Commission's recommendations on the issue of PSD policies for attainment areas. These findings also will provide valuable data for the industry and institutional relationship studies described below.

III. Review and Analysis of Policy for Non-Attainment Areas

A. *Issues to be Addressed*

The Clean Air Act of 1970 required states to attain primary national ambient air quality standards by May 31, 1975, with extensions possible for some areas to mid-1977. Secondary standards were to be attained within a "reasonable time," and most state implementation plans defined that to be the same as the primary standard attainment date.

By the May 31, 1975 date, however, the Environmental Protection Agency reported that 150 of 247 air quality control regions still had monitored violations. Lacking congressional guidance on the consequences for states failing to achieve the standards by deadline, EPA adopted its own strategy for allowing new growth in non-attainment areas.

On December 21, 1976, EPA published an interpretive ruling on its preconstruction review regulations establishing what has become known as the "emissions offset" ruling. As amended in 1977, the Clean Air Act largely ratifies until July 1, 1979, EPA's interpretive ruling. After July 1, 1979, the ruling is to be replaced by revising state implementation plans (SIPs).

The revised SIPs must provide for annual emission reductions from existing sources, an emission inventory for all non-attainment areas, a growth

allowance, and detailed permit requirements for new major sources. The SIPs must demonstrate that primary NAAQS attainment will be accomplished by December 31, 1982, except for oxidants and carbon monoxide for which, upon the making of a special showing, deadlines can be extended until December 31, 1987.

The plans also must detail the amount of new growth permissible and require that new sources achieve the lowest achievable emission rate (LAER), which is defined as the most stringent emission limitation in the state implementation plan of any state for that class or category of source or the most stringent emission limitation actually achieved in practice, whichever is more stringent.

The state implementation plans must require also that existing sources use reasonably available control technology so that annual reductions in emissions will lead to attainment of the applicable NAAQS by the specified attainment date.

The Commission will assess the existing statutory requirements for areas not attaining ambient standards for their effectiveness in achieving the goals intended by Congress and for their effects on environmental health, energy development, employment and economic growth. The pollutants considered in this analysis will be sulfur dioxide, particulates, and photochemical oxidants. The Commission will examine several subsidiary issues as part of the overall non-attainment issue. These include:

The effectiveness of the offset/new source review provisions and alternatives to those provisions (e.g., emission taxes, emission "auctions," other market approaches to allocating emissions and other emission allocation procedures), and the enforceability of the alternatives;
The effectiveness and appropriateness of existing siting requirements other than the offset provisions;
The impact of interregional and interstate transport and background levels of photochemical oxidants on non-attainment control requirements (only in oxidants study);
The availability of offset sources within regions;
Whether the most cost-effective controls are being included in SIPs;
The need for Inspection and Maintenance (I/M) Programs in photochemical oxidant non-attainment areas;
The availability, effectiveness and costs of transportation controls for attaining or maintaining standards, including analysis of alternative policy instruments for achieving reductions of emissions from transportation systems; e.g., incentives/disincentives through federal transportation funding mechanisms and energy and economic impacts of these alternative funding approaches (only in oxidants study);
The effectiveness and uniformity of state and federal enforcement activities.
The use of alternative control schemes (e.g., increased emphasis on controlling mobile rather than stationary source emissions or vice versa) and resultant enforcement impacts;
The ability of states to attain standards by deadlines in the Act;
Consideration of the definitions of reasonably available control technology (RACT) and lowest achievable emission rate (LAER);
Special probles of small businesses and government agencies in obtaining emission offsets.

B. *Methodology.*

The Commission's research on non-attainment will be quite similar in approach to its studies of attainment areas. Except for the study on special problems of small businesses and government agencies in obtaining emission offsets, much of the data will be collected through regional studies. Once again the Commission recognizes the limitations of such an approach because the number of regions studied will not approach the number of non-attainment areas. However, the analysis contemplated in these studies will provide as sound a basis as is possible consistent with time and resource constraints, to evaluate existing and alternative policies.

The Commission will undertake an extensive literature search and upon completion will select regions to be studied. Considerations in the selection of regions will be similar to those discussed in the attainment areas study. The Commission will seek regions which may be attainment for some pollutants and non-attainment for others in order to assure examination of the broadest range of impacts. Also, the Commission will establish ad hoc information groups such as those described in the attainment area study.

Concurrently with the establishment of regional information groups, the Commission will prepare detailed work statements for these studies. The methodology for each will be the same to ensure that the results can be properly compared. Up to four regions for each pollutant will be selected for study depending on the level of funding available to the Commission. As with the attainment studies, these will use existing reports to the maximum extent possible. Also, the work done by the photochemical oxidants review panel and the modelling review panel will be used in these studies.

The content of the regional studies will be quite similar to the studies outlined the PSD/attainment area discussion, above. However, because of several significant differences in content, the basic elements of these regional studies also are listed; these include:

An examination of control technology and costs;
The establishment of regional growth projections;
A review of emission inventory and air quality data derived from 1979 SIP submission;
An evaluation of the way background levels and transport of oxidants affect development and implementation of control strategies (performed only in oxidant non-attainment studies);
The identification of alternative control strategies;
An evaluation of economic, technology, compliance time and health impacts of alternative strategies and alternative NAAQS levels (from NAAQS review studies);
The development of alternative approaches to offset/new source review policy;
An evaluation of costs, economic development, enforceability and institutional requirements of alternative approaches;
A comparison of offset/new source review procedures to alternative approaches.

The regional studies conducted under this Part of the Plan will be designed to assure a thorough examination of existing requirements and alternatives to these requirements. Each regional study will use the 1979 SIP submission as the basis for emission inventories and control strategies. For oxidant studies, assumptions will be made for measures to be required in the post 1982 period. These will be made in conjunction with local officials and the ad hoc information committee. The emission inventory and monitoring data will be examined to determine its accuracy, and improvements will be made where they are necessary. Next, alternative growth projections will be developed and analyzed. The ad hoc information group for the region will play an important role in helping to determine the reasonableness of these projections. Using the inventory of existing sources and alternative growth projections, an analysis will be performed of the existing SIP requirements (including an analysis of offset or other mechanism contained in the SIP). This analysis will be designed to provide information on air quality levels for 1982, 1987 and 1995. These can then be compared to existing and alternative standards. The analysis of existing SIP requirements will also provide a basis for determining economic and energy impacts of these requirements, and basis for comparison with alternative requirements.

Concurrently with the evaluation of the emission inventory and growth projections, alternatives to offset requirements will be developed for use in air regional studies. As stated above, each of the alternatives developed for use in the regional studies will be evaluated for their enforceability and impact on institutional relationships.

The existing SIP control requirements together with each of the alternatives to the offset requirements will then be separately analyzed to determine air quality levels in 1982, 1987 and 1995

under each of these approaches. In addition, alternative control requirements (e.g., I/M or no I/M; transportation controls or no such controls; stricter levels of control of mobile sources or stationary sources or both; control of currently unregulated sources) will be developed and analyzed together with the offset requirements and each of the alternative approaches to offset. These analyses will allow comparisons of air quality, energy and economic impacts to be made among existing requirements, alternatives to offset, and alternative control strategies. These can provide specific information on:

The impact of alternatives on energy development and consumption;
The ability to attain NAAQS;
The dates by which NAAQS can be attained;
The technological and financial impacts;
The impacts on siting and resulting impacts on regional development.

The study of problems encountered by small businesses and governmental agencies in obtaining offsets will proceed while the regional and industry studies are in progress. The Commission will examine the extent of problems and identify possible means of eliminating them (if serious problems exist). In addition, the Commission will evaluate the impact of alternative approaches to non-attainment developed as a part of the regional studies.

The permit study described in Part II will be used to examine the definition of LAER and to obtain information on technology, emission reductions and costs for the regional analyses.

Results of the regional studies and of the small business study will form the basis of the Commission's recommendations on policies and strategies to attain ambient air quality standards in present non-attainment areas. They also will provide data for studies conducted in the Institutional Relationship and Selected Industry portions of the Commission's Plan of Study. Varying mobile and stationary source control options also will be useful to the Vehicle Emission Standards Study.

IV. Review of Vehicle Emission Standards

A. Issues To Be Addressed

Congress in 1965 noted that "the problem of motor vehicle pollution is growing," and said that photochemical smog "is appearing with increasing frequency and severity in metropolitan areas throughout the nation." The Senate that year said it was convinced that "manufacturers have the capability of incorporating air pollution reduction facilities in their vehicles" for hydrocarbons and carbon monoxide, but it said "further research is needed to determine effects of automobile pollutants other than hydrocarbons and carbon monoxide and to find means of controlling them."

In the Motor Vehicle Air Pollution Control Act of 1965, Congress directed the Secretary of the Department of Health, Education and Welfare to "conduct and accelerate research programs" into these and other automobile emission problems. In enacting the 1970 Amendments to the Act, Congress adopted automobile emissions standards for hydrocarbons, carbon monoxide, and oxides of nitrogen.

In the 1977 Clean Air Act Amendments it established interim automobile emission standards for those pollutants for 1978–1979, and 1980, with "final" standards to be achieved by 1981. Under the 1977 Amendments, the 1981 standards call for meeting 0.41 gram per mile for hydrocarbons, 3.40 grams per mile for carbon monoxide (with the possibility of a two-year waiver to 7 grams per mile), and one gram per mile for oxides of nitrogen (with a research goal of 0.4 gram per mile and with an innovative technology or diesel waiver to 1.5 grams per mile).

The 1977 Amendments also require automobile manufacturers to demonstrate to the Environmental Protection Agency Administrator the health and safety impacts of new motor vehicles and engines and of new fuels and fuel additives. EPA is authorized also to prescribe gasoline fill pipe standards for new motor vehicles to assure proper connections with approved vapor recovery systems.

In addition, the 1977 Amendments provide for civil penalties of up to $2,500 for tampering with auto emission controls, and the Amendments require EPA to develop and phase in heavy-duty vehicle emission standards for hydrocarbons, carbon monoxide and, by 1985, for oxides of nitrogen. The heavy-duty vehicle statutory standards require 90 percent hydrocarbon and carbon monoxide emission reductions by 1983 and a 75 percent oxides of nitrogen reduction by 1985.

The Commission will examine the following issues related to vehicle emission standards:

The availability of technology and the economic, energy and environmental effects of achieving required and proposed control levels for NOx emissions;
The effectiveness of existing and proposed control technology for all pollutants, including the problems of deterioration of current technology, tampering and fuel switching;
The need for emission limitations for currently unregulated pollutants;
An analysis of alternatives to the internal combustion engine and the pollution control fuel economy, and cost implications of such alternatives;
The effectiveness of alternative ways to reduce emissions from in-use vehicles;
The control of vehicle emissions at high altitude.

B. Methodology.

The Commission will design these studies to determine the emission standards necessary both to attain and maintain relevant NAAQS and to protect the public from currently unregulated pollutants such as nitrosamines.

In the case of NOx emissions, existing exhaust standards for gasoline and diesel vehicles and alternative levels will be examined to determine benefits of the various limitations in attaining the existing photochemical oxidants standard, and the short-term ambient standard for NO_2 to be proposed by EPA. The Commission also will study the availability and cost of technology to meet more stringent NOx standards.

The Commission will examine the impact of NOx emissions on non-attainment of the photochemical oxidants NAAQS by examining varying vehicle emission levels of NOx in the regional non-attainment studies discussed above and also examining benefits and costs which would result from such controls. The Commission will evaluate the impact of NOx emissions on meeting the proposed short-term NO_2 NAAQS by determining the effects existing and alternative emission levels would have on attainment in a non-attainment area. In examining alternative NOx emission standards, the Commission will estimate fuel economy impacts of various alternatives.

Finally, as a part of the NOx study, the Commission will assess the potential NOx reductions obtainable with an I/M program and consider which type of test for the NOx may be best suited for I/M programs.

In the study of control technology, the Commission will examine questions related to equipment currently in use, and will examine the impact that anticipated control technology or alternative engine designs may have on these questions. The Commission will review catalyst technology to determine how much catalytic converters deteriorate in in-use vehicles. In addition, the Commission will determine the extent to which tampering with other engine components and fuel switching reduce the control obtained from these devices. The Commission then will assess anticipated control technology and alternative engine systems to determine their effects on these issues and will attempt to identify potential areas of concern with these technologies.

The Commission will examine several types of I/M programs to determine their effectiveness in reducing emissions from in-use vehicles. This study will examine both idle and loaded tests, various pass-fail levels for CO and HC, and other programs such as mandatory maintenance, and component examinations. This study will examine each type of program both for present

technology vehicles as well as for technology anticipated in the post-1981 period. As mentioned in Part III above, the regional nonattainment studies for photochemical oxidant will include an analysis of ambient levels both with and without an I/M program.

The Commission will study the control of CO by examining benefits and costs of existing and alternative emission levels both at sea level and at high altitude. The Commission will examine the impact of different CO limitations by analyzing three typical non-attainment locations for CO: an urban central business district at sea level; a major suburban shopping plaza at sea level; and a business district with heavy traffic at high altitude. Each of these conditions will be examined assuming both the existence and the absence of an I/M program.

In each case, the Commission will examine existing and alternative CO emission limitations to determine effects they have on attainment of NAAQS. The Commission also will address the impact of the alternative emission levels on fuel economy at sea level and at high altitude in light of findings in the NAAQS study regarding the need for a high-altitude CO NAAQS.

Currently unregulated pollutants from vehicles, specifically including diesel-powered vehicles, will be examined in light of the study of regulated and unregulated pollutants in the NAAQS study described above. The Commission will determine emission levels of these pollutants by examining data from manufacturers and control agencies. This study will focus on determining what contribution unregulated vehicular emissions make to the overall emissions of substances of particular concern and also the extent to which current and anticipated emissions will present a health or other environmental problem.

In its vehicle emission studies, the Commission will explore the adequacy of some of the most debated areas of the 1977 Clean Air Act Amendments. In addition to forming an integral part of the Commission's final report to Congress, the results will provide data for the cost-benefit, institutional relationship and alternative analysis portions of the Plan of Study.

V. Costs and Benefits Associated With Air Pollution Control

A. *Issues to be Addressed.*

The Clean Air Act currently contains requirements which specifically allow or disallow the examination of costs in making certain decisions. For example, costs must be considered in establishing new source performance standards, but costs cannot be considered in establishing an emission standard for hazardous pollutants. The most cost-effective means of attaining standards is allowed for attainment of NAAQS, but if NAAQS cannot be attained by the use of these means then cost is not to be considered. The Commission will examine both the costs and the benefits of air pollution control generally and also the use of cost-benefit analyses as they apply to air pollution control.

The Commission will examine at a macroeconomic level both the costs and benefits associated with air pollution control. The Commission also will examine cases in which cost/benefit analyses can and should be used in air pollution control activities and cases in which cost/benefit analyses can and should be used in air pollution control activities and cases in which cost/benefit analyses cannot be used. To the extent possible, the Commission will quantify aggregate costs and benefits of past and future controls. Where precise quantification is not possible, the Commission will attempt to provide, where appropriate, a range or estimate based upon the best available methodology.

Examples of the types of costs and benefits to be examined include:

Costs

Capital costs for compliance;
Operation and maintenance costs;
Opportunity costs/foregone investment;
Administrative fees (consultants legal fees);
Control agency budgets;
Decreases in employment in certain industries;
Decreases in plant productivity.

Benefits

Health—Lower health care costs because of fewer adverse health effects of air pollution;
Aesthetic—Increased visibility;
Economic:
Increased worker productivity;
Increased employment in certain industries;
Less damage to structures, materials and property values;
Fewer adverse effects on aesthetics and tourism;
Increases in plant productivity and process modernization as a result of pollution control investment;
Recovery of materials.

Other issues to be examined as part of this analysis include the effects of domestic air pollution control requirements on U.S. industry in international markets and effects on the balance of trade. In addition, with data developed in the regional attainment, non-attainment, vehicle emission and industry studies, the Commission will examine marginal costs associated with the marginal benefits of increasingly stringent control requirements.

B. *Methodology.*

The Commission in its study of these questions will emphasize the assignment of values and quantification of benefits because they are a relatively new and more speculative area of study. The Commission will begin its compilation of these data early in its study through an extensive search of existing literature. The literature search will determine where additional information is necessary in order to attempt to fully quantify, or accurately estimate, a cost or benefit, or to determine where quantification is possible given current valuation techniques.

The literature search will be followed by workshops focussing on current methodology used in assessing costs and benefits. The goals of these workshops are: To identify the major issues involved in the accurate assessment of both costs and benefits; to identify research needs in the assessment process; and to determine a commonly accepted methodology for the assessment of both costs and benefits. This effort will enable the Commission to determine how or where such additional information can be obtained or the type of analyses necessary to develop it. Where the development of gathering of that information will not involve extensive new research, the Commission will attempt to obtain or develop the information. Where major new research is needed, the Commission will identify the type of work to be undertaken.

The Commission also will examine the use of cost-benefit studies in future air pollution control programs at all levels of government. The Commission will examine current practices and determine situations in which they can and cannot reasonably be used. The Commission will use the results of the quantification and valuation analyses discussed above to determine potential additional uses for them in air pollution control activities.

VI. The Impact of Air Pollution Abatement Activities on Selected Industries

A. *Issues to be Addressed.*

The existing statutory requirements for attainment and non-attainment areas, together with requirements for new source performance standards, national emission standards for hazardous pollutants, and visibility requirements create a complex framework within which sources are to operate. In analyzing the attainment and non-attainment parts of the Plan, the Commission will focus on general effects of existing and alternative requirements and will not assess effects on a specific industry. In this portion of its activities the Commission will examine the overall impact of the Act's requirements on specific industries, with high priority being given to energy-related industries, particularly those using coal or affecting coal utilization.

The Commission in this area will examine the following broad subjects:

The effects of existing control requirements on new, modified and existing sources;
The effects of alternative control approaches on new, modified and existing sources.

On the first issue, the Commission will study existing control approaches and assess the abatement technologies necessary, costs, energy consumption, and effects on the environment, employment and economic development. On the second issue, the Commission will examine the effects alternative approaches to PSD and offset/non-attainment review may have on existing sources, and on siting decisions for new or modified sources. In these studies, the Commission will attempt to determine the extent of overlapping requirements for PSD, non-attainment review, new source performance standards and visibility requirements and whether alternative approaches would reduce or increase the amount of any overlap.

B. *Methodology*

The Commission in this research effort will focus on in-depth analyses of selected industries. The Commission first will select candidate industries for study. The Commission will examine those industries which will be affected by the broadest range of requirements contained in the existing Act. It will give top priority to energy-related industries, with particular emphasis on those industries affecting increased coal utilization. Because many studies of major industries have been undertaken by industrial and governmental groups, and because of limited Commission resources, the Commission intends to use studies conducted by others to the greatest possible extent, both in selecting industries and in performing its analysis.

Once the Commission selects the industries, it will make a thorough literature search to examine the studies previously performed on the industries. This approach will enable the Commission to determine what additional data or analyses will be necessary to complete the studies contemplated and to develop a detailed work statement.

While the literature search is being conducted, the Commission will establish an ad hoc information group for each industry selected. These groups will consist of representatives of the industry to be studied, control agencies, and environmental and labor organizations. The groups will provide a flow of communication among the Commission, the industry, and those affected by the industry. These groups will help assure that the Commission and those performing the study for the Commission have the most accurate data possible.

Each industry study will include the following components:

A compilation of the availability of control technology, environmental effects, costs, and energy needs associated with existing SIP requirements;

A cost-effectiveness analysis of various processes and controls;

The performance of air quality modelling to predict impacts relative to the following: existing PSD increments; alternative increments; alternative approaches to PSD offset/new source non-attainment review; new source performance standards; visibility requirements;

Selection of possible control techniques for existing and alternative requirements;

Assembly of regional and national projections of future new and expanded plants;

Extrapolation nationally of technology availability and costs;

Evaluation of regional and national effects of existing and alternative approaches on economic growth, employment, energy consumption and development and, where appropriate, coal utilization.

The Commission will examine results of these analyses in light of the overall impact each industry has on national and regional air quality, economic development, employment, and energy development, especially the future use of coal. In the studies of industries which utilize coal an analysis will be performed of current and projected emissions of carbon dioxide (CO_2) from sources in that industry, as well as the relationship between coal combustion and radioactive by-products. The studies will be conducted to allow consideration of effects that current requirements have on plant siting and sizing decisions. In addition, they will examine overall effects on the industry of alternative approaches to existing requirements which will be developed as part of the regional studies of attainment and non-attainment areas.

The Commission will use these studies in conjunction with the regional and new source permit studies discussed above to evaluate the overall effects of existing requirements and alternative control approaches. These studies will provide the Commission with an examination of existing and alternative requirements from an important additional perspective. The analysis will help the Commission develop overall recommendations on attainment, non-attainment and new source review policies and procedures, particularly as they affect energy development and coal utilization.

VII. Review and Analysis of Institutional Relationships and Research Programs

A. *Issues to be Addressed.*

The Commission will focus its attention in this area on the relationships between federal, state, and local governments and the private sector in planning, administering and enforcing the Clean Air Act, and on air pollution-related research activities of government and industry. Specific questions to be addressed include:

The ability of federal, state, and local governments to implement and enforce existing provisions of the Act, including an examination of available resources, of existing sanction provisions;

The effects of regulatory and procedural requirements of federal, state, and local programs, and ways to simplify and improve them;

The adequacy of research, development, and demonstration projects conducted by federal, state, and local governments and private industry;

The adequacy of air pollution monitoring networks and impacts associated with the presence or absence of adequate monitoring;

The ability of business to secure the financial resources and train the personnel necessary to assure compliance with the control requirements contained in the Act.

B. *Methodology.*

Early in the course of its study, the Commission will identify the effects of the regulatory and procedural requirements of Federal, state, and local programs under the Act. Examples of issues to be examined include: effects of permitting requirements on new source construction, and the extent of reporting requirements and their relationship to enforcement. At a workshop of affected parties, the Commission will identify the major effects of regulatory and procedural requirements and solicit proposals for appropriate changes in the requirements (without addressing substantive requirements). In evaluating these proposals, the Commission will involve business, government agencies, and public interest groups.

The Commission will study administration and enforcement of existing provisions of the Act by EPA and state and local governments. It will examine statutory authority of state and local agencies, resources available to all levels of government, and the effectiveness in using those resources for planning, surveillance and enforcement. The Commission will emphasize two areas: The proper role of the federal government in the air quality planning process; and implementation of the Act by all levels of government. As part of this study, the Commission will examine the relationship of air quality planning to other state and local planning activities and, in particular, the role of regional planning organizations. Recommendations for improvements or adjustment of any major differences in planning and enforcement will be developed.

To carry out this study, the Commission will contact officials at all levels of government and industry for views and data. Some of this contact will take place in the regional and industry information group activities which are part of the attainment, non-attainment and industry studies. The views of officials in other regions and industries also will be actively sought. Of particular interest will be the degree of participation by elected and non-elected officials, business and labor officials, and public interest groups in developing the 1979 SIP revisions, and

the effects of any sanctions imposed because of EPA non-approval of those plans. The Commission will also examine the Section 175 (Department of Transportation) transportation planning grants to local agencies, the urban demonstration grants made by the Department of Housing and Urban Development, EPA and the Department of Commerce under the President's Urban Policy, and the consultation and coordination processes under Section 174 of the Act.

The Commission will analyze current and projected budgets, personnel levels, and enforcement activity data by reviewing existing SIPs and contacting appropriate officials. Whenever possible, the issues explored in this study will be analyzed in conjunction with the regional studies described earlier in the Plan of Study.

In a second study to be done simultaneously with the one described above, the Commission will examine the air pollution research done by federal, state and local governments and industry. Federal research activities will be carefully scrutinized and evaluated, and several state and local programs will be selected for examination. In addition, the Commission will examine efforts of selected industries and industry groups to further air pollution research activities. In this study, the Commission will determine the adequancy of research programs at each level and recommend possible improvements.

For federal agency analysis, the Commission will draw upon reports in light of recent activities. The Commission will use existing reports and data on state, local and industrial efforts where available, and additional information will be obtained through interviews with appropriate officials.

An important part of the regional attainment and non-attainment studies will be the development of alternative approaches to meeting the goals of PSD and offset/new source review policies. As indicated in the description of those studies, a portion of them will be devoted to examining institutional relationships which would be created by substituting each alternative for the existing approach, as well as the enforceability of each of these measures. Because these factors are critical to determining the viability of these alternatives, Commission personnel who will analyze these issues will not have participated in developing the alternative approaches.

The Commission will conduct a survey of monitoring networks in selected areas of the country to examine the adequacy of these systems. This information will allow the Commission to examine the impacts associated with adequate and inadequate systems. The study will examine both urban and rural areas and will address all pollutants for which NAAQS presently exist. Such a study is important because monitoring provides the quantitative evidence of the degree to which requirements imposed under the Act are achieving NAAQS.

In the study of the ability of industry to achieve requirements contained in the Act, the Commission will use data collected in the regional attainment, non-attainment, industry and cost-benefit studies. The Commisson will examine not only the financial commitments needed to comply with the Act's requirements and sources of these resources, but also training programs established by industry to assure proper operation and maintenance of pollution control equipment, and proper reporting of information to control agencies.

The institutional relationships, research and monitoring studies will be especially important to almost all other Commission studies. The findings will be applied to these other studies as they are completed to test the practicality of alternative approaches to the 1977 Clean Air Act Amendments and to support final recommendations of the Commission.

VIII. Review and Analysis of Alternative Approaches to Air Pollution Control

A. *Issues to be Addressed.*

Other parts of the Plan provide for developing and evaluating alternatives to the specific area of the Act being considered. These alternatives include economic and other non-regulatory approaches and alternative emission limitations as potential substitutes for existing requirements.

This portion of the study, in addition to compiling and summarizing conclusions about each of the alternatives, will review alternatives transcending specific issues such as attainment or non-attainment, now provided for under the Act. In particular, the Commission will emphasize the study of economic incentives. The Commission also will examine alternatives which would require that pollutants from all media be addressed comprehensively. The Commission in this part of the Plan also will assess the technology-forcing requirements of the Act and examine possible alternative approaches to effectively encourage advances in control technology. Advantages and disadvantages of all alternatives will be considered, and an evaluation made of each approach or combination of approaches.

B. *Methodology.*

The Commission will thoroughly examine each of the studies prepared as part of this Plan of Study. The alternatives discussed in each of these studies will be reviewed both as complete or partial replacements for and as supplements to existing requirements. The Commission will examine the alternatives and advantages and disadvantages of each, and assess whether the overall goals of the Act could be better accomplished by use of one or more alternatives. In this evaluation, the Commission will consider the net effect on air quality and other environmental programs, enforceability, economic impacts, and needed institutional arrangements.

While analyses of these considerations will take place as part of each study, the examination in this part will enable the Commission also to review the total statutory framework. That review may result in modifying some of the alternatives or applying approaches in one subject area to other areas.

This approach will allow the Commission to explore more fully the range of possible approaches and to evaluate implications of these newly developed or modified approaches.

While reviewing and evaluating alternative approaches to existing issues, the Commission also will examine whether economic and other non-regulatory approaches can be used effectively to deal with the major issues created by the Act and whether these alternatives will help simplify compliance requirements. As discussed previously, these approaches may include auction or other market approaches, emission taxes and other alternative concepts to existing PSD and non-attainment requirements. The Commission will develop candidate alternatives in light of future growth and technology projections and those alternatives will be examined in terms of enforceability, economic impact and needed institutional relationships.

The results of these studies on alternative approaches will be an essential part of the basis for the Commission's overall recommendations.

IX. The Final Report

Upon concluding the studies in the eight areas described above, the Commission will review and compile the findings of each. These findings will then be reviewed in the context of the overall statutory scheme; within two months of completion of all studies, a draft report will be prepared for review by the general public. After that review, the Commission will consider the views and comments and prepare a final report to Congress.

The final report will contain recommendations on issues for which statutory modifications appear desirable and the framework for such modifications; issues for which no changes to the existing statute appear necessary; issues for which modifications to current administrative practices and procedures would be appropriate; and will identify areas where further research is necessary.

[FR Doc. 79-2969 Filed 1-5-79 8:45 am]

BILLING CODE 6820-96-M

NATIONAL COMMISSION ON AIR QUALITY

Policy On Public Participation

NATIONAL COMMISSION ON AIR QUALITY

Policy on Public Participation; Responsiveness Summary

The National Commission on Air Quality (NCAQ) Public Participation Plan published below has been revised to take into consideration comments received on the draft Public Participation Plan published in the September 5, 1979 Federal Register. Over fifty comments were received from state, local, and federal agencies, large corporations and small businesses, national and grassroots environmental, civic, and health organizations, and individuals. This revised plan will assure active and meaningful public involvement in the Commission's studies of the Clean Air Act, as mandated under Section 323 of that Act. All public comments are available for review at the NCAQ office, 499 S. Capitol Street, S.W., Washington, D.C. 20003.

The Commission during its studies will seek to ensure broad public participation at important stages of its program, including during the development of its reports and recommendations to Congress. The final plan seeks to assure not only that the Commission informs the interested public about its studies but also that the Commission is advised of the experiences of all sectors involved in air quality issues and applies that information to the overall study.

Specifically, the Commission asked for comment on three issues: The feasibility and value of the Commission's sponsoring a national conference on air quality; the concept of a formal, independent mid-point evaluation of the Commission's public participation program, with recommendations, if appropriate, for improving the effort; and the necessity for reimbursing particular sectors of the public for travel costs associated with participation in Commission activities.

A substantial majority of the commentors felt that a national conference on air quality would be of little or no value to the Commission. Commentors felt that Commission resources could be better spent on other activities such as regional meetings, extensive review of draft reports, and increased involvement in NCAQ technical studies. Therefore, the Commission has deleted the section proposing a national conference and has increased the emphasis in these other areas.

Comments concerning a formal independent mid-point evaluation were split between those who supported such an evaluation and those who did not. Of primary concern to those opposed was the possible expense associated with such an evaluation. Several commentors suggested a more modest approach in which a diverse group of individuals and organizations would be asked for candid assessments and suggestions concerning the NCAQ public participation effort, without the formality of a paid panel. The Commission has accepted this approach and has incorporated it into the evaluation section.

There was strong support for a reimbursement policy covering the travel expenses of certain participants in specific NCAQ activities. Commentors suggested limiting reimbursement to those individuals who had maintained steady involvement in NCAQ activities, who would find it difficult to participate otherwise, who could not obtain reimbursement elsewhere, and who had unique viewpoints. In response to this majority of commentors, NCAQ has instituted a policy of reimbursing travel expenses of information group members who attend workshops in the regional study areas selected under Parts II and III of the Plan of Study. Reimbursement will be based on need and inability to obtain reimbursement elsewhere. On the basis of experience with these workshops and a continuing availability of resources, NCAQ may apply this policy to regional meetings to be held in early 1981 as alternatives to a national conference.

Specific suggestions were also received on other parts of the draft public participation plan. Many were incorporated, such as additional categories for the mailing list, expanding representation on the expert panels and information groups, initiating an effort to award small contracts to local organizations for arranging information group workshops, and increasing the number of meetings held outside of Washington, D.C.

Some suggestions, however, cannot be included in the plan, primarily because of associated costs. Those include setting up depositories in every state air quality program, videotaping expert panel discussions and other meetings, and distributing multiple copies of Commission meeting transcripts. There also were suggestions that NCAQ increase the public comment period from 30 days to 45 or 60 days. While the Commission will actively solicit comment on key decisions at the earliest reasonable time, the short time frame within which the Commission must operate requires adherence to a 30-day comment period. This period will be substantially extended, however, while the NCAQ draft final report is being considered by the public.

Finally, some proposed tasks were deleted from the draft plan based on an analysis of the plan's scope and available staff resources. They include the summary of interest group activities, the separation of the core mailing list by interest area, the clearinghouse function for basic air quality information and the profiles of regions and industries selected for study under Parts II, III and VI of the Plan of Study. These tasks may be attempted in the future as time and staff permit. The Commission thanks individuals for their comments and encourages continuing dialogue about this and other areas of the NCAQ effort.

William H. Lewis, Jr.,
Director

National Commission on Air Quality
Public Participation Plan

Introduction

The Public Participation Plan for the National Commission on Air Quality (NCAQ) is divided into four sections: Initiation of Public Contact; Information Dissemination; Consultation and Response; and Evaluation.

Public Participation activities in each section are closely related to the Commission's technical work, as

outlined in the Commission's June 22, 1979 Plan of Study. The activities are intended to increase communication between the public and the NCAQ Commissioners and staff members on air quality issues.

The Commission expects this Public Participation Plan to be flexible and dynamic, changing in response to public comments to meet changing needs. The plan will be revised also to reflect ongoing evaluations. NCAQ hopes that the public will continue to propose additional innovative ways to accomplish the participation objective, provide insights about successes and failures of other public participation efforts, and suggest areas of emphasis throughout the study period.

The Public Participation Plan proposes that the Commission undertake a variety of activities such as workshops, expert panels, information groups, public hearings and meetings. These activities will provide opportunities for substantive dialogue among air pollution control interests.

The Commission has employed three full-time professionals who are primarily responsible for public participation activities with the following major individual constituencies: business, industry and agricultural interests; environmental, public health and labor interests; and federal, state and local government interests.

In addition to these three liaison persons, the Commission has employed as assistant director for public affairs and administration, with direct responsibility for overseeing public participation activities. Two other individuals in the Office of Public Affairs and Administration—the public information officer and the meetings coordinator—also will work in the public participation effort, as will virtually all members of the Commission staff and the Commissioners.

Objective

The purpose of this Public Participation Plan is to ensure that any and all interested parties become actively involved in the ongoing work of the National Commission on Air Quality. The Plan is designed to provide opportunities for consensus to emerge on Clean Air Act issues, and ultimately, on the Commission's report to Congress.

Because this report will affect national policy on air pollution control, it is essential that diverse interests contribute to the Commission's examination of the Clean Air Act, and to its study of alternative means of achieving the Act's goals.

Accordingly, this Plan establishes a strategy for fulfilling the Commission's fundamental intent both to inform and respond to a multiplicity of interests and opinions on air quality issues.

I. Initiation of Public Contact

The Commission intends to identify groups or individuals who may be interested in or affected by air pollution control issues. An initial mailing list has been compiled. The Commission expects that this list will be continually expanded as additional names are suggested and as additional groups seek to be kept informed of Commission activities. Tasks to initiate public contact include:

A. *Identification and inclusion on the mailing list of groups and individuals interested in air quality issues.* This group will receive the Commission's monthly newsletter and other major NCAQ publications. Initial estimate is 7,500 names including (in alphabetical order):

Agricultural Interests
Civic Associations
Companies
Congress and Congressional Staff
Consumer Groups
Conservation Organizations
Educational Groups
Environmental Organizations
Federal Departments and Agencies
Finance and Economic Development Groups
Individuals
Industry Groups and Trade Associations
Labor Organizations
Local, City, County Government Agencies/ National Organizations
Medical Professionals
Minority Groups
National and Local Media
Public Health Organizations
Regional and State Air Quality Public Participation Programs
Regional Government Agencies
Scientific and Professional Associations
Small Businesses
State Executive Branches
State Legislative Branches
Trade Press and Specialized Press
Urban Neighborhood Organizations
Other

B. *Organization of the mailing list* into the following categories:

1. A list of the most active, interested, and involved groups and individuals nationwide—initial estimate 2,000. The Commission will attempt to keep the groups and individuals on this list fully informed about the Commission's progress and will contact them by direct mail or telephone on occasions when public comment is being sought.

2. Lists of groups and individuals according to geographic regions. This list will be particularly important for those regions selected for study under Parts II and III of the Commission's Plan of Study.

C. *Initiation of Public Contacts.* While much initial contact will be made by telephone, the following formal contacts will also be made:

1. Media contacts for print media including national newspapers and news magazines, trade and specialized publications. In many cases, information will delivered to Washington bureaus of out-of-town papers, or to news services which supply local publications. Regional mailing lists will be developed in areas where NCAQ Commissioners live and work and in regions selected for intense study. Press releases and other information will be addressed to the appropriate environmental writer or editor.

Mailing lists for radio and television will be developed in an identical manner and scope. When live coverage is appropriate, special efforts will be made to notify assignment editors and "talk-show" producers.

2. Initial mailings to entire mailing list including NCAQ Plan of Study and accompanying fact sheet, introduction of Commissioners and key staff, and background information on NCAQ mandate, history, and organizations.

II. Information Dissemination

A. *Establish and maintain information depositories.* Each depository will contain interim and final reports from technical studies completed under contract to NCAQ background information about the Commission, and other relevant information. NCAQ will be responsible for keeping the contents of the depository current. The NCAQ library at the Commission office in Washington, D.C. will also be open to the public during normal working hours.

1. An information depository will be established in each of the standard federal regional office cities and at least one city in each regional study area selected under Parts II and III of the NCAQ Plan of Study. These locations include:

Albuquerque, NM	Miami, FL
Atlanta, GA	Minneapolis, MN
Boston, MA	New York City, NY
Chicago, IL	Philadelphia, PA
Cincinnati, OH	Phoenix, AZ
Dallas, TX	Raleigh-Durham, NC
Denver, CO	San Francisco, CA
Grand Junction, CO	Seattle, WA
Kansas City, MO	Toledo, OH
Los Angeles, CA	Washington, D.C.

2. Coin operated copying facilities will be available in each depository location. A limited number of interim and final contract reports will be available at no cost from NCAQ for individuals and

organizations who are not located in or near depository sites.

B. *Maintain an NCAQ speakers bureau.* Commissioners and NCAQ staff will be active participants in various public meetings, conferences, workshops, panels and forums of groups interested in air quality issues insofar as travel budget constraints allow. Commission members and NCAQ staff will inform those groups of the Commission's activities and will encourage involvement of those groups in the Commission's work. NCAQ participation and speeches will be announced in the NCAQ bulletin and through proper media channels. Texts of speeches by NCAQ members and staff will be available upon request when written versions of speeches are prepared.

C. *Distribute timely information on a regular basis.* The Commission regularly will prepare information for wide distribution to keep interested parties advised of the Commission's progress. This effort includes dissemination of information in the following ways:

Type	Timing	Distribution
1. Four page NCAQ newsletter "Air Waves," containing articles on contracts awarded, upcoming speeches, announcements of Commission meetings (beginning the context of presentations, discussions, and actions taken), notices of available reports, articles by staff, etc.	Monthly	Entire mailing list.
2. Announcements of Commission meetings:		
a. FEDERAL REGISTER Notices	30-Day Advance	Readers of FEDERAL REGISTER
b. "Air Waves"	Monthly	Entire mailing list
c. Dear Colleague Letter	Occasionally	Congressional offices
3. Articles in newsletters, and other publications of outside organizations	Frequently	Outside organizations
4. National Press (print/electronic)		
Trade Press (print/electronic)		
Regional Press (print/electronic)		

D. *Ensure that technical background documents are available for public scrutiny.* A copy of each document will be placed in the regional depositories and in the NCAQ library. Copies of documents will be available within the limits of NCAQ resources. Copies of interim and final contractor reports will be available according to the NCAQ Policy on Public Review of Contractor Reports which is attached to this Public Participation Plan. Examples of documents to be provided are:

Type	Timing
1. Contractor reports	Interim reports when received. Final reports upon approval of completion of contract.
2. Existing studies	When compiled.
3. Reports of expert panels	When completed.
4. NCAQ staff studies	When completed.

E. *Distribute information which facilitates the public comment process.* The Commission will solicit and consider public comments prior to making certain key decisions. Solicitations may involve a Federal register notice, direct mail, or may be conducted informally. Comments and suggestions have been solicited on the Plan of Study, the selection of regional study areas under Parts II and III of the Plan of Study, the Public Participation Plan, policy alternatives to be considered in the regional study areas, and issues and participants for various technical panels. Comments will be solicited before final recommendations to Congress are developed and at other points yet to be identified. When public comments are being sought, the Commission will provide information concerning the action or decision at least 30 days prior to the decision. This time is needed so the public can develop informed comments and so that the Commission can carefully consider public views before taking final action. The information will include:

Type	Timing
1. The proposed document or summary of action to be taken	30-day advance.
2. Fact sheet, when appropriate, summarizing issues involved, ramifications of decision, alternatives considered, trade-offs of alternatives, areas particularly needing comment.	30-day advance.
3. Technical background documents and through information depositories whereby other NCAQ reports.	Available by request.

III. Consultation and Response

Throughout the study, NCAQ will encourage and maintain a dialogue with members of the public. NCAQ will exchange views and openly explore issues, alternatives, and consequences with individuals and groups representing a variety of interests. Consultation will take place at formal and informal meetings, workshops and hearings, through discussions with expert panels and information groups, and during the public comment periods. When appropriate, as after a public comment period, a formal NCAQ response will identify those who participated and subjects discussed; summarize the public's views, important comments, criticisms and suggestions; and detail how public contributions affected NCAQ actions and/or why public comments were not incorporated. This formal response hereafter will be called a responsiveness summary.

An attachment to the Public Participation Plan delineates in chart form the formal meetings and responses proposed by the Commission. In its effort to consult and respond effectively, the Commission will:

A. Conduct monthly Commission meetings which are open to the public unless otherwise decided by majority vote of the Commissioners. Approximately thirty (30) days prior to each meeting, a notice and proposed agenda will be published in the Federal Register. This notice will appear also in the NCAQ bulletin. In order to inform the public of events that take place at Commission meetings, NCAQ will summarize each meeting in "Air Waves." Unless otherwise provided by majority vote, a transcript will be kept of all proceedings of the full Commission, and the transcript will be available for public inspection during regular staff working hours in the NCAQ library.

B. Schedule numerous informal meetings between NCAQ staff and outside interests. These meetings will be kept informal in order to encourage open expression of views. These meetings will also allow NCAQ staff to become fully familiar with existing relevant information and technical studies in the possession of a variety of public and private interests. Examples of such meetings include:

Who	Why
1. Lunch staff/technical staff/Outside groups and individuals	To brief groups about NCAQ progress. To learn about available data/concerns/preferences.
2. Brown bag lunches for NCAQ staff with outside groups and individuals.	To brief groups about an issue; learn to suggestions, build understanding of other viewpoints.

C. Convene panels of experts for in depth discussion of specific issues relating to air quality. Through seminars, commissioned papers, and workshops the Commission will consult with experts about air quality issues where there is controversy or where no consensus exists on a particular issue. All panels will be publicized in "Air Waves" and open for public observation. The expert panels are expected to provide NCAQ with a variety of cogent opinions and, where

possible, to work together to achieve consensus. After receipt of an expert panel report, NCAQ will place a copy in each regional depository and in the NCAQ library. While additional panels may be convened, expert panels are proposed for the following issues:

1. Photochemical Oxidants (Plan of Study, Part I). A diverse group of experts will recommend a scientific approach and identify areas needing research.

2. High Altitude Carbon Monoxides (Plan of Study, Part I). Medical, technical and regulatory experts will evaluate the health effects of carbon monoxide at high altitude.

3. Effects of Legal Requirements on Relations Between Government and the Scientific Community (Plan of Study, Part I). This meeting will allow various interests to discuss effects of government requirements for open meetings on health and ecological effects research activities and development of criteria documents.

4. Modeling Techniques (Plan of Study, Part II). A diverse group of experts will review existing techniques and recommend NCAQ modeling approach.

5. Benefit Methodology (Plan of Study, Part V). Economists and epidemiologists will discuss estimation techniques and critique existing studies.

6. Cost Methodology (Plan of Study, Part V). Economists will identify relevant cost methodologies and critique existing studies and techniques.

7. Regulatory Reform Workship (Plan of Study, Part VII). NCAQ will invite a variety of interests to examine procedural requirements for industrial permitting under the Clean Air Act and to consider alternative procedures.

D. Establish Information Groups and consult with members of those groups. Information Groups will be established as follows. Under Parts II and III of the NCAQ Plan of Study, the Commission has selected five areas for intense study. These include both areas which attain ambient air quality standards for certain pollutants and areas which are not attaining standards for some pollutants. An Information Group will be established for each area to reflect government, business, environmental, labor, health, small business, financial, agricultural and civic interests. Throughout the study, individuals serving on the Information Groups will be consulted about data, opinions, growth projections and local experiences to ensure use of the best and most realistic information available. Two workshops will be held for the Information Groups and other interested or affected parties in each regional study area. The first workshop will be held shortly after the study begins to explain NCAQ objectives for the study, determine sources for existing information, and respond to questions. The second workshop will be held at the end of the study to consult with the Information Group and other interested parties concerning NCAQ findings and tentative conclusions concerning that regional study. Certain travel expenses associated with these workshops will be paid by NCAQ for those members whose participation otherwise would be difficult, and who are not eligible for reimbursement from other sources.

An Information Group will also be established for the industry selected for study under Part VI of the Plan of Study. This group will consist of representatives of industry, state and local control agencies, affected federal agencies, environmental groups, and labor organizations and will provide a forum for communication among NCAQ staff, industry representatives, and those affecting and affected by the industry.

E. Require certain contractors to consult with and respond to the public. Certain research contracts will produce more useful information and better conclusions if a public participation task is included in the contractor's scope of work. Other contracts will include tasks to gather information about public participation in current air quality control programs. These tasks will help the Commission keep the public informed about ongoing technical projects, will contribute to the data base about costs, benefits and impacts of public participation, and will further integrate the research and public affairs aspects of the Commission's work.

Appropriate contractor public participation tasks may include individual interviews with various interests, workshops, information distribution, a survey of interested parties, and a compilation of data from files. Groups and individuals to be contacted may include Information Group members, expert panel members or segments of the NCAQ mailing list.

While other studies undoubtedly will be identified, technical studies currently proposed to include a public participation task are:

1. Survey of State Implementation Plan Submittals (Plan of Study, Part I). The contractor will compile information from state agency and EPA files and other sources to ascertain the extent of public participation in the SIP process.

2. Assessment of Transportation Control Measures (Plan of Study, Part I). The contractor will interview various groups and individuals to evaluate the extent of public participation and its effect on implementing TCM's. Three sites will be selected for in-depth study.

3. Survey of PSD and Offset Permits (Plan of Study, Part I). The contractor will compile information from state agency and EPA files and other sources to identify the extent of public participation in the permitting process.

4. Ability of Federal, State, and Local Governments to Implement and Enforce Provisions of the Clean Air Act (Plan of Study, Part VII). The contractor will evaluate the role of public education and participation in the effective implementation and enforcement of the Act using a case study approach in 7 locations.

5. Public and Private Roles in Undertaking and Stimulating Innovation (Plan of Study, Part VII). The contractor will interview individuals in business, government, and public interest organizations who have been involved in attempts to stimulate innovation in several air pollution control technologies.

6. Study of Mechanisms Necessary to Address Inter-Regional Transport of Photochemical Oxidants (Plan of Study, Part VII). State, local, and federal officials will be interviewed about potential institutional mechanisms to abate oxidant transport in the Northeast Corridor.

7. Study of Air Monitoring Networks (Plan of Study, Part VII). The contractor will interview state and local pollution control officials, elected officials, citizen organizations, and business and industry officials in five locations to evaluate the effectiveness of current monitoring requirements and local implementation of those requirements.

F. Conduct formal public meetings or hearings concerning specific air quality issues and Commission recommendations. In addition to the previously discussed regional study area workshops and meetings of expert panels, the Commission intends to formally consult with the public in various locations on a variety of topics included will be:

1. Meetings to involve groups and individuals outside of Washington, D.C. As resources permit and opportunities arise, the Commission will consult with the public in many locations about general air quality issues and about NCAQ purposes, progress, and findings. these meetings may be arranged specifically to discuss the Commission's air quality work or may occur during workshops or conferences sponsored by outside organizations. The Commission plans to conduct a variety of regional

meetings near the end of the study period to discuss tentative NCAQ findings and conclusions.

2. *Public Hearing.* At the end of the NCAQ study, public hearings will be held in various locations to receive public comments on the Commission's final recommendations to Congress.

IV. Evaluation

The NCAQ staff will continually evaluate accomplishments and activities against the overall public participation objective. The Public Participation Plan is meant to be flexible, evolving to meet needs as they arise. A midpoint evaluation will help the staff make necessary changes and improvements. In order to conduct a fair and thorough evaluation, the Commission will:

A. *Set evaluation criteria.* Based on public comment, NCAQ has selected the following evaluation criteria.

1. Objectives

a. Have clear goals, objectives and evaluation criteria of the public participation program been defined? To what degree are they being met?

b. How helpful has the Plan been in obtaining a national consensus on identification of problems and solutions to air quality problems?

2. Initiation of Public Contact

a. Have all potentially affected and interested segments of the public been identified and contacted?

b. Have the media and other information techniques been effectively used, resulting in greater public understanding of the mandate and activities of NCAQ?

3. Information Dissemination

a. Has timely information (and data) been provided to affected interests to allow intelligent comment on the issues and public participation opportunities?

b. Have depositories been established and maintained?

4. Consultation and Response

a. Have the public's concerns been communicated to and understood by NCAQ and the Commissioners? Have the staff and Commissioners responded to these concerns?

b. How well has the Plan achieved good input from all public sectors?

c. How helpful has this input been in providing ideas and solutions to air quality problems under the Commission's scope?

d. Has this exchange led to a better understanding of the problem, the issues, and alternative solutions?

e. Were public and information group meetings productive? Were the expert panels effective at providing NCAQ with useful recommendations?

f. Have contractors carried out their public participation tasks adequately?

5. Resources

a. Has there been an appropriate commitment of manpower and financial resources to the public participation program?

b. Has there been sufficient travel funds allocated to carry out the tasks in the public participation program?

B. *Conduct a Mid-Point Evaluation.* NCAQ will ask individuals who collectively represent the major parties interested in air quality issues and involved in the work of the Commission to assess Commission efforts to meet the public participation objective and to suggest appropriate modifications to the public participation program. NCAQ will pay modest costs of this evaluation and the results will be included in the public file.

Attachment II

The National Commission on Air Quality Policy on Public Review of Interim Contractor Reports

The National Commission on Air Quality (NCAQ) intends to keep the public informed about and involved in its technical studies, not only in each study's initial design, but also in evaluation of information gained throughout the study period. This will entail NCAQ's announcing a schedule of anticipated contractor reports, maintaining up-to-date depositories in various geographical locations where the public can review each report, and responding to public comment concerning the reports. Contractor reports will be made available so as to allow the public maximum opportunity for review and comment. These draft reports will not carry NCAQ endorsement or approval and will be clearly labeled as drafts.

Through this process, NCAQ hopes to encourage the public to submit additional information or points of view which will assist in the NCAQ evaluation of its technical studies and provide feedback to NCAQ contractors.

Publicity

The Project Officer for each NCAQ contract will develop and keep current a schedule of anticipated contractor reports.

A column in Air Waves will list contractor reports received during the previous month. For each report, Air waves will give the title of the contract, identify the relevant part of the Plan of Study, the name of the Project Officer, the study's degree of completion, and give a brief (1–2 lines) description of the report.

Summary of Formal Meetings Proposed by NCAQ

Type	Who	When	Why	Response
1. Seminars	Expert Panels	Throughout the study	Take advantage of outside expertise, build consensus	Report on conclusions for the public files
2. Two workshops in each Region	Information Groups and interested public	One at beginning of study	To brief the public and learn local concerns	Report of workshop for the public file
		One at end of study	To seem to the public and receive comments about study	Responsiveness summary
3. Two workshops on Selected Industries	Information Groups and interested public	One at beginning	To brief the group re purposes of the study and to hear different viewpoints	Report of workshop for the public file
		One at end of study	To receive comments about each industry	Responsiveness summary
4. Public Meetings	Interested public	Throughout the study	To brief the public, receive comments, discuss issues	Report on meeting for the public file
5. Public Hearings	Interested public	3 Months prior to end of study	Formal comment on proposed recommendations to Congress	Responsiveness summary

Opportunities for Public Review

Public information depositories will be established in libraries of universities in approximately 20 geographic locations.

Depository locations will include the 10 standard Federal regional office cities, at least one major city in each of the five areas selected for study under Parts II and III of the NCAQ Plan of Study, and other major cities as appropriate.

A master public file will be maintained at the NCAQ, Washington, D.C. office.

Suggested Depository Locations

Albuquerque, NM	Dallas, TX
Atlanta, GA	Denver, CO
Boston, MA	Grand Junction, CO
Chicago, IL	Kansas City, MO
Cincinnati, OH	Los Angeles, CA
Miami, FL	Raleigh-Durham, NC
Minneapolis, MN	San Francisco, CA
New York City, NY	Seattle, WA
Philadelphia, PA	Toledo, OH
Phoenix, AZ	Washington, DC

Confidential Information

Confidential information will not be released to the public. Any confidential information appearing in a report to NCAQ must be clearly labeled as such by the contractor. This information will be be deleted by NCAQ prior to the report's release.

Copies of NCAQ Contractor Reports

Reasonably priced, coin-operated copying facilities will be available at each depository location.

NCAQ will also distribute a reasonable number of single copies of each report free of charge to individuals or organizations who live outside depository locations and who submit written requests.

Responses to Public Comments

NCAQ will acknowledge receipt of all public comments, will forward copies of comments to the relevant contractor, and will consider public views and additional information in evaluating the results of technical studies.

[FR Doc. 79-39622 Filed 12-31-79; 8:45 am]

BILLING CODE 6820-33-M

APPENDIX III
JANUARY 14, 1980 NATIONAL COMMISSION ON AIR QUALITY CONTRACTS STATUS REPORT Contact Dennis McCraney, 202-245-6231

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
1-7133 A Study of PSD and Offset Permits DAMES & MOORE, INCORPORATED - This study is related to the Commission's overall studies of Implementation and Enforcement of the Act, permitting under the Act, and studies of PSD and nonattainment. Will provide some information for upcoming Study of Research, Development and Demonstration and Industry study. In addition, will provide information regarding control technology, emission limitations and costs for new sources for Regional Studies.	7-20-79	8-1-79	8-22-79	9-17-79	9-17-80	$145,704.00	Contractor is approximately 30 days behind schedule for selection of 160 permits for in-depth review. Contractor has started gathering data to establish the amount of time it takes permits to be issued at the state level and expects to complete contract on schedule.
2-7243 A Study of Automotive Emission Control Technology FALCON RESEARCH & DEVELOPMENT COMPANY - This study is related to study of the relationship of Automobile Emission Standards and NAAQS; Phase II of Regional Studies (to determine impact of different emission levels on attainment of ozone standard); alternative automobile technology study; study of Inspection/Maintenance.	7-20-79	8-3-79	8-24-79	9-26-79	6-27-80	219,000.00	On Schedule - Report for Phase I submitted Nov. 26, 79. Proposed methodology submitted Dec. 28 and is under staff review.
3-7353 A Study of 1979 State Implementation Plan Submittals PACIFIC ENVIRONMENTAL SERVICES, INC. - This study is related to study of Implementation and Enforcement of the Act; study of monitoring; upcoming study of emission inventories. Phase I assisted in the staff's recommendation of regions for Regional Studies. Also will be used in the overall assessment of the implementation of the Act and the study of nonattainment	8-5-79	8-7-79	8-28-79	9-17-79	6-16-80	150,000.00	On Schedule - Phase I complete. Contractor has submitted list of regions for Phase II for NCAQ staff review and has begun to collect data. Next Deliverable due in mid-March.

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
4-7366 Conduct a Photochemical Oxidant Panel NORMAN D. SHUTLER - This study is related to the Regional Studies and the upcoming studies of ozone transport emission inventories and the Industry study.	8-5-79	8-9-79	8-30-79	9-28-79	4-11-80	29,000.00	On Schedule - Panelists selected - Panel due to be held January 21-25, 1980. Due to Contractor's illness, contract to be modified to handle administration of Panel.
5-7379 Atmospheric Dispersion Modeling Panel DAMES & MOORE, INCORPORATED - This study is related to the Regional Studies and the upcoming Industry study and the study of emission inventories; also related to the Commission's overall study of permitting under the Act.	8-5-79	8-9-79	8-30-79	9-17-79	1-31-80	41,528.00	Panel met Nov. 13-16. Draft recommendations submitted to panelists for review Dec. 3, 1979. Draft report will be mailed to panelists during the week of January 21, 1980. Contractor approximately 30 days behind schedule. Contractor is requesting $2,200.00 increase in the contract price. He has been instructed to provide detailed cost statements and justifications.
-6- divided into 3 contracts: A Study of the South Coast Air Basin/ Southeast Desert/Kern County Region of California (Los Angeles Region)							
6-7382 ACUREX CORPORATION	8-5-79	8-10-79	8-31-79	9-28-79	8-1-80	174,180.00	Workplan being revised by Contractor
6-8349 SYSTEMS APPLICATIONS, INC.	8-5-79	8-10-79	8-31-79	9-28-79	8-1-80	167,894.00	Workplan approved Jan. 11, 1980
6-8352 ENERGY & ENVIRONMENTAL ANALYSIS, INC. - These studies are related to the Commission's overall review of PSD and nonattainment policy, overall implementation and enforcement, and study of alternatives related to other Regional Studies.	8-5-79	8-10-79	8-31-79	9-28-79	8-1-80	153,923.00	Workplan approved Jan. 11, 1980 Report of SIP development and status due February 1, 1980.

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
7-7395 Preparing and Arranging a Regulatory Reform Workshop ROMCOE - This study is related to the Commission's overall review of Permitting under the Act and study of alternatives.	8-5-79	8-10-79	8-31-79	11-1-79	2-29-80	29,785.00	On Schedule - Participants have been selected. Workshop to be held on Feb. 13-15, 1980 at Harvest Hilton Hotel, Boulder, Colorado.
8-7405 A Study of the Adequacy of Air Monitoring Data SRI INTERNATIONAL, INC. - This is the primary study for monitoring; will have information supplied from SIP Study (3-7353).	8-5-79	8-10-79	8-31-79	9-28-79	6-1-80	65,000.00	On Schedule - Received Phase I and II draft reports; selected 5 case study areas.
9-7418 Compilation of a List of Scientific Terms and Concepts used in the Establishment of National Ambient Air Quality Standards and the Manner in which they have been used in Regulatory Documents and Proceedings. PATRICIA A. PORTER - This study is related to the upcoming study of the NAAQS setting procedure; and the impact of various levels of NAAQS and NAAQS violation criteria to health and ecological impacts.	8-5-79	8-10-79	8-31-79	9-20-79	12-13-79	8,323.00	(Contract modified Nov. 5, 1979 to add two documents to those to be reviewed; cost increased by $615.00) COMPLETED - Report submitted January 2, 1980.

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
10-7421 Assess the Public and Private Roles in Air Pollution Control Technology Research, Development, Demonstration and Training SOLICITATION CANCELLED - This is the primary study for R D & D policy under the Act. Will have information supplied by Permit Study (1-7133). This study is related to the Commission's overall study of PSD and nonattainment policies and study of alternatives.	8-5-79	8-10-79	8-31-79	SOLICITATION CANCELLED			See Contract number 15-7421
11-7695 Study of the Ohio River Valley Region - This study is related to upcoming study of transport of sulphate and nitrate and overall transport policy. It is also related to the Commission's overall review of PSD and non-attainment policy, overall implementation and enforcement, and study of alternatives related to other regional studies.	11-13-79	12-11-79	1-21-80				
12-7705 Study of the Minneapolis/St. Paul, Minnesota Region - This study is related to the Commission's overall review of PSD and nonattainment policy, overall implementation and enforcement, and study of alternatives realted to other regional studies.	11-13-79	12-11-79	1-21-80				

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
13-7718 Study of the New York City/Hartford, Connecticut Region - This study is related to upcoming study of transport of ozone in Northeast and overall transport study. It is also related to the Commission's overall review of PSD and non-attainment policy, overall implementation and enforcement, and study of alternatives related to other regional studies.	11-13-79	12-11-79	1-21-80				
14-7721 Study of the Four Corners Region - This study is related to the Commission's overall review of PSD and nonattainment policy, overall implementation and enforcement, and study of alternatives related to other regional studies.	11-13-79	12-11-79	1-21-80				
15-7421 Assess the Public and Private Roles in Air Pollution Control Technology Research, Development, Demonstration and Training - This is the primary study for R D & D policy under the Act. Will have information supplied by Permit Study (1-7133). This study is related to the Commission's overall study of PSD and nonattainment policies and study of alternatives.	11-13-79	1-9-80	2-8-80				

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
16-7912 Study of Transportation Control Programs - This study is related to Commission's overall study of nonattainment; will be used in conjunction with certain of the regional studies for comparison of impacts of TCM's.	10-29-79	12-21-79	1-30-80				Proposals due January 30, 1980.
17-8924 Contract for Review and Evaluation Services Required by NCAQ DR. ROBERT F. SAWYER - This contract is to assist the Research staff in reviewing and evaluating data and requirements to be used by the Commission.	1-3-80			1-16-80	6-28-80	30,000.00	
18-9127 A Study of the Role of Transport in Fine and Total Suspended Particulate Air Quality - This study will provide information for use in the Commission's considerations of the need for and methods of controlling long-range transport of particulates.	12-6-79	1-21-80	2-18-80				
19-9130 A Study of the Implementation and Enforcement of the Clean Air Act - This study, together with results from the five regional studies, will provide information on the effectiveness of and problems with the specific mechanisms provided in current law to achieve air quality goals.	12-6-79	1-23-80	2-29-80				

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
20-9143 A Study of the Relationship of Motor Vehicle CO and NO_x Standards to NAAQS - This study will use data from the Automotive Control Technology Study and will provide information which will be combined with regional study results to identify cost-effective control levels for stationary and mobile emissions.	12-6-79						
21-9156 A Study of the Planning and Conduct of Health and Ecological Effects Research at EPA	12-6-79						
Cost Methodology Evaluation Panel - This Panel is related to regional studies; overall study of costs and benefits under the Act, as well as upcoming industry studies.	7-20-79				2-29-80	40,400.00	Letter Contracts on Schedule. Meeting held with all persons who are preparing papers. Panel to meet on Feb. 11-12, 80 at the Cosmos Club, Washington, D.C.
Benefits Methodology Evaluation Panel - This Panel is related to regional studies; overall study of costs and benefits under the Act, as well as upcoming detailed benefit studies	7-20-79				2-1-80	41,300.00	Letter Contracts on Schedule. Panel held Dec. 10-11, 1979 in Washington, D.C.

Contract, Contractor, Relationship to Other Studies	Date Study Approved	Date RFP Issued	Date RFP Due	Award Date	Expiration Date	Cost	Status
Workshop on Carbon Monoxide Pollution at High Altitudes - Results from the Workshop will supplement information from Commission study of the relation of auto emissions standards to ambient standards.	10-29-79						
						$3,496,057.00	Total Committed* Funds to Date (FY 1979, FY 1980)
							STATUS OF FY 1980 FUNDS
						3,416,000	Total FY 80 Contract Funds
						2,286,485	Total Committed* Funds for FY 1980
						1,129,515	Amount of FY 1980 Funds Remaining
							* "Committed" means amounts actually obligated or amounts estimated for studies which have been approved but for which contracts have not been awarded.

Appendix IV

THE NATIONAL COMMISSION ON AIR QUALITY

Commission Membership

Richard Ayres, Esq.

Mr. Ayres is a staff attorney for the Natural Resources Defense Council. He is the Chairman of the National Clean Air Coalition and the Vice Chairman of the American Bar Association's Committee on Air Quality. With the Natural Resources Defense Council, Mr. Ayres has handled a number of cases to ensure compliance with the Clean Air Act.

Honorable Thomas Bradley

Past President of the National League of Cities and Mayor of Los Angeles, California, since 1973, Tom Bradley is dedicated to the effective implementation of the Clean Air Act. He has pioneered many pollution control programs aimed at improving the air quality in his city. Before his election as Mayor, Mr. Bradley served on the Los Angeles Police Force for 20 years. After retiring from the force at the rank of lieutenant, he was admitted to the California Bar and served on the City Council for 10 years before becoming Mayor.

Dr. AnneMarie Crocetti

Dr. Crocetti, Doctor of Public Health, has done and continues to do epidemiological and other research related to environmental pollution, environmental health and cancer. Dr. Crocetti has served on the staff of Johns Hopkins Hospital, has taught at a number of colleges and medical schools and has served as a consultant to the Environmental Protection Agency in connection with the development of various criteria documents for pollutants.

Honorable Edwin D. Dodd

Mr. Dodd is the Chairman and Chief Executive Officer of Owens-Illinois, Inc. As a member of the Business Roundtable, the American Society of Corporate Executives and the National Industrial Energy Council, he is active in efforts to organize and represent business interests. Mr. Dodd also serves as a director of the Chamber of the United States, the Goodyear Tire and Rubber Company, the National Petrochemical Corporation and the Ohio Bell Telephone Company. He is Chairman of the National Center for Resources Recovery.

Commission Members (cont.)

Senator Gary Hart

Senator Gary Hart (D.-Colorado) is the Commission Chairman. Elected to the Senate in 1974, Hart is a member of the Senate Committee on Enviornment and Public Works, on which he took an active role in the formulation of the 1977 Amendments to the Clean Air Act. He resigned his position as Co-Chairman of the Congressional Environmental Study Conference in order to devote more time to the work of the National Commission on Air Quality.

Honorable Tom McPherson

Mr. McPherson is the Commission Vice Chairman. Farmer and businessman by profession, Mr. McPherson serves as a Representative in the Florida State Legislature and as Chairman of the Florida House Committees on Standards and Conduct and Community Affairs. He is active in the National Conference of State Legislatures and is a former Mayor of Cooper City, Florida.

Honorable Jeanne Malchon

Mrs. Malchon is the County Commissioner for the Clearwater, Florida, area. A founder and President of the Florida Council for Clean Air and a member of the Florida Health Planning Council, she has been active in local and state affairs for the past 20 years. On the national level, Mrs. Malchon has served as President of the Florida League of Women Voters and is currently a member of the Board of Directors of the American Lung Association, the Democratic National Committee and the Environmental Protection Agency Advisory Task Force on Public Participation.

Leonard A. Schine, Esq.

Mr. Schine is a Westport,Conn., attorney who has represented both industry and conservation groups. A senior partner in the law firm of Schine, Julianelle, Karp and Bozelko, Mr. Schine is a trustee of Sacred Heart University in Bridgeport, Conn., and a trustee of the National Science for Youth Foundation. He is active in civic and educational organizations in Connecticut.

Commission Members (cont.)

Honorable Robert T. Stafford

Senator Robert T. Stafford (R.-Vermont) is currently serving his second term in the United States Congress. At the time the 1977 Amendments to the Clean Air Act were being developed, Senator Stafford was the ranking Republican on the Environmental Pollution Subcommittee of the Senate Committee on Environment and Public Works. Before his election to the Senate in 1970, he served as Governor of and then as Congressman from Vermont.

Honorable Dave Stockman

Congressman Stockman (R.-Michigan) is currently serving his second term in the United States Congress. As a member of the House Interstate and Foreign Commerce Committee in 1977, he participated in writing the 1977 Amendments to the Clean Air Act. Before his election to Congress in 1976, he served for five years as Staff Director for the House Republican Conference.

Honorable Harold W. Tso

Mr. Tso is the Director of the Environmental Protection Commission for the Navajo Tribe and also serves as a Navajo Tribal Official. He is a member of the American Chemistry Society and the Rio Grande Health Physics Society. Mr. Tso has a wide range of experience in radiochemistry, having been employed by the New Mexico Department of Health and having served as a project chemist for the San Juan Radium Research Project.

NATIONAL COMMISSION ON AIR QUALITY

Staff Members

William H. Lewis, Jr.

Before his selection as Commission Director, Mr. Lewis served as Executive Officer of the California Air Resources Board. Mr. Lewis is an attorney who prior to joining the California state government was associated with the Los Angeles firm of Latham and Watkins where he specialized in corporate and securities law.

Katherine Y. Cudlipp

Prior to becoming General Council for the Commission, Ms. Cudlipp worked for seven years on the Senate Committee for Environment and Public Works. She was one of five Committee staff members who worked extensively on developing the Clean Air Act Amendments of 1977, and during her last two years she served as the counsel to the Committee.

Richard A. Penna

Mr. Penna is the Commission's Assistant Director for Research. Before joining the Commission staff, he was a senior associate of the Washington, D.C. law firm of Hudson and Leftwich, where he specialized in environmental law and civil litigation. Mr. Penna also served for seven years in the Office of Enforcement for the Environmental Protection Agency.

Morris A. Ward

Mr. Ward, the Assistant Director for Public Affairs and Administration, was the Managing Editor of the Environment Reporter for five years before joining Commission staff. A professional jouranlist, Mr. Ward has held a number of managerial and editorial positions.

THE NATIONAL COMMISSION ON AIR QUALITY

Object Classification (in thousands of dollars)
Table I

Identification code 48-1800-0-1-304		1978 Actual	1979 Actual	1980 Estimate	1981 Estimate
Personal Compensation:					
11.1	Permanent positions	--	430	1,300	1,100
11.3	Positions other than permanent	--	32	120	100
	Total personnel compensation	--	462	1,420	1,200
12.1	Personnel benefits: Civilian	--	37	130	110
21.0	Travel and transportation of persons	--	37	140	185
22.0	Transportation of things	--	1	--	--
23.1	Standard level user charges	--	41	100	85
23.2	Communications, utilities, and other rent	--	41	100	100
24.0	Printing and reproduction	--	8	92	200
25.0	Other services		1,308	3,478	595
26.0	Supplies and materials	--	15	25	25
31.0	Equipment	--	9	10	--
99.0	Total Obligations		1,960	5,500	2,500

THE NATIONAL COMMISSION ON AIR QUALITY

Program and Financing (in thousands of Dollars)
Table II

Identification code 48-1800-0-1-304		1978 Actual	1979 Actual	1980 Estimate	1981 Estimate
	Program by Activities:				
	Air Pollution studies (program cost funded) 1	--	994	5,500	3,400
	Change in selected	--	960	--	- 900
10.00	Total Obligations	--	1,960	5,500	2,500
	Financing:				
25.00	Unobligated balance lapsing	500	40	--	--
40.00	Budget Authority (Appropriation)	500	2,000	5,500	2,500
	Relation of obligations to outlays:				
71.00	Obligations incurred, net	--	1,960	5,500	2,500
72.40	Obligated balance, start of year	--	--	1,478	1,478
74.40	Obligated balance, end of year	--	-1,478	-1,478	-478
90.00	Outlays	--	482	5,500	3,500

1 Includes capital investment as follows: 1979, $30 thousand; 1980, $5 thousand

Object Class Summary Justification
Table III

	Idenfitication code 48-1800-0-1-304	1981 estimate
11.1	Regular salaries and wages assuming an average employment throughout the year--the last year the Commission will be in existence--of 35 persons, compared to the ceiling of 45 persons expected at the beginning of fiscal year 1981.	1,100,000
11.3	Compensation of nine public NCAQ members, part-time temporary help, specifically for expert help hired for specific short-term assignments.	100,000
12.1	Personal Benefits: NCAQ share of costs of employee's civil benefits, life insurance and Compensation Fund; NCAQ contribution to the costs of the Federal Insurance Contribution Act taxes, including Medicare.	110,000
	Travel:	
21.0	Travel of NCAQ Commissioners to and from Washington, D.C. for 10 regular scheduled Commission meetings; for an estimated 16 meetings of the Commission's Research Committee; travel to hearings and workshops outside Washington, D.C.; including regional workshops after publication of NCAQ draft final report. Commission staff travel to various study sites and to contractor's study facilities and study sites to support Commission research efforts.	185,000
23.1	Standard level user charges: NCAQ payment to General Services Administration for rental of office space.	85,000

Object Class Summary Justifications (cont.)

Idenfitication code 48-1800-0-1-304		1981 estimate
23.2	Communications, utilities and other rent: Charges for telephone including installiation of equipment and pro-rata share of payments to the Federal Telecomminications Fund; postage and postage fees; payments to GSA for rental of furniture and equipment, and other equipment rental.	100,000
24.0	Printing and Reproduction: Costs of production of the NCAQ draft and final reports and recommendations to Congress, including preparation of copy, graphic work, printing and binding. In addition, costs of printing public participation materials to assure meaningful public involvement in Commission activities, notifications published in Federal Register, printed materials for support of workshops and conferences associated with reviews of the Commission's final report and recommendations, and routine printing of Commission stationery, envelopes, and mailing labels.	200,000
25.0	Other services: Contractual Services for research studies. Plus the cost of the NCAQ and GSA Administrative Services Agreement.	595,000
26.0	Supplies and materials: Charges for commonly used office and stationery items such as envelopes, pens, and pencils, notebooks, legal pads, typewriter accessories, standardized and GSA forms, ring binders, file cards, folders, staplers and similar supplies, and in addition, newspapers, periodicals, and technical journals.	25,000
	TOTAL:	2,500,000

60-531 O - 80 - 75

Table IV

Detail of Permanent Positions

Identification code 48-1800-0-1-304	1978 actual	1979 actual	1980 estimate	1981 estimate
GS 18	--	1	1	1
GS 17	--	2	2	2
GS 15	--	4	4	4
GS 14	--	6	6	6
GS 13	--	6	6	6
GS 12	--	8	8	8
GS 11	--	6	10	11
GS 10	--	2	--	--
GS 9	--	2	2	1
GS 8	--	2	--	--
GS 7	--	3	4	4
GS 6	--	1	--	--
GS 5	--	1	1	1
GS 4	--	--	1	1
GS 3	--	1	--	--
Total permanent positions	--	45	45	45
Unfilled positions, end of year	--	10	--	--
Total permanent employment, end of year	--	35	45	0

Table V

Personnel Summary

Identification Code 48-1800-0-1-304	1978 actual	1979 actual	1980 estimate	1981 estimate
Total number of permanent positions	--	45	45	45
Full time equivalent of other positions	--	(1)	(3)	(2)
Total compensable work years	--	17	46	39
Average GS grade	--	11.67	11.89	11.22
Average GS salary	--	$27,268	$29,129	$29,278

Table VI

NATIONAL COMMISSION ON AIR QUALITY

SALARIES AND EXPENSES

SUPPLEMENTARY SOURCE DOCUMENT (In thousands of dollars)

Identification code 48-1800-0-1-304	Function	Line No.	Def. (D) Indef. (I)	Leg. (L) Nonleg. (N)	1979 actual	1980 estimate	1981 estimate
A. ANALYSIS OF BUDGET AUTHORITY AND OUTLAYS							
Budget authority	304	40.00	D	N	2,000	5,500	---
	304	40.00	D	S	---	---	2,500
Total					2,000	5,500	2,500
Outlays	304	90.00		N	482	5,500	1,478
	304	90.00		S	---	---	2,022
Total					482	5,500	3,500
Memorandum entries:							
Appropriation to liquidate contract authority							
Limitations:		9					
		9					
		9					
		9					

307-104

STANDARD FORM 307
June 1974 (Revised), Office of Management and Budget Circular No. A-11 Revised

NATIONAL COMMISSION ON AIR QUALITY

Identification code 48-1800-0-1-304		1979 actual	1980 estimate	1981 estimate
B. DISTRIBUTION OF OUTLAYS				
	Line code			
From new authority–current	311	482	4,100	2,022
From new authority–permanent	312			
From obligated balances	313	---	1,400	1,478
From unobligated balances	314			
From new appropriations to liquidate contract authority (memo entry)	315	( )	( )	( )
C. CHARACTER CLASSIFICATION				
Budget authority	304 1 1600-04	2,000	5,500	2,500
Total		2,000	5,500	2,500
Outlays	304 2 1600-04	482	5,500	3,500
Total		482	5,500	3,500

Table VIII

Appropriations, Obligations and Outlays

FY 1977 - FY 1982

FY	Appropriations	Obligations	Outlays
1977	$ --	$ --	$ --
1978	500,000[1]	--	--
1979	2,000,000	1,960,000	482,000
1980	5,500,000	5,500,000	5,500,000
1981	2,500,000	2,500,000	3,500,000
1982	--	--	478,000
TOTAL	$10,500,000	$9,960,000	$9,960,000

[1] Lapsed

Table VI

Authorization and Appropriations

FY 1978 - FY 1981

Authorization:	$10,000,000
Appropriations:	
FY 1978 actual	500,000[1]
FY 1979 actual	2,000,000
FY 1980 actual	5,500,000
FY 1981 requested	2,500,000
TOTAL	$10,500,000

[1] Lapsed

WITNESSES

	Page
Beck, E. C	1
Blum, Barbara	1
Chamberlin, J. C	1
Costle, D. M	1
Cudlipp, K. Y	1123
Delaney, T. J	1007
Drayton, William Jr	1
Elston, P. J	1
Gage, S. J	1
Hanley, E. J	1
Harris, R. H	1
Hart, Gary Senator	1123
Hawkins, D. G	1007
Jellinek, S. D	1
Lewis, W. H. Jr	1123
Longest, H. L	1
McPherson, Tom Hon	1123
Miller, J. G	1
Penna, R. A	1123
Reid, I. S	1
Speth, Gus	1007
Strohbehn, E. L	1007
Ward, M. A	1123
Yarn, J. H	1007
Yost, N. C	1007

INDEX

	Page
Council of Environmental Quality	1007
Acid Rain Committee members	1053
Acid rain problem	1033
Committees chaired by CEQ	1055
Comparison of goals with CEQ	1054
Council's request for fiscal year 1981 funds	1059
Decentralized system	1052
Justification of the budget estimates	1067
NEPA regulations	1056
Nonfuel minerals	1063
Nuclear power plants	1036
Oil backout plan	1053
Other agencies' contributions to CEQ's annual report	1057
Personnel compensation increase	1060
Quality of the environment	1033
Scientific study	1051
Solar energy report	1034
Sources of energy	1038
Statement of Mr. Speth	1008, 1012
Toxic substances and strategy	1065
Use of agricultural products for fuel purposes, impact of	1064
Environmental Protection Agency	1
Acid rain	32, 76
Administrative hearing procedures	283
ADP technical support	349
Advanced wastewater treatment plant-Ely, Minn	123
Agency hiring profile	96
Agency travel costs	346
Air and waste quality programs	9
Air pollution control training	94
Air research committee	54
Alcohol-based fuels	47
Ambient air quality standards	31
Ammonia as a pollutant	142
Anti-tampering program	44
Anticipatory research program	318
Aquatic week research	120
Areawide waste treatment management resources—Section 208	130, 134
Asbestos	147
Automobile industry standards	19
AWT programs	276
AWT review process	266
Bubble concept	16
Certification and testing	63

Environmental Protection Agency—Continued Page

Chemical substances information network ... 328
Chesapeake Bay program ... 115
Coal gasification ... 340
Coal washing ... 36
Coal-fired plants ... 34
Composite correction program—CCP ... 121
Consolidation permit program ... 144
Construction grant study (1990) ... 250
Construction grants ... 8, 28
Construction grants program ... 245
Contract planning system ... 370
Coordination of committee and budget office ... 4
Cost and acquisition of additional space ... 343
Cost of clean air on economy ... 90
Denver water review project ... 119
Diesel research ... 57
Disposal of chemicals ... 281
Dow case in Midland, Mich., status of ... 102
Drinking water grants, allocations of ... 168
Drinking water program ... 10
Drinking water standards ... 152
Each Community Helps Others (ECHO) program ... 309
Economic studies ... 86
Emission standards ... 75
Energy mobilization board ... 21
Energy programs ... 331
Environmental Criteria and Assessment Office ... 318
EPA comments on GAO report ... 252
EXEX plan ... 68
Federal Insecticide, Fungicide and Rodenticide Act ... 240
Fiscal year 1979 planned versus actual resources ... 323
Flue-gas sulfur oxide control program ... 338
Fuel economy program ... 84
Fuel economy testing ... 48
Fuel switching ... 87
Fuels and fuel additives ... 70
Funding for intervenors in EPA proceedings ... 345
Funding quiet communities ... 313
GAO study of central treatment facilities ... 250
GAO study on EPA computer operations ... 353
Grant recipients in 1979 through 1981 ... 309
Grants assistance programs ... 129, 135
Granular activated carbon standards ... 159
Gray iron foundry hazardous wastes list ... 40
Hazardous wastes:
  Budget ... 7
  Control ... 181
  Criteria for determining ... 195
  Guidelines extraction procedure ... 191
  Regulations ... 5
  Site risk assessment coordination ... 189
  Uncontrolled sites ... 211
Hazardous/solid waste regulatory program ... 176
Health and ecological effects program increases ... 323

Environmental Protection Agency—Continued	Page
Health and ecological effects, changes in	111
Houston air quality study	66
Human volunteers	65
Industrial cost recovery system—ICR	132
Inspection and maintenance programs	90
Integrated environmental assistance	317
Integrated pest management	242
Interagency energy R&D program	333
Justification for 1980 supplemental	186
Justification of the budget estimates	372
Lead regulations for gasoline	72
Lead-bearing wastewater treatment	190
Listen program	314
Local involvement in areawide planning	106
Local resource recovery financial assistance	206
Management and support programs	10
Maximum contaminate level standards	160, 162
MMT ban waiver	71
Mobile source standards and guidelines	78
Motivation research	89
National municipal enforcement strategy	50
National primary drinking water regulations	157
National urban runoff project	127
New York projects	247
Noise program	10, 301
Northeast regional oxidant study	67
Ocean outfall program	116
Office of Inspector General	345, 348
Oil and hazardous substances liability fund (superfund)	18, 330
Operation and maintenance problems	278
Particulate standards	60
PCB reprogramming	201
Personnel projections	322
Pesticides exposure assessment initiative	241
Pesticides program	10, 239
Pittston law suit	30
Potable water	164
Premanufacturer modification costs	325
Proposed research centers	320
Public participation in toxic substances program	326
Questions and answers submitted for the record	284, 354
Radiation program	10, 293
RCRA regulation development	182
Regulations of chemical substances under TSCA	327
Relationship to FAA's aviation noise abatement activities	314
Reprogramming of energy resources	337
Reprogramming proposal	23
Reprogrammings	6
Research and development	9
Resource conservation and recovery act	198
Rulemaking process-utility steam generating units	99

Environmental Protection Agency—Continued Page
Schedule for A-109 process ... 350
Section 175 air grants ... 81
Solar energy research ... 337
Solid waste program ... 238
Source categories ... 74
State and local grants ... 11
State implementation plans ... 77, 91
State inspection and maintenance ... 79
State program regulations and guidelines ... 126
State program resource assistance-drinking water ... 165
States assuming delegation ... 270
Stationary source planning and standards ... 73
Steel industry standards ... 18
Suits against local governments ... 49
Summary of EPA request ... 11
Support of subtitle C regulations ... 179
Technical assistance to small companies ... 51
Technology for small water systems ... 154
Tolerances program ... 244
Toxic substances program ... 10
Underground Injection Control (UIC) program ... 146, 170
Vehicle inspection programs ... 45
Waste management regulations ... 189, 200
Waste management strategies implementation ... 207
Water quality enforcement ... 145
Water quality planning and standards ... 125
Water quality program levels ... 104
Workyear funding ... 24
Workyears, fiscal year 1980 ... 322
Zero base budgeting ... 25

National Commission on Air Quality ... 1123
Budget reduction impact, fiscal year 1980 ... 1138
Catalytic converter study ... 1132
Commission meetings ... 1140
Cost and benefit analyses ... 1129
Funding history ... 1123
Justification of the budget estimates ... 1143
Long-range pollutant transport ... 1130
Motor vehicle emissions, analyses of ... 1128
Office space rental, personnel ... 1139
Public participation effort ... 1134
Regional studies ... 1127
Travel budget, fiscal year 1979 ... 1138
Travel reimbursement ... 1136

○