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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1982

CUMENTS

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KANSAS STATE UNIVERSITY



HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-SEVENTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

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Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE

77-383 O WASHINGTON : 1981

AUTHENTICATED
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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1982

WEDNESDAY, FEBRUARY 25, 1981.

NATIONAL VISITOR CENTER

WITNESSES

RICHARD R. HITE, DEPUTY ASSISTANT SECRETARY, POLICY, BUDGET AND ADMINISTRATION
RUSSELL DICKENSON, DIRECTOR, NATIONAL PARK SERVICE
MANUS (JACK) FISH, DIRECTOR, NATIONAL CAPITAL REGION

Mr. YATES. The hearing will be in order.

This is a hearing on the National Visitor Center to find out just what the state of it is, at least to find out what the state of the roof is and find out where we go from here.

I must say that the committee was very surprised to learn the condition of the roof as it is depicted, that a rain storm had caused parts of the plaster from the ceiling to fall.

Perhaps it would serve a useful purpose before we get into the actual questioning to review the chronology of the Union Station because it is really a very ridiculous situation.

Mr. HITE. Yes, sir.

Mr. YATES. I have had staff prepare a chronology. It seems that the Union Station was built in 1907 at a cost of $3 million to the Federal Government and $18 million to the railroads.

During the war from 1941 to 1945 it enjoyed its busiest days, it had crowds of 140,000 to 175,000 daily.

In 1957 the Union Station celebrated its 50th birthday anniversary and at that time it was still serving 50,000 passengers a day although the nationwide train use was decreasing.

Then the efforts began to convert it. The Smithsonian began a study to convert the station into a transportation museum in 1963, and in 1964 it was declared a national landmark.

Then in 1968 the road to catastrophe began with the passage by Congress of the National Visitor Center Act.

Then in 1972 then President Nixon told the Congress that the Visitor Center was indispensable and he wanted it completed by the Bicentennial.

In 1976 the Department of the Interior spent $9.1 billion on rehabilitation of the Visitor Center of which only $69,850 was spent for repairing the roof.

In May of 1974 construction began on "the pit" for the Visitor Center. This is another name for the proposed slide show area, the acronym for which is PAVE, Primary Audio Visual Experience. In the process the Union Station's floor was torn up and then in the

fall of 1974, under the sponsorship again of Congressman Gray, the House passed legislation authorizing an additional $12.9 million to "complete" the pit and the Visitor Center.

In January 1975 this committee held up the money, the $12.9 million, for the pit and for the Visitor Center.

On July 4, 1976, the pit opened and the slide projectors did not work.

Then in 1977 the passenger use of the Union Station began to increase again and it doubled since 1967.

Then in October 1978 this committee reduced by $2 million funds for operation of the Visitor Center and in October of that year the pit closed.

Under the sponsorship of this committee in 1977 and 1978 we brought the Department of the Interior and the Department of Transportation together in an effort to try to work out some agreement under which the station could be used as a transportation center and a Visitor Center. After a great deal of argument between the two Departments, an agreement was reached. However, the Public Works Committee of the House refused to report legislation which would have carried out the agreement reached under which the Union Station would have been turned over to the Department of Transportation.

Then in December 1979 the Union Station bill which came out of the Public Works Committee was brought to the floor, which retained the Visitor Center primary and the House refused to pass it. As a matter of fact, it lost by a vote of 2 to 1.

In December 1980 the Congress passed a bill authorizing $11 million for Union Station repairs of which $6.5 million would have been made available in a continuing resolution but the continuing resolution enacted did not include those funds.

Now that in a nutshell is the history of the Union Station.

We now have the Park Service before us and we have a number of questions we would like to ask them.

Specifically on September 5, 1979, you asked the committee for $2.4 million to complete—and I underline the words to complete—necessary repair work at the National Visitor Center. As part of that justification you told the committee that the addition of these funds to the construction account along with available funds, would allow the National Park Service to complete needed roof repairs at the National Visitor Center and you outlined the amount of work that had to be done in your justification listed as roof repairs. The committee approved that money, Congress approved the money and I must say that I for one had the impression that the roof was going to be repaired with the money.

Now what happened after that time? Why wasn't the roof repaired with the money? Who wants to talk?

ROOF REPAIR

Mr. HITE. Mr. Chairman.

Mr. YATES. Would you identify your trio for the record, Mr. Hite.

Mr. HITE. Yes, sir.

My name is Richard Hite, Mr. Chairman. I am Deputy Assistant Secretary for Policy, Budget and Administration with the Department.

On my immediate left is Mr. Russell Dickenson, the Director of the National Park Service, and on his left is Manus (Jack) Fish who is the Director of the National Capital Region of the National Park Service.

Mr. Chairman, I think we should answer your specific question. If I may, I would like to delve into some of the rationale very briefly.

Mr. YATES. You may proceed, Mr. Hite.

Mr. HITE. May I do that now?

Mr. YATES. Yes.

Mr. HITE. Mr. Chairman, your chronology is eminently correct. I just would like to amplify for the record that when the Visitor Center Act was passed in 1968 a board was formed of which the Secretary of the Interior was Chairman. The agreement at that time was for the Chessie System to pay $16 million to refurbish the Union Station and to transform it into a Visitor Center.

Mr. DICKS. This is in 1968?

Mr. HITE. Yes, sir. At that point, sir, I believe then Secretary Stewart Udall was on record as saying that that funding was insufficient. However, it was a non-Federal contract that was let in 1969 approximately between the Chessie System and the George Hyman Construction Company as contractor agent

Mr. MURTHA. How much money was insufficient?

Mr. HITE. $16 million sir. It was to be $11 million for the parking facility and $5 million to refurbish the Center.

My point, sir, is that arrangements that were made at that time would not have been made in the fashion they were under Federal procurement regulations. The infusion of Federal funds did not commence until 1973 when the private funding after 5 years, was totally insufficient to complete the facility. At that time $8.7 million was authorized and appropriated by the Congress to the Department of the Interior to assist in the completion of the project.

Mr. DICKS. Is that plus the $16 million?

Mr. HITE. Yes, sir.

Later, as you pointed out, Mr. Chairman, some $12.3 million was appropriated as an additional increment. Mr. Fish has the exact figures but I just gave you gentlemen a general progression of what happened.

One of the problems, Mr. Chairman, because this was not a Federal contract, was that we were placed in the position of trying to administer a project to which we were not a contractual signatory. We had a contractor who performed eminently well, no problem, and we audited the Hyman work countless times. I have no problem with that but we had a problem with the contractor with a cost-plus fixed-fee contract. The railroad people, the Chessie System, had put their $16 million in it and there was a total lack of incentive to complete the project. The only incentive lay on the part of the non-signatories, the Congress and the Department of the Interior and, as later developed, the Department of Transportation. This created a totally untenable situation in my view.

Mr. YATES. Did you have any opportunity to object to the contract that was entered into?

Mr. HITE. Not really, sir. It was in progress and the infusion of Federal funds was done within the parameters of the basic contract.

Mr. YATES. Then you requested funds to perform roof repairs. All during that period you had a building that was incomplete but they never did complete the parking facilities.

Mr. HITE. No, sir.

Mr. YATES. That still is not complete?

Mr. HITE. That is correct.

Mr. YATES. The walls had to be repaired subsequent to that?

Mr. HITE. Yes, sir.

Mr. YATES. But you came in and asked us for the sum of $2.4 million for repairing the roof, and you said that would complete the repairs for the roof.

Mr. HITE. Yes, sir.

Mr. YATES. That is according to this justification which I have here.

Mr. HITE. I am going to defer to Mr. Fish. That was during my period of exile from the Department and I would prefer to have Mr. Fish answer.

Mr. YATES. Was that a voluntary exile?

Mr. HITE. Depending on how you see it, yes, sir.

Mr. YATES. Go ahead, Mr. Fish.

Mr. FISH. Mr. Chairman, that was not intended to be the entire dollars to fix the roof.

NEEDED ROOF REPAIR

Mr. YATES. Why did you use the unhappy phrase then that you used in this justification, "Construction-Approval of this request to transfer $2,360,000 from the road construction appropriation to the construction account plus the $546,616 in the construction account will allow the National Park Service to complete needed roof repair for the National Visitor Center"?

Mr. FISH."Probably" could have been a better word, Mr. Chairman, needed, but it was a matter of priority.

Mr. YATES. They did use the word "needed." You said, "to complete needed roof repairs," the Congress acted upon the representation that this was what was needed to put the roof in shape.

Mr. FISH. It was nowhere near sufficient funds to get the entire roof, Mr. Chairman.

Mr. YATES. What did you propose to do with the $2.4 million?

Mr. FISH. We proposed with the $2.3 million to do the most critical area of the roof and this was basically the main barrel over the main hall of the Visitor Center and then some other ancillary roof sections.

Mr. YATES. But here in your justification you talk about needing $800,000 for the main building roof, the flat roof area, stone roof, sky light, and flushing the new drainage system. Then you wanted $700,000 for the main building, vault roof. The estimate is based on the main hall vaulted roof. Then you wanted $1,250,000 on the concourse roof for the vaulted roof area and walls, installation, flushing special drainage between concourse and main building, structural repairs due to water damage, and new draining system. Then you wanted an amount for unforeseen items of $151,616.

Now what remains of the roof that was not repaired? Do you want me to show this to you?

Mr. FISH. Someone just handed me one, Mr. Chairman.

Mr. YATES. It seems to me that that covers the whole roof. Apparently the roof didn't cover anything.

Mr. FISH. It is insufficient funds to do the entire roof because the entire roof is about a $10 million job, Mr. Chairman.

Mr. YATES. Was it a $10 million job at the time you came to see us?

Mr. FISH. It may not have been at the time this was put in because we had gotten an estimate back in 1977 of about $1.5 million to do the entire roof so that the deterioration out there has just accelerated such that the entire roof right now would cost about $10 million.

Mr. REGULA. Mr. Chairman, could I ask what kind of a roof structure it is? Is it built up? What is the physical characteristic of the roof structure itself?

Mr. FISH. There are some areas that it is a built-up roof but there are other areas and particularly over the vaulted ceiling over the main hall that basically is stainless steel, coated stainless steel that replicates pretty much the effect that was there when it was built in 1907.

Mr. REGULA. Is that the exterior or the interior?

Mr. FISH. The exterior.

Mr. REGULA. Do they weld the sections to form the roof structure?

Mr. FISH. I think so. I am not really sure how that is done but it is basically over that vaulted area; the stainless steel. I guess they lap the sections together; I don't know whether they are welded or not.

Mr. REGULA. So that to the best of your knowledge it is built up with a petroleum product with gravel over it?

Mr. FISH. Not necessarily. In some areas it may be built up and in some it may be just a normal asphalt shingle. It varies. There are so many different sections of that roof. If I may show you here, this is a plan of the roof as though you were looking down on the roof and this one section here is what I was describing as the stainless steel portion. This is the concourse here which is a different type of covering and there are many little roofs throughout that perhaps maybe some are shingles, some are built up, some are in a different configuration.

Mr. REGULA. Are there a lot of valleys?

Mr. FISH. Yes.

Mr. REGULA. Is that where your leakage is coming from, the valleys?

Mr. FISH. Right now the worst leaks we are getting are in the book store over here which appear to be problems with the leaders coming down from the roof that we are discovering that perhaps they may have broken before and they put smaller pipes into larger pipes and of course it can't carry some of it.

Mr. YATES. Who is they? Who put the smaller pipes in the larger pipes?

Mr. FISH. It must have been the railroad.

Mr. YATES. When would they have done that, over the years?

Mr. FISH. Over the years on different repairs. They would come in and continually repair the roof, adding more tar or whatever to the structure.

Mr. REGULA. Are you talking about the drainage system?

Mr. FISH. Yes, the downspout.

In the walls of the building.

The other area where we have a very significant problem right now is just as you enter the old concourse from the main hall and the water the other day just sat in there about an inch or two inches deep. As this barrel roof comes down to meet this building there is a little ledge in there, a little valley, and the water is penetrating through that area.

I have some pictures if they would be helpful, Mr. Chairman.

Mr. YATES. Anything that will help us will be acceptable to the committee.

Mr. FISH. This is just a general view out here of Union Station. These are the areas outside where we are having problems with the stone overhead and this can show you some of the leakage coming through the stone area in the main entrance here.

This is the area I was saying was probably the most significant here in the concourse area along the south wall of the concourse and it shows that area here that pieces of plaster about an inch or so thick have come out. In fact, there you can see the water sitting along the south wall here. Here is a piece that came out the other day.

Mr. REGULA. The important picture would be the roof. There has to be a deficiency in your flashing that would allow this to happen as a result. What is causing the real problem?

Mr. FISH. That is right, and that is what we are up there for now. We are working on that particular item under contract to get that repaired.

Mr. MURTHA. Was the latest occurrance of damage caused by inadequate repair work? As I understand the situation the roof was uncovered and the rain caused the roof to collapse. Is that right?

Mr. FISH. We are trying to evaluate that right now, Mr. Chairman, as to what could cause what.

BIDS FOR ROOF REPAIR

Mr. YATES. Mr. Fish, let me state some additional facts. Now as I indicated, the committee and the Congress made available $2,360,000 for roof repairs. That was on November 27, 1979.

On July 10, 1980, the Park Service solicited bids for roof repairs and on September 13, 1980, you awarded the contract for roof repair. On September 29, 1980, you filed a notice to proceed.

The question I have is that the Congress has made available the funds on November 27, 1979. The first time you solicted bids for roof repairs was July 10. Why did it take you so long?

Mr. FISH. Mr. Chairman, we had to get the construction drawings accomplished and we had hired the consultant firm back in 1977 to make the initial investigation. We had them in November of 1979 update that. We got the money to prepare the construction contracts so that it could go out to contract. Then we had to go to the State Historic Preservation Officer for clearance. We had to go to the Advisory Council on Historic Preservation for clearance. We

went to the Commission of Fine Arts for clearance. We got those. We went out to bid.

Mr. YATES. The next question that occurs to me is this. Did you not know during the period when you were preparing the drawing that the amount of money that was available would not take care of the roof repair? Why then did you start the job without coming back to us and telling us that the money would not take care of the roof repair?

Mr. FISH. I can't answer that, Mr. Chairman. I don't know.

Mr. YATES. It is very obvious now that the money was inadequate; is it not?

ADDITIONAL AUTHORIZATION

Mr. DICKENSON. Mr. Chairman, at that time we did not have the authorization.

Mr. DICKS. Was that because the administration would not authorize it or because of congressional authorization?

Mr. DICKENSON. The authorization at that time by the Congress totalled about $21 million and therefore, the amount remaining of the authorization was not sufficient to do the entire job.

Mr. DICKS. Did you tell the authorizing committee that you needed additional authorization?

Mr. FISH. Actually there was a bill working its way through Congress at one time, as you pointed out, Mr. Chairman. There would have been $39 million in one of those bills. The last bill that was going through the Congress was for $36.1 million which would have done these things which would have fixed the roof, which would have completed the ramps around the building and that was working its way through the Congress.

Mr. YATES. What was that?

Mr. FISH. I could give you the number of that bill, Mr. Chairman.

Mr. DICKENSON. H.R. 6672.

Mr. YATES. What is the date of that when it was working through the Congress?

Mr. DICKENSON. The date?

Mr. YATES. What time are you talking about? You said at that time the bill was working its way through Congress. Was this after November 27, 1979?

Mr. FISH. Yes, sir.

Mr. YATES. Or before it?

Mr. HITE. I believe it was about a year ago, Mr. Chairman.

Mr. DICKS. Was the legislation being supported by the administration? Was it an administration bill?

Mr. FISH. Yes.

Mr. YATES. Why did you go ahead with your bids and why did you go ahead with your effort to fix the roof for $2,360,000? Were you going to partially repair the roof?

Mr. FISH. Yes. What we tried to do was to take the areas that were most deteriorated and get them fixed.

Mr. YATES. Why do that since the whole roof was deteriorated?

Mr. FISH. It was in bad shape and needed repair.

Mr. YATES. Then why did you come in on only part of it?

Mr. FISH. That was the only authorization.

Mr. YATES. Did you tell us at that time that you needed more money to repair the roof?

Mr. FISH. I don't know that.

Mr. YATES. Well, obviously from the material that we have it was not adequate but according to your justification, that is all you needed to complete the roof repair.

Mr. MURTHA. How can we be assured that $10 million is going to fix it now?

Mr. FISH. You cannot be assured, Mr. Murtha. That is the best estimate we can come up with, is that we have this $2 million contract, that we estimate that it would probably cost a total of $10 million, that we would need another $8 million to complete the roof work and once you get into——

Mr. YATES. We are going to answer a quorum call. I would like to know, when we come back, what the total amount spent on the building has been.

[Whereupon, a recess was taken.]

Mr. YATES. What is the total amount that has been spent on the building so far?

Mr. HITE. From all sources, sir, it is $46 million plus $5 million that was input from the railroads to build a replacement station.

Mr. YATES. As I recall last December $11 million was authorized to complete design and construction for the remaining 70 percent of the roof repairs and correct severe safety hazards of the Union Station complex. The material in support of that says $6.5 million of that would be used to prepare plans, specs and bid documents and to complete construction on the remaining 70 percent of the emergency roof repairs.

The balance of the $11 million was going to be used for repairs to the north wall of the concourse; $1.2 million to prepare plans and specs for emergency structural repairs to the stone ceiling located in the main entrance colonnade; $300,000 was to be used to correct serious electric violations in the main hall; and then the plans and specs for a fire suppression system.

Now you wanted $6.5 million additional in December. Why do you want $8.2 million or more now? Has it gone up that much in 2 months?

Mr. FISH. No, sir. The entire roof is $10 million. The best we can tell right now it is a $10 million job. We are spending $2 million right now. Therefore, we would need an additional $8 million and the $8 million would then compare with the $6.5 million. Why did we have $6.5 million one time and $8 million now?

Mr. YATES. That is the question I asked. How do you answer it?

Mr. FISH. The conditions that we are finding out there on the roof right now are such that we feel we have to increase that estimate.

Mr. YATES. When was the last time you were on the roof? You must have been on the roof two months ago to take a look at it or was it too cold in December? You must have looked at it at that time. At that time you said all you needed was $6.5 million but now you are not sure that $10 million is necessary, is that correct?

Mr. FISH. We are not sure of the $10 million, that is correct, Mr. Chairman. It is the best estimate we have right now. The consultants have been looking at it and our architects that are updating

their figures say that it would be an additional $8 million. We have discovered that people didn't realize when they were making those estimates the extent of the conditions, and we had two studies, Mr. Chairman, one as I said in 1977 by a consulting engineering firm and updated in 1979 by the same consulting engineering firm.

Mr. YATES. And the $2,360,000 was what you asked for at that time to complete the roof repairs in 1979? How much did the consulting firm tell you would be needed to repair the roof at that time?

Mr. FISH. At that time in 1977 they said a million and a half.

Mr. YATES. This is 1979. Wait a minute. Even in 1977 it took only a million and a half. Then the figure that you gave us in 1979 of $2,360,000 would have been appropriate, would it not? Now you are telling us in no way would that figure have been appropriate to complete repairs on the roof in 1979. How is that possible? You have a consulting engineer who studied the roof and who told you that it would cost a million and a half dollars in 1977 and then two years later the inflation being what it is and I assume he told you that would take care of the whole roof.

Mr. FISH. At that time, yes.

Mr. YATES. And he looked at it carefully?

Mr. FISH. Yes, he did.

Mr. YATES. So in 1979 you asked the committee for $2,360,000 and the committee gave it to you and at that time you said that was all you needed. You updated the report you had, didn't you, to complete repairs on the roof?

Mr. FISH. But at that time we asked for the $2,360,000, Mr. Chairman, that was to get the most needed repairs, that there was still going to be additional repairs needed.

Mr. YATES. If I understand your previous testimony based upon what your staff is now telling you, in 1977 you had an engineering study of the roof and at that time the engineer who did that study for you said it would take a million and how much?

Mr. FISH. A million and a half.

Mr. YATES. A million and a half to completely repair the roof, is that correct?

Mr. FISH. Yes, sir.

Mr. YATES. And then two years later that figure was updated to $2,360,000 to completely repair the roof, is that right? Why not now? Then what happens in two years? Why was that not adequate?

Mr. FISH. Well, what the consultant tells us is that it is not straight line deterioration but rather it is geometric, that it just increases and increases as the time goes by.

Mr. YATES. But wait a minute. It does not increase geometrically in a year and a half. In 1977 you hired an engineer who completed a study on the roof and he told you it would cost a million and a half to completely repair the roof.

Mr. FISH. Yes, sir.

Mr. YATES. A year and a half later you don't know how much geometric progression had occurred but at that time it was less than another million dollars, presumably taking care of inflation to completely repair the roof, is that correct?

Mr. FISH. No, sir. I think that was just to complete the most needed portion because his study——

Mr. YATES. All right. Let's go back to the study. You first said the study in 1977 said that the amount they needed, $1.5 million, was to completely repair the roof. Now, you say that is just to patch the roof.

Mr. DICKENSON. Yes, sir.

Mr. YATES. Just to patch; was that the situation in 1977?

Mr. DICKENSON. Not in 1977.

Mr. YATES. Do you have a copy of the 1977 study with you?

Mr. FISH. Yes, sir.

Mr. YATES. What does that study say about repairing the roof?

Mr. FISH. It looks like about $441,000.

Mr. DICKS. Mr. Chairman, I think their budget justification is about as leaky as their roof.

Mr. YATES. What was it you said earlier about the budget when the roof fell? We are trying to find out what the facts are now and where we are going.

Mr. FISH. This just included the front portion of the building, it did not include the back portion or the concourse so we added that to it and came up with $1.5 million, Mr. Chairman.

Mr. YATES. For the entire roof?

Mr. FISH. Yes, sir.

STUDIES ON COST TO REPAIR ROOF

Mr. YATES. And that is the study?

Mr. DICKS. Mr. Chairman, did they do a different study in 1979?

Mr. YATES. I am trying to find that out.

Mr. FISH. An updated one. Yes, sir.

Mr. YATES. What does the 1979 study show?

Mr. FISH. I have a penciled in figure of $8 million as the total.

Mr. DICKS. Are those studies going to be made available for the record, Mr. Chairman?

Mr. FISH. We would be delighted.

[The information follows:]

ROOFING SYSTEM STUDY

NATIONAL VISITOR CENTER
WASHINGTON, D. C.

UNITED STATES DEPARTMENT
OF THE INTERIOR

MAY 1977

PROJECT NO. 76060-10

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(VOSBECK VOSBECK KENDRICK REDINGER)
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- COST ANALYSIS
- ANALYSIS OF INSULATION
- CONSULTANTS AND FOOTNOTES

INTRODUCTION

The purpose of this study[1] is to determine the cause of roof leakage and drainage problems of the National Visitors Center and make recommendations to correct deficiencies as required to make the roof watertight and provide proper drainage.

Our investigation included:

1. Determination of type and condition of existing roofing system.

2. Determination of condition of existing roof drainage system.

3. Review of existing conditions and problems with the National Visitor Center maintenance staff.

4. Analysis of roof insulation deficiencies.

5. Determination of corrective measures which should be taken to remedy deficiencies found to be the cause of roof leakage as identified during the investigation of existing conditions.

6. A cost analysis of the work including costs for various new roof systems has been prepared. Consulting roofing experts accompanied us on field visits and assisted in analyzing existing conditions and determining preferred steps to correct the problems. In addition, we consulted manufacturers representatives obtaining more specific technical information concerning their roof systems.

SUMMARY

Existing Conditions

- Existing roof drains are inadequate in number and size for proper roof drainage.
- No roof insulation exists.
- Existing flat roofs have built-up roofing membranes which have deteriorated. Numerous "spot" repairs have been made and are unsuccessful in keeping roof water tight.
- Exposed metal cap flashing is in good condition and shows no sign of deterioration.
- Sealing of exposed metal flashing has been accomplished with flexible sealant which has hardened, fallen off, or pointed over with mortar.

Recommendations

- Drainage

  Remove existing roof drains and replace with new larger size roof drains.

  Horizontal piping to leaders should be increased.

  "Gravel Basins" should be located and removed.

- Insulation

  Insulation should be included as part of upgrading the National Visitor Center and improving roofing system.

- Membrane Roofing System

  Flat roof areas should receive new roofing system. Recommended is one-ply loose laid neoprene sheeting.

  Vaulted and gable roof areas should be patched and sprayed with an asphaltic coating to maintain their watertightness.

- Flashing

  Existing exposed metal flashing should be protected during progress of new work and reused.

  Existing base, projection and curb flashing should be removed. New flashings, compatible with new membrane roofing system, should be installed.

- Sealants

  Existing hardened sealant and pointing mortar should be removed. New non-hardening sealant and flexible backing rods should be installed.

- Projections

  Existing thru-roof projections not in use should be removed.

  Replace existing roof hatches and curbing with new roof hatches with integral curb.

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BACKGROUND

Events leading to the need for this study extend back to the conversion of Union Station from a railroad terminal to the National Visitor Center. Previous to its use as a Visitor Center, the building was owned and operated by the Washington Terminal Company (WTC).

The building was completed in 1907 and contract drawings are available for study. However, the specifications can not be located. When the terminal was to be converted into the National Visitor Center, contract drawings and specifications were prepared by Seymoor Averbach, AIA. The scope of which included work on roof areas. That portion of the contract was deleted at a later date.

Water leaking into the building continues and temporary measures (spot roofing cement patching) are undertaken after rain has caused damage. Several areas of the building show extensive water seepage damage and temporary repairs are not preventing additional leakage and damage.

ANALYSIS OF EXISTING ROOF CONDITIONS

o Storm Drainage

1. Square footage of each roof area was calculated in order to evaluate capacities of roof drains and related piping.

2. Comparing BOCA Plumbing Code[2] recommendations for sizes with pipe sizes shown on existing plans it was determined that the sizes of roof drains and their horizontal piping are inadequate for proper drainage.

3. The existing flat roofs are sloped for proper drainage by varying thickness of concrete topping on roof steel sub-structure. An increase in the number of roof drains or changing locations of existing drains would not increase rain water run off capacity.

4. Free area of existing roof drains have farther been reduced by roofing felt and tar lapping over the edge and down into the opening.

o Roof Insulation

1. Existing plans show various roofing materials and methods of construction. There is no indication of roof insulation.

2. Test cuts into roof membrane showed no presence of roof insulation.

o Membrane Roofing

1. Existing plans called for built-up roofing over roof structure. No materials were called out.

2. Test cuts were made and visual examination revealed two 3 ply built-up roofing membranes. Chemical analysis revealed traces of coal tar pitch at lowest point (at structure) and asphalt bitumen was used in both of the existing systems.

3. An aluminum asphalt surfacing was applied in 1973 as a top coat.

4. Following is a discription of each roof area.[3]

   a. Roofs 4, 5, 6, 9, 14, 18, 19, 21, 22, 23, 24, 25, 26, 27

      Flat with bald, built-up membrane, aluminum coated, several blisters. Older membrane (coal tar pitch) had been repaired by applying a cap sheet over it. Some gravel left in between.

b. Roofs 2, 13, 16, 28

Granite cap stones. Joints in stone appear to have been repaired with cementitious coating, sometimes applied over elastomeric sealant. Grout is cracking and spalling. Built-up gutter is copper, coated with asphaltic materials, aluminized.

c. Roof 3

Flat roofs with skylight structures which have been roofed over. Appears to be aluminum coated.

d. Roofs 7, 17

Flat with several skylights. Aluminized cap sheet, considerable blistering, evidence of some repairs.

e. Roof 20

Saw-tooth skylights with flat sections between, bald aluminized membrane, considerable blistering on flat portion and deterioration of sloped section. Glass face has been covered over with corrugated aluminum panels.

f. Roof 8

Technically speaking, not a roof but built-in gutter originally copper lined, but now coated with felts, fabric and asphaltic compounds, aluminum coated. Some blistering.

g. Roof 4a

Flat with five roofed over skylight structures. Appears to be also capped and aluminum coated.

h. Roofs 12, 15

Flat roof with aluminized cap sheet, severly blistered. Wooden roof hatch in poor condition; usually left open contribute to water damage to space below opening.

o Flashings

1. Existing exposed metal flashings and gutters are copper which have been covered with mesh fabric and asphalt coating, aluminized. Metal flashing are solid, tight and undamaged.

- Sealants

1. Existing plans do not indicate sealing of joints or flashing penetrations.

2. Visual examination revealed that elastomeric sealant had been installed but has since dried out and remained in place; fell out; or covered over with cement pointing mortar.

- Projections and Roof Accessories

1. Existing vents, conduits, HVAC equipment, skylights, roof hatches and other projections through the roof present additional areas for water to enter the building.

RECOMMENDATIONS FOR CORRECTIVE MEASURES

o Drainage

1. To increase drainage capacity size of roof drains must be increased along with horizontal piping. The existing leaders are capable of carrying increased water. New reducers would be installed between new larger size horizontal piping and existing leaders. It will be necessary to remove finished ceilings to do this work, but many areas are presently unused. Patching of damaged ceilings could be covered under future contracts when those spaces are to refinished.

2. Existing drawings indicate "gravel basin-suspended" as part of drainage piping. These basins should be located and removed because they restrict the flow rate of the piping and are an unnecessary part of the roof drainage system.

o Insulation

1. A heating cost study[4] by our office indicated that insulation would help reduce heating costs of the National Visitor Center. It is therefore recommended that as part of the work of this contract should include installation of insulation to provide a minimum "R" factor of 10.0. be provided as a part of the roof repair work.

2. Insulation should be either closed-cell extruded polystyrene board or fiberglass. These two materials provide dimensional stability, high thermal resistance, low profile and high moisture resistance.

3. Urethane, spray applied or board form are not dimensionally stable and their thermal resistance decreases over the passage of time.

4. Cellular glass and expanded perlite fiber boards require greater thicknesses to provide similar "R" factors as recommended insulation. This increases weight on structure and may cause drainage problem at the third floor roof near the front of the building.

o Membrane Roofing

1. In considering corrective measures to be recommended we analyzed five different roof systems as follows:

   a. Conventional and ply built-up asphalt roofing membrane

      o Four plys of asphalt saturated felt cloth with five moppings of asphalt. Top surface would be "bald" (no gravel or slag) and coated with an aluminum asphalt. This is the most common roofing installed today.

c Installation requires mopping of insulation with asphalt then alternate applications of felt and asphalt bitumen. This system requires no moisture be trapped below membrane. Only as much area that can be covered in one day should be exposed or danger of allowing moisture into substrate increases.

- This is the existing type of roof on the National Visitor Center. The chemicals in the asphalt breal.down over the years; the asphalt gets brittle and cracks; the felt cloth looses its water resistance and will allow water to penetrate insulation and concrete deck below.
- Installation is time consuming; staining of spilled asphalt possible (wall at south end of main hall already stained). This system requires complete removal of existing membrane roofing.
- A 10, 15 or 20 year bond is available to be purchased which is pro-rated for repair costs.

b. Inverted (insulation over membrane) four ply built-up asphalt roofing membrane

- Four plys of asphalt saturated felt cloth with five moppings of asphalt. Insulation is placed over membrane. Two methods for securing insulation are used, 10 pounds per square foot of stones or a flood coat of asphalt.
- Installation is similar to conventional roof above.
- The advantage of placing insulation over felts and asphalt reduces the direct exposure of weather and ultra-violet rays on the membrane. This lengthens the life of the system and provides extended protection to the building.
- The disadvantages are the same installation problems as with a conventional roof. There is only one type of insulation that can be used. This tends to run the cost of the system up.
- When securing the insulation with hot bitumen, care must be used to see that the temperature is not too high or it will melt the plastic type insulation.
- A guarantee, similar to a conventional roof, is available.
- Complete removal of existing membrane roofing required.

c. Fluid applied elastomeric membrane

- A liquid plastic type resin is spray applied to substrate. Various chemicals are added to provide protection from specific dangers (chemical; physical abuse; building movement; etc.).

- Installation requires care and competent installers so that an even and watertight membrane is applied. Substrate must be in good condition, therefore, removal of existing system is necessary.

- The use of a foamed-in-place urethane is most often used as insulation/substrate. As discussed in "Insulations" above we do not recommend the use of this material.

- The board type insulations provide too many joints which are potential stress and leak areas. The fluid is applied on vertical and horizontal surfaces. Preparation of the many materials and their different coefficients of expansion and the problems of an acceptable insulation preclude the use of this system.

- A 2 year guarantee is provided, additional years of protection is usually available at an extra cost depending on installation methods and materials.

d. One-ply neoprene sheet membrane

- A 40-60 mil thick sheet of treated neoprene is loosely laid over insulation. The sheets can be of varied widths to suite each deck to minimize the number of seams.

- Installation requires unrolling of sheet goods over insulation. Sealing of seams is accomplished by chemically melting the two sheets then applying a plastic cement sealant. To prevent sheeting from blowing off roof stones are placed over entire area or a system of bonded discs is applied between sheets and substrate.

- Existing roofing membrane can be left in place, insulation laid loose over surface and sheeting applied over insulation.

- Ultra-violet damage is possible if not properly protected or treated.

- A 5 year guarantee is provided.

e. Sealed metal roof

- Sheets of metal (copper, very expensive; stainless steel; aluminum; terne, etc.) are secured to wood nailers, the seams are either welded or locked (folded over each other).

- Installation requires treated wood nailers secured to concrete deck. Sheets, less than four feet square, are secured to nailer, then seams are sealed. Flat seams are mandatory because of the flatness of the roofs.

- Expansion joints required often (30 feet max.). Some metals require painting every few years to protect metal from oxidation.

- Removal of existing membrane will be required to secure nailing strips. Installation of insulation will be slow (hence more costly) due to cutting required to fit between nailers.

- A 20 year guarantee is issued by metal manufacturer in conjunction with installer.

2. Our recommendation is to install a loose-laid one-ply neoprene sheet. We base our selection of this system in part because there is no need to disturb the existing roofing. Not only is there no removal and disposal of existing roofing required, but the chance of damage to the exposed structure is eliminated.

This system allows the trapped moisture to evaporate. With the membrane dried out and the neoprene sheet in-place, there are effectively 3 roofing membranes.

The material has a natural light gray color to reduce heat gained during summer months reducing cooling costs. No additional coating is required. No weight for slag or stone ballast is added to structure.

Loose-laid neoprene sheet is a clean method. No hot or staining materials are used. Work can be accomplished under most weather conditions. Frost or wet materials stops work of hot asphalt systems.

Selection of roof insulation materials and manufacturers are more flexible than other systems and no special work is required for installation.

There are many manufacturers and licensed installers in this area to insure competitive pricing.

3. The large vaulted roofs appear to have been sprayed with an asphalt emulsion and chopped fiberglass roving. This surface has begun to erode and is delaminating in a few places. The loose areas should be cut out and repaired with fiberglass reinforced asphalt emulsion and the entire roofs treated with a U.V. resistant coating to prevent more deterioration.

- Flashings

1. Existing exposed metal thru-wall flashings should be reused with the new membrane system. Protection will be required to avoid damage to the metal flashings.

2. Existing exposed metal flashings and gutters around perimeter of stone caps should be reused. No work will be required in these areas.

3. Fabric and metal flashings for thru-roof projections should be removed and replaced with new materials compatible with the membrane roofing system installed.

o Sealants

1. It is recommended that 2 part polymer sealant be used to seal exposed metal thru-wall flashings and joints between granite cap stones.

2. Existing sealants, mortar and other materials should be removed and the joint cut back; a flexible backingrod should be installed and the sealant applied and tooled to a smooth flush finish. Depth and width of joint should be as required for maximum life of sealant and protection of joint.

o Projections and roof accessories

1. Existing projections which are not in use should be removed. Two (2) HVAC units located on roof #21 should be removed along with structural steel supports, conduits and related materials.

2. Existing roof hatches on roofs #12 and #15 should be removed with curbing and flashing. Install new roof hatches, spring loaded, clear acrylic top and integral insulated curb. Existing hatches are in poor condition and generally left open to provide light to facilitate climbing ladder to gain access to these areas.

3. Fire hose cabinets, loose ladders and other items where found on various roofs. These should be removed when possible and damaged areas repaired.

COST ANALYSIS

1.	Roof Drainage		
	a. Remove existing roof drains and install new roof drains	$150 ea x 36 =	5,500
	b. Remove gravel basins	$150 ea x 15 =	2,500
	c. Remove existing undersized piping and install new piping	$14/L.F. x 1,500 =	21,000
	d. Remove and dispose existing ceilings	$1.50/S.F. x 3,000 =	4,500
			33,500
2.	Roof Insulation		
	a. Extruded polystyrene	.43/S.F. x 66,000 =	28,000
	b. Fiberglass	.78/S.F. x 66,000 =	51,000
	c. Urethane Foamed in-place	.93/S.F. x 66,000 =	61,000
	Board	.66/S.F. x 66,000 =	44,000
	d. Cellular glass	1.04/S.F. x 66,000 =	69,000
	e. Expanded perlite fiber	.77/S.F. x 66,000 =	51,000
3.	Membrane Roofing System		
	a. Conventional 4-ply 20 yr. guar.	$1.60/S.F. x 66,000 =	105,000
	b. Inverted 4-ply 20 yr. guar. (insu. incl.)	3.49/S.F. x 66,000 =	230,000
	c. Fluid applied elastomeric membrane	2.40/S.F. x 66,000 =	154,000
	d. One-ply EDPM sheet membrane	2.93/S.F. x 66,000 =	193,000
	e. Seamed metal roofing (stainless steel)	3.30/S.F. x 66,000 =	218,000
	f. Remove and dispose of existing roofing	2.00/S.F. x 66,000 =	132,000
	g. Spray-on asphalt coating	.17/S.F. x 67,000 =	12,000

4.	Flashings			
	a.	Fabric (felt)	$0.53/S.F. x 16,000 =	8,500
	b.	Copper (24 oz.)	3.80/S.F. x 16,000 =	60,000
	c.	Fiberglass	0.70/S.F. x 16,000 =	11,000
	d.	EDPM	1.31/S.F. x 16,000 =	21,000
5.	Sealant			
	a.	Preparation of joints	$0.25/L.F. x 3,700 =	900
	b.	Backing rod	0.45/S.F. x 3,700 =	1,700
	c.	Sealant (2-part polysulfide)	2.06/S.F. x 3,700 =	7,600
				10,000
6.	Roof Accessories			
	a.	Roof hatches	$650 ea x 3 =	2,000

Summary of Costs *

1.	General Conditions	$ 15,000
2.	Roof Drainage	33,000
3.	Roof Insulation (Polystryene Board)	28,000
4.	Membrane Roofing (EDPM Sheet)	193,000
5.	Asphalt Coating	12,000
6.	Flashing (EDPM)	21,000
7.	Sealants	10,200
8.	Roof Accessories	2,000
		314,700
9.	Contingency (15%)	50,000
10.	Overhead (10%)	36,300
		401,000
11.	Profit (10%)	40,000
		441,000

* Does not include design or inspection fees.

ANALYSIS OF INSULATION [4]

The National Visitor Center, formerly Union Station, was originally constructed around the turn of the century. Since then, the building has undergone several modifications. No accurate record of all these modifications was available, only the more recent records of the conversion from a railroad station to a visitor center. Therefore, due to the lack of complete information, the unusual building construction, and the brevity of completion time, certain assumptions were necessary. The following is a list of assumptions used by us for the purposes of this study, and do not occur in any specific order.

The roof construction varied drastically throughout the entire structure and it was necessary to locate each varying section.

The vast majority of the roof sections had skylights throughout. In these instances, we established percentages of skylight to roof and computed an average thermal resistance value for that surface.

Many of the interior ceiling sections had interior skylights, separate from the exterior skylights. In these instances, we established percentages of skylights to ceiling and computed an average thermal resistance value for that surface

Summary of Roof Coefficients

Hall of States	[11]	.24
Book Store	[20]	.20
Construction Office	[7]	.20
3rd Level		.34
4th Level		.25

CONSULTANTS

1. Technical

   Frank Gorham; Roofing Services; President
   Sybe Bakker; Moisture Protection System Analysis; President

2. Manufacturers Representatives

   Jim O'Brien; O'Brien Associates
   Steve Kubicka; Johns-Manville Sales Corporation
   Stan Kenison; Every Water Guard Co., Inc.
   Robert W. Fick; Cellotex Corporation

FOOTNOTES

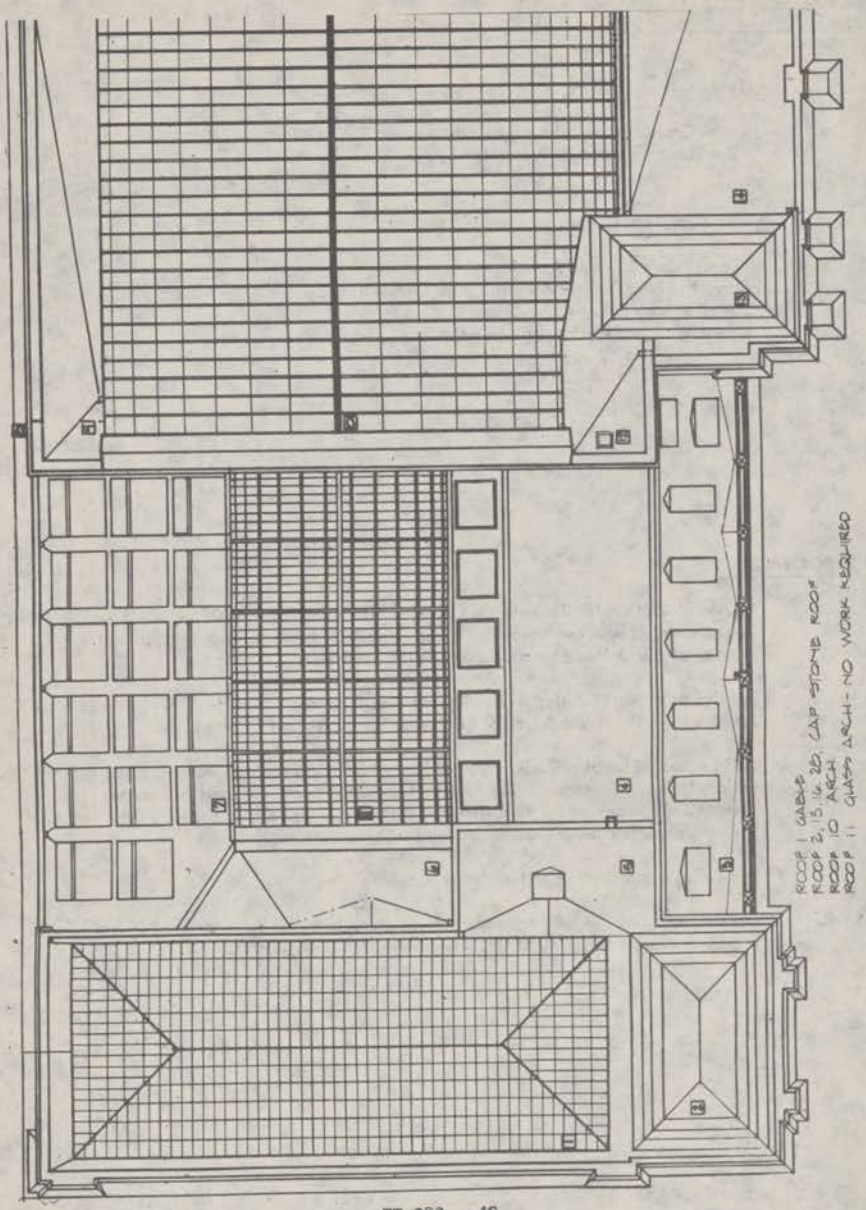
1. The authorization for the report is Contract No. CX-2000-6-0028 dated 30 August 1976. The contract is between Vosbeck Vosbeck Kendrick Redinger and the National Park Service of the United States Department of the Interior.

   Special attention is called to Amendment No. 3, dated March 14, 1977, Paragraph A, Subparagraph 8, Investigation of Leaks and Roof Drainage Systems.

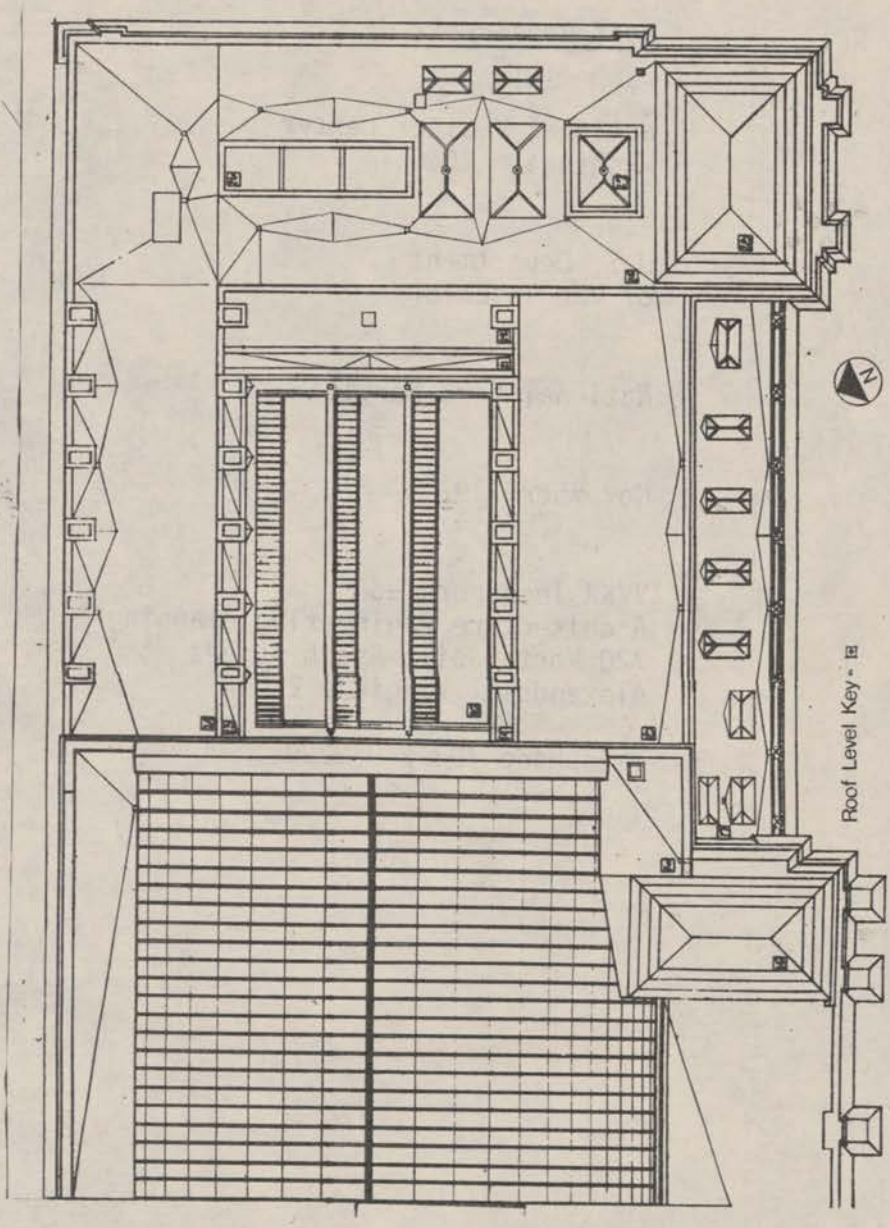
2. "BOCA Basic Plumbing Code/1975" (Building Officials & Code Administrators International, Inc., Chicago, 1975) P. 63. The BOCA Code was used as a guide. It's standards are excepted by the District of Columbia. As Federal property, the National Visitor Center is exempt from following local regulations.

3. See drawing attached at end of this report.

4. Steam Cost Study (VVKR Partnership, U.S. Department of the Interior, National Park Service - Project No. 76060.09, Alexandria, Virginia, 1977).


ROOF 1 GABLE
ROOF 2, 15, 16, 20, CAP STONE ROOF
ROOF 10 ARCH
ROOF 11 GLASS ARCH - NO WORK REQUIRED

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Roof Repairs Study

National Visitor Center
Washington, D.C.

U.S. Department
of the Interior

National Park Service

November, 1979

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It is the purpose of this study to establish and document the existing condition of the various roofs at the National Visitor Center in Washington, D.C., to determine what appropriate repairs should be made and to make recommendations as to which roofing system(s) should be considered for use in making the repairs. The scope of the investigation included:

- On-site surveys to determine the existing condition of the various roofs in terms of:
  - Roofing membrane & insulation
  - Flashing
  - Drainage
  - Roof sub-structure
  - Accessibility of the roof
  - Roof penetrations
- Preparation of drawings and photographs to document the information gathered.*
- Determination of what appropriate repairs need to be made in order to restore the roof's waterproofing function.
- Recommendations concerning the means which should be considered for making the repairs.
- Preparation of a preliminary statement of probable costs.

* The drawings and photographs are included as part of this report under separate cover.

The building was completed in 1907 and was operated until recent years by the Washington Terminal Company as a railroad terminal under the name of "Union Station." In the mid 1970's the building, having been obtained by the National Park Service, was converted to its present function as the National Visitor Center. At the time of the conversion, the scope of the work included some repairs to the roof areas. This was, however, deleted from that contract. A later study (May, 1977)[2] was conducted, dealing specifically with roof problems, but was limited to the main building. This report replaces that study in its entirity due to the acceleration of the roof's deterioration since that time and to the inclusion of the Concourse roof as part of its concern.

BACKGROUND

2

Description: The "roof" at the National Visitor Center is comprised of many components at several levels. Consistently, however, the condition of the various roof surfaces, and the related building interiors, shows that problems have existed for some time and that neglect and poor maintenance have severely compounded these problems. The debris observed on the roofs ranged from abandoned roofing tools to pockets of soil in sufficient enough amounts to support vegetation. While the roofs over the office areas are typically flat with gentle slopes for drainage, the roofs over the main public spaces (Concourse, Main Hall and Hall of States) are "barrel" vaulted. Although the roof over the Main Hall is highly visible from several angles in the surrounding area, the remaining roofs pose no particular visual concerns.

Roofing: Although the overall degree of deterioration of both the vaulted and flat areas varies from roof to roof, the extent is such that, practically, all existing roofing should be considered as having failed. The only exception to this is the glass and metal vault over the Hall of States, which appears to be in good condition.

Flashing: In most cases the original one piece copper sheet flashing is still in place. While the material is in good condition, the effectiveness of the original detailing and/or installation, as evidenced by sample areas uncovered for this report, must be considered suspect. Typically, the original flashing has been coated with an asphaltic material, sometimes in combination with a fabric, and sometimes modified to serve as counter flashing with newer base conditions. As with the past roof patching, these measures may have effected short term remedies to problems, but have done little to add to the long term effectiveness of the flashing.

Insulation: None of the roofs appear to be insulated.

Drainage: Even in areas where sufficient roof pitch and numbers of drains exist to handle the water runoff, the present drainage system appears functionally ineffective. This is due largely to a reduction in the capacity of the drains by successive flashing into the opening for patching and reroofing and by widespread clogging of the drains by debris. In many cases however, the capacity of the existing system is insufficient to handle the areas being served (by presently acceptable standards) due to either too few drains or to the reduction in size of the leaders once inside the building. Indications of the existence of "gravel basins" as part of the original drainage system could further explain the general ineffectiveness of the system as a whole.

Sub-structure: Although varying in composition, virtually every sample area uncovered for inspection appeared visually to be sound. Consistently, however, each of these samples confirmed the presence of water below the original membrane. This, in combination with the

development of large cracks visible from below in certain areas, suggests the possibility of serious structural problems. The extent of these problems was considered beyond the scope of this report.

Penetrations: The roofs, in general are covered with an abundance of mechanical units, vents, stacks, exhaust hoods, skylights, conduits, piping, hatches and other assorted devices. Many of these are non-functioning and serve only as a potential source of leaks.

Accessibility: Although all roofs are accessible, the degree of safety and/or ease of access varies from place to place. Typically, the flat roofs pose the fewest problems, both in terms of access to the roof and to various points on the roof. Although quite circuitous in some cases, the basic approach seems reasonable.

Miscellaneous: Certain conditions exist which, although not strictly definable as roofing problems, should be mentioned as part of the overall problem of water penetration into the building. These include the miscellaneous items of stonework (parapet caps, cornices, window sills, etc.) and related mortar joints, the deteriorated condition of various brick walls, the profusion of open and/or broken windows, and the condition of the existing chimneys on the eastern roofs which once functioned to ventilate the train tunnels below. It should be emphasized that, while quite important, it is obvious that roofing is only part of the problem being experienced by the building. It is also necessary to point out that the physical conditions documented in this report describe the roof at a particular point in time (the last visit to the roof being 24 October, 1979). Due to the rapidly accelerating rate of deterioration, and to the very nature of the problem itself, it is impossible to guarantee how long this description will be valid. It is only possible to say that without help the conditions can only worsen.

Since eliminating the penetration of water into the building is the prime objective, there are certain actions that should be taken immediately. These include the resolution of the water tank overflow problem at roof "I", the removal of all standing water and collected debris from the various roofs, the temporary patching of all existing holes and broken windows and the initiation of a more rigorous maintenance program. While this, obviously, will not solve all of the building's problems, it is a necessary starting point and can be done with little difficulty. The more long range issues which should be addressed in the next phase of this project can be summarized as follows:

Roofing: Every roof, except the glass barrel vault (roof "Q") over the Hall of States, should be stripped of all roofing material, down to the top layer of the sub-structure, and replaced with new roofing membrane.

Flashing: All existing flashing, except roofs "Q", "S" and "Y", should be removed and replaced with new, more effective flashing of a type compatible with the roofing systems selected. Flashing at roofs "S" and "Y" should be examined to determine if replacement is necessary. Roof "Q" should be regasketed.

Insulation: All roofs should be insulated to achieve a minimum "R" factor of 10.0^3.

Drainage: All existing drains should be removed and replaced with new drains. Additional drains should be provided where necessary to meet the required capacity. Where possible, built-in copper gutters should be removed and replaced with new roofing membranes and drains.

Sub-structure: The sub-structure should be allowed to dry thoroughly, surveyed for damage and repaired to provide a firm, secure substrate prior to the application of any roofing membrane.

Penetrations: Holes left by the removal of roof items should be patched and repaired in a manner compatible with the particular sub-structure. Penetrations to remain should be upgraded to eliminate sources of leakage.

Accessibility: Hatches and/or ladders should be upgraded or replaced to increase the degree of safety associated with access to certain roofs (particularly roofs "Y", "W", "X" and "Y") and to various points on certain roofs ("L" and "Y"). A more complete survey should be conducted to fully define the problem.

In addition, further information is required in some areas. The condition of the exterior walls and the miscellaneous items of stonework, the determination of which roof top items should remain and which be removed, the extent of damage already existing to the building's structure

and the condition of the building's drainage system, past the roof drains, are all problem areas beyond the scope of this report. It is necessary that these surveys be completed, however, before the next phase of this project can begin immediate direction should provided by the National Park Service on this matter.

ROOFS "A"

Description: Ten 80 S.F. flat roofs located on the north and south edges of the skylight roof over the National Bookstore. (Total 800 S.F.)

Roofing: Flat, relatively smooth surfaced, built up membrane, aluminum coated with considerable blistering. Original coal tar pitch membrane apparently patched in the past with a floodcoat of asphaltic material (some gravel left in between.) Condition of the roof is considerably deteriorated.

Flashing: Original one piece copper sheet coated with mesh fabric and asphaltic material. Copper appears, materially, to be in good condition but the effectiveness of detailing and/or installation is questionable.

Insulation: None existing.

Drainage: Existing pitch and number of drains(1 each roof) sufficient to handle area served. No refief system to prevent water collecting should single drain not function. Some ponding.

Sub-structure: Concrete topping slab over structural steel and terra cotta sub-structure.

Penetrations: Minimum.

Accessibility: Difficult. Several obstructed by mechanical units through windows and one by a wood platform covering entire surface at 4'-0" above the roof.

ROOF "B"

Description: One 1550 S.F. flat roof over first floor two story space on the south edge of the Hall of States.

Roofing: Same as roof "A"

Flashing: Same as roof "A"

Insulation: None

Drainage: Existing pitch and number of drains sufficient to handle areas served (roof "B" and part of roof "Q"). Some ponding in spots around drains.

Sub-structure: Same as roof "A".

PHYSICAL SURVEY

Penetrations: Majority of roof penetrated by 4'-0" high housings for "false skylight" electrical fixtures. Housings coated with an asphaltic material with embedded mesh fabric.

Accessibility: Poor. To roof from building through window. Impaired by approximately 8'-0" on center steel beams supporting wire screens, plywood platforms and mechanical equipment at 5'-6" above the roof surface.

ROOF "C"

Description: One 6600 S. F. flat roof over first floor two story space on the north edge of the Hall of States.

Roofing: Same as roof "A".

Flashing: Same as roof "A". In some areas the copper flashing has been modified to serve as counter flashing for newer cant and base flashing condition.

Insulation: None.

Drainage: Existing pitch is sufficient. The capacity of the existing drains is inadequate, by presently acceptable standards, however, to handle the runoff from the areas served.

Sub-structure: Same as roof "A".

Penetrations: The majority of the roof is penetrated by "sawtoothed" former skylight structures, the glazed portions of which have been removed and/or covered with ribbed metal panels.

Accessibility: Good. To roof by permanent ladder down from roof "E".

ROOF "D"

Description: One 6500 S.F. skylight roof over the first floor two story National Bookstore space.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Existing pitch and number of drains sufficient to handle roof areas served.

Sub-structure: Same as roof "A".

Penetration: Majority of roof comprised of three continuous, functioning skylight structures.

Accessibility: Poor. To roof from building through office windows.

Miscellaneous: Wood troughs constructed along south edge to divert runoff from draining onto roofs "A" below.

ROOFS "E"

Description: One 1400 S.F. flat roof over the two story west entry to the Hall of States.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A"

Penetrations: Minimum (two access hatches and miscellaneous vents).

Accessibility: Good. To roof from building by door.

Miscellaneous: Roof supports wood steps for access to space beneath roof "Q" and steel stair for access to floor below roof "S".

ROOF "F"

Description: One 1200 S.F. flat roof over two story first floor

storage area adjacent to National Bookstore space.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A".

Penetrations: Moderate. Miscellaneous mechanical equipment and vents.

Accessibility: Poor. To roof from building by office window.

ROOF "G"

Description: One 600 S.F. flat roof over second floor storage area, east end of the building.

Roofing: Same as roof "A". Roof divided into three areas by approximately 8" high "ribs".

Flashing: Same as roof "A".

Insulation: None

Drainage: Existing pitch and number of drains sufficient to handle roof areas served. No relief system to prevent water from collecting to top of "ribs" if single drain fails to function in two of three areas.

Sub-structure: Same as roof "A".

Penetrations: Considerable portion penetrated by glass skylight structures in need of considerable repair.

Accessibility: Poor. To roof from building by office windows.

Miscellaneous: Good bit of trash collecting.

ROOF "H"

Description: One 500 S.F. flat roof over third floor office space on west side of main portico entrance to Main Hall.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Existing pitch and number of drains sufficient to handle roof areas served. Some ponding exists around drains. Major problem exists along ballustrade side (south edge) where original valley gutter appears to have been filled in with successive patching and reroofing to such an extent that it no longer functions to keep runoff from washing onto the face of the building below.

Sub-structure: Same as roof "A".

Penetrations: Roof penetrated by a number of areas where former skylight structures have been removed and replaced by raised platforms. Tops and sides of these platforms are roofed and flashed in a manner similar to the rest of the roof.

Accessibility: Very poor. To roof by temporary ladder from roof "P".

ROOF "I"

Description: One 5650 S.F. flat roof directly over main portico entrance to Main Hall.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Existing pitch sufficient. Capacity of existing drains severly inadequate to handle quantities of water served. Two drains are presently required to drain all of roof "I" (5650 S.F.), a portion of roof "Y" (15,500 S.F.) and almost constantly running overflow pipes from the adjacent water tanks.

Sub-structure: Same as roof "A". Large cracks visually noticeable

in vaulted ceiling areas below, over main portico entrance.

Penetrations: Minimum. Access hatches to electrical fixtures below & pipe supports for mechanical equipment above.

Accessibility: Good. To roof from building by doors & wood steps.

Miscellaneous: Roofing deterioration significant where condensate pipe drains onto roof from mechanical eqiupment above. Problem compounded by continuous flow of water from overflow pipes from adjacent water tanks.

ROOF "J"

Description: One 3500 S.F. flat roof over third floor office space on east side of main portico entrance to Main Hall.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "H".

Sub-structure: Same as roof "A".

Penetrations: Considerable number of glass skylight structures in need of extensive repair. Some mechanical units and exhaust ducts and associated piping, wiring and conduit.

Accessibility: Good. To roof from building by window from corridor.

ROOF "K"

Description: One 400 S.F. flat roof over third floor office space, east end of building.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "A".

Sub-structure: Same as roof "A".

Penetrations: Majority of roof penetrated by one glass skylight structure which has been coated with a black asphaltic material and in turn penetrated by a mechanical stack.

Accessibility: Poor. To roof from building through office windows.

Miscellaneous: Considerable amount of debris collected.

ROOF "L"

Description: One 85,000 S.F. barrel vaulted roof over Concourse area.

Roofing: Smooth surfaced with aluminized coating, considerable number of blisters, each showing signs of water being retained within the membranes. Original coal tar pitch membrane apparently patched in the past with an asphaltic material reinforced with chopped glass fiber material. Patch coat appears to have been applied without regard to substrate (over roof and flat skylight as well.) Membrane shows considerable deterioration.

Flashing: Same as roof "A". Stainless steel counter-flashing and new base condition at new facades (east and west ends).

Insulation: None

Drainage: Existing pitch is sufficient. Capacity of existing drains is insufficient to handle areas being served (by presently acceptable standards).

Sub-structure: Varies over the roof. Predominantly consists of reinforced concrete roof planks supported on a structural steel purlin and truss system, clear spanning the area below. The area adjacent to the newer east and west facades, however, utilizes metal deck in place of the concrete planks. Continuous along each side, and accounting for about one half of the total area, are flat glass skylights running the entire length of the building. Large areas of the glass are broken and/or damaged, providing penetration points for water, as well as tremendous potential safety problems. The gutter areas along each side of the roof appear to be copper lined.

Penetration: A major roof penetration exists in the form of a copper and translucent fiberglass vent structure running continuous along

the top of the vault.

Accessibility: Poor. To roof by permanent ladder from roof "C". Access to top of vault by unaided climbing. Glass substrate undistinguishable from solid roof in appearance and certain areas in southeast corner of roof effectively unaccessible with any degree of safety.

ROOF "M"

Description: One 500 S.F. flat roof over a third floor enclosed corridor at east end of building.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A".

Penetrations: Minimum. Piping and support associated with mechanical units above roof.

Accessibility: Good. To roof from building by door.

ROOF "N"

Description: One 3800 S.F. flat roof over third floor office space at west end of building.

Roofing: Same as roof "A". Large asphaltic sheet material patch where mechanical unit installed.

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

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Sub-structure: Same as roof "A".

Penetrations: Miscellaneous vents and one small piece of mechanical equipment.

Accessibility: Good. To roof from building by door.

ROOF "O"

Description: One 9800 S.F. flat roof over fourth floor office space at west end of building.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A".

Penetrations: Several glass skylight structures in need of repair, some of which are coated with a black asphaltic material and penetrated by mechanical equipment, miscellaneous vents and hatches and an abandoned steam elevator equipment penthouse.

Accessibility: Good. To the roof by permanent ladder up from roof "J".

Miscellaneous: Electrical conduit and wiring associated with building lights running along parapets and across roof in places.

ROOF "P"

Description: One 2900 S.F. Flat roof over stair and elevator area at west end of building.

Roofing: Same as roof "A". Gutter area around roof "S" appears to be ribbed copper, coated with an asphaltic material.

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A".

Penetrations: Large 2'-0" high covered vent coated in a manner similar to the roof (penetrated by two stacks) and wood supports and piping associated with an abandoned "fire stand".

Accessibility: Good. To roof by permanent ladder up from roof "N".

ROOF "Q"

Description: One 8800 S.F. barrel vaulted roof over the hall of states.

Roofing: No roofing membranes.

Flashing: Copper (integral with structure).

Insulation: None

Drainage: Runoff collected at each side by copper gutters and distributed by copper down spouts to roofs "B" and "C".

Sub-structure: Steel framed (greenhouse styled) joists and purlins supporting ribbed, wire glass and copper outer vault. Appears structurally sound.

Penetrations: Continuous vent along top of vault.

Accessibility: Good, to underside of roof from roof "E" by door. Very difficult to outer surface.

Miscellaneous: Presence of a plastic sheet draped over ceiling vault below is only indication of water penetration. "Rubber" weather-stripping between ribbed glass and structure is askew and missing in places, effectiveness is suspect.

ROOF "R"

Description: One 5500 S.F. flat roof over fourth floor office space at east

end of building.

Roofing: Same as roof "A". Severely deteriorated.

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "C".

Sub-structure: Same as roof "A".

Penetrations: One glass skylight structure, penetrated by mechanical equipment and in need of repair, wood supports and piping associated with an abandoned "fire stand", and miscellaneous vents.

Accessibility: Good. Separated from roof "O" by very low parapet.

ROOF "S"

Description: One 9000 S.F. low slope hip roof over attic space at the far west end of the building.

Roofing: The top membrane appears to be an asphaltic/chopped glass fiber material applied as a patch coat over the original roofing (Precast concrete tiles over a coal tar pitch membrane). The original roofing is at least partially deteriorated as are the steel members anchoring it to the sub-structure. Indications were present of water being retained within the roofing by the top membrane. Roofing is similar to, but apparently in better condition than,roof "Y" described later.

Flashing: Assumed to be copper.

Insulation: None

Drainage: Runoff washes onto roof "P".

Sub-structure: Same as roof "A".

Penetrations: None

Accessibility: Good. Step up from roof "P".

ROOF "T"

Description: One 4850 S.F. flat roof over fourth floor office space at the east end of the building.

Roofing: Same as roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "D".

Sub-structure: Same as roof "A".

Penetrations: Miscellaneous vents, mechanical equipment and an abandoned "fire stand" similar to roof "R".

Accessibility: Good. Practically continuous with roof "O".

ROOFS "U"

Description: Two, 2300 S.F. each, low sloped hip roofed, cap stones at southeast and southwest corners of the building. -(9600 S.F. total.)

Roofing: No Membrane.

Flashing: None

Insulation: None

Drainage: Runoff washes onto roofs below.

Sub-structure: Same as roof "A".

Penetrations: Mortar joints filled horizontally and vertically with an elastomeric sealant, showing various signs of failure (cracks, in some cases, with vegetation growing out of them).

Accessibility: Good. Step up from roofs "O" and "P".

ROOF "V"

Description: One 4150 S.F. flat roof over the gallery at the north edge of Main Hall.

Roofing: Same as roof "A". Extreme deterioration.

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "C". (2 drains serving all of roof "V" - 4150 S.F. and portion of roof "Y" - 15000 S.F.)

Sub-structure: Same as roof "A".

Penetrations: Minimum. One access hatch and miscellaneous vents.

Accessibility: Very poor. Permanent ladder through access hatch from below appears unsound, presently safest route appears to be by climbing over roof "Y" from roof "W".

Miscellaneous: Considerable trash collected.

ROOFS "W"

Description: Two 1000 S.F. flat roofs at southeast and southwest corners of the Main Hall. (2000 S.F. total)

Roofing: Same of roof "A".

Flashing: Same as roof "A".

Insulation: None

Drainage: Same as roof "C". Overflow possible onto roof "I" below if single drain fails to function.

Sub-structure: Same as roof "A".

Penetrations: Minimum. One access hatch and miscellaneous vents.

Accessibility: Very poor. Permanent ladders through access hatches from below appear unsound. Presently safest access is by temporary metal ladder strapped to permanent ladder accessing the southwest

roof "W". The southeast roof "W" is only accessible from roof "Y" or from the high parapet connecting it to the southwest roof "W".

ROOF "X"

Description: Two 1875 S.F. low sloped, hip roofed cap stones over tank room at east and west side of main portico entrance to Main Hall - (3750 S.F. total.)

Roofing: No membrane.

Flashing: Same as roof "A".

Insulation: None

Drainage: Runoff washes onto roofs below.

Sub-structure: Same as roof "A".

Penetrations: Eyebolt for anchoring cable draped across roof "Y".

Accessibility: Poor. Same as roof "W".

ROOF "Y"

Description: One 45,000 S.F. barrel vaulted roof over the Main Hall.

Roofing: Same as roof "S". Deterioration much worse.

Flashing: Same as roof "A".

Insulation: None

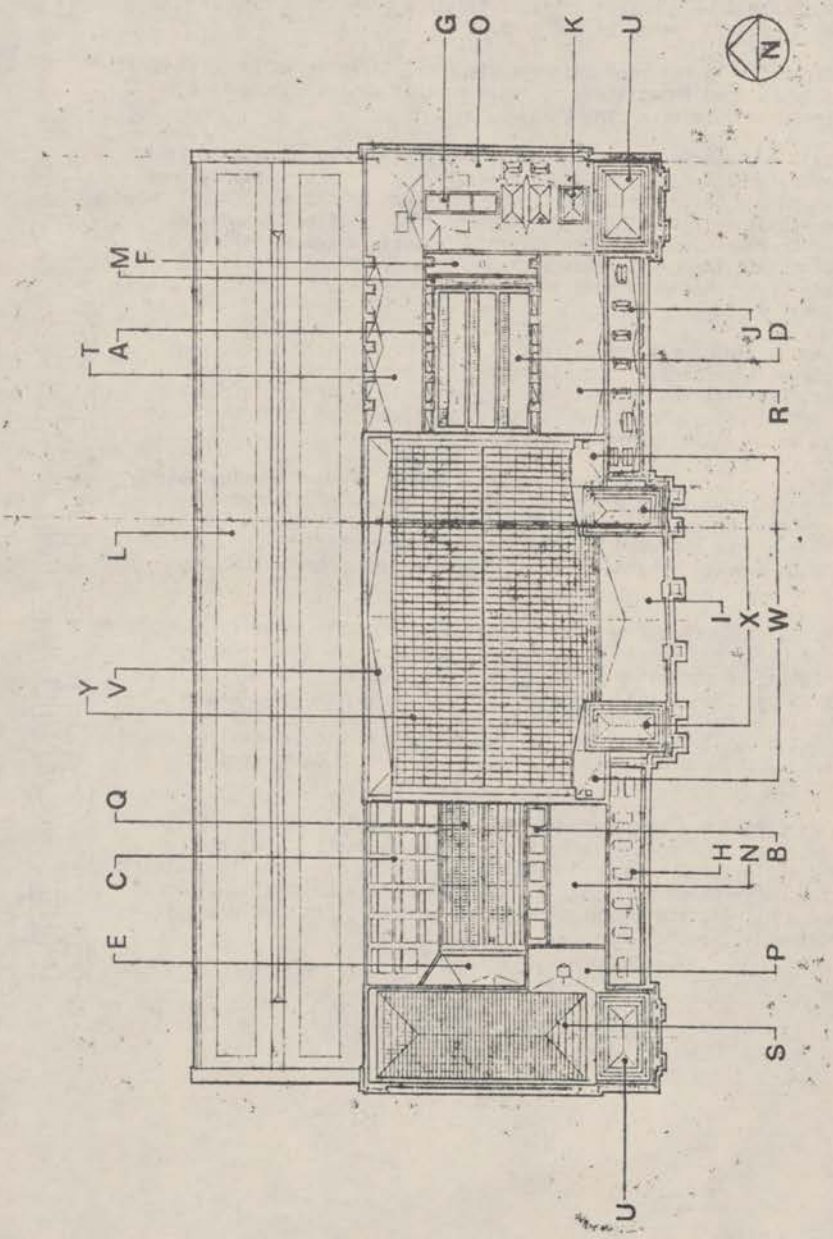
Drainage: Runoff washes onto roofs "V", "W", and "X".

Sub-structure: Comprised of reinforced concrete roof planks supported on a structural steel purlin and truss system clear spanning the area below.

Penetrations: None

Accessibility: Poor. Presently only access to roof is from southwest roof "W", by climbing (essentially unaided.)

KEY PLAN



ALL ROOFS

All clogged roof drains and drain screens, where possible, should be unclogged to allow standing water that will drain to do so.

All standing water that will not drain, should be removed from the roof. During the interim period until effective roof repairs can be made, measures should be adopted to insure that new ponds that form are not allowed to remain over extended periods of time.

Existing holes in the roof and roof structures identified in this report should be patched immediately to avoid further damage to the building until permanent repairs can be made.

All trash and debris collected on the roofs should be removed to avoid further potential for obstructing drainage. An effective maintenance program should be initiated to avoid recurrence of the problem. If one already exists, it should be re-evaluated for its effectiveness and adhered to more closely in the future. In certain areas the lack of safe access to the roofs makes such maintenance very difficult. A complete study should be made and efforts undertaken to correct these problems.

A survey should be made of all existing items presently on the roof, including all mechanical and electrical equipment, vents, access hatches, "fire stands" stacks, piping, conduit, ladders, stairs, etc., to determine which should remain (or be replaced) and which should be removed as potential sources of leaks.*

All existing skylights over office areas are in need of considerable repair and appear to be either coated with asphalt or blocked by hung ceilings below. A survey should be made to determine which are desirable, to be replaced by newer, more energy efficient units, and which should be eliminated to remove existing and potential sources of leaks.*

A thorough study should be made of the overall condition of the building's exterior walls and measures taken to correct problem areas that are contributing to the water penetration. Included as concerns should be the existing masonry and stonework (parapet caps, cornices, window sills, etc.), related mortar joints, and the various openings in the walls (windows, louvers, vents, mechanical units, etc.). Obvious problems, such as broken windows or louvers, should be corrected immediately.*

Although beyond the scope of this report to pinpoint exact damage that may have been done to the integrity of the building's structure, certain indications have been noted that suggest, at least, the potential that serious problems exists. A study should be made to establish, as best possible, the extent of any such damage. This should be given priority attention.*

In response to certain observations made apparent by and documented in this report's analysis of the roof drains, a comprehensive survey should be made of the building's complete drainage system to identify additional problem areas that may exist.*

The accelerating rate of deterioration of the roof's condition, as witnessed by the increasing presence of water in the building's interior, makes expeditious action upon these recommendations of utmost importance. It cannot be over-emphasized that the building is in serious trouble and while, apparently still salvageable at this point, no guarantees are possible as to how long this will remain true.

* These surveys should be completed prior to the beginning of the next phase of this project. Immediate direction should be provided by the National Park Service.

ROOFS "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K","M","N", "O", "P", "R", "T", "V", "W"

Roofing: The existing multiple layers of roofing membranes should be removed down to the top layer of the sub-structure (the concrete topping slab), and a new roofing system applied. Consideration should be given to the use of a conventional four ply built-up roofing membrane over a layer of insulation (see "Insulation" below). Various guarantees are available for this system.

Flashing: The existing copper, one-piece flashing, and other miscellaneous flashings, should be removed and replaced. Due to the number and complexity of conditions over the various roofs, each should be addressed individually and resolved according to the unique problems it presents.

Insulation: A heating cost study [3], conducted in March, 1977, indicated that insulation would help reduce the heating costs of the building's operation. As per those recommendations, sufficient insulation should be provided to meet a minimum "R" factor of 10.0.

Drainage: The existing roof drains should be removed and replaced with new drains to restore adequate capacity for removal of water from the roofs. At roofs "A", "G" and "K" (each with only one drain) the new drains should provide an overflow capacity to avoid water collecting past a certain point should the normal removal functions be blocked. At roofs "C", "I", "R", "V" and "W" the present demand requires additional capacity in excess of what can be gained by replacing existing drains with new ones. This capacity will have to be met with additional drains, possibly in new locations. In these areas, as well as in scattered cases where ponding has been noticed, the present roof pitch may require reworking.

Sub-structure: After removal of the existing roofing, the exposed sub-structure should be allowed to dry thoroughly, inspected for damage (see "General Comments") and repaired to insure a firm substrate prior to subsequent roofing.

Penetrations: In areas where existing penetrations are determined to be removed, the resulting openings in the roof should be closed and patched prior to the application of the new roofing. Where these penetrations are particularly large (skylights, hatches, etc.), care should be exercised to insure compatibility of the closure with the adjacent sub-structure.

Accessibility: To insure that a proper maintenance effort is possible, access to the roofs should be upgraded. Where determined necessary (see "General Comments") new hatches and/or ladders should be installed. Roofs "V" and "W" require particular attention.

Miscellaneous: The cause for the almost constant stream of water onto roof "I" from the adjacent water tanks overflow valves should be identified and corrected immediately.

ROOF "L"

Roofing: The existing multiple layers of roofing membranes should be removed down to the top layer of the sub-structure (concrete plank or glass skylight) and a new roofing system applied. Consideration should be given to the use of a single ply membrane system applied directly to the sub-structure. Various guarantees are available for these systems.

Flashing: The existing copper flashing should be removed and replaced with flashing compatible with the selected roofing system. The copper built-in gutters should be removed, where possible, and replaced with roofing membrane (see above) and roof drains.

Insulation: To achieve the minimum "R" factor of 10.0 recommended [3], sufficient insulation should be provided. The best location for this would appear to be at the level of the inner "decorative ceiling" vault rather than at the roof.

Drainage: The existing roof drains should be removed and replaced with new drains. Since the required capacity is beyond that which can be provided by the replacement drains, new drains, possibly in new locations, should be installed. In certain areas, particularly the southeast and southwest corners, the new and/or replacement drains should be of the type with additional overflow capacity as discussed for roofs "A", "G" and "K". The roof's pitch may require reworking to accommodate the new drains.

Sub-structure: After removal of the existing roofing membranes, the exposed sub-structure should be allowed to dry thoroughly and any damage repaired. The exposed skylight glass should be removed and the resulting openings closed in a manner to provide a firm surface, compatible with the existing sub-structure, for subsequent roofing.

Penetrations: The existing continuous "roof vent structure" should be removed and replaced with a new structure to restore the venting function presently negated by the ribbed fiberglass panels. This new structure could also be utilized to provide the additional light penetration into the "attic space" made necessary by the loss of the skylighted roof areas. With little additional effort, in the form of routine cleaning, this could also permit the restoration of function of the glazed portions of the inner "decorative ceiling vault."

Accessibility: Necessary measures, in the form of cat-walks and/or ladders, should be taken to provide safe access to various points on the roof. Access to the top of the vault and along the southeast edge require particular attention.

ROOF "Q"

Flashing: The "rubber" weatherstripping closures, or gaskets, should be removed and replaced. To insure continued good performance of the roof, a custom fabricator of such "greenhouse" style structures should be consulted to examine the roof in greater detail.

ROOF "S"

Roofing: The existing asphalt coated reinforced precast concrete roofing tiles and the various layers of roofing membranes should be removed down to the top layer of the sub-structure and replaced with a new roofing system. Consideration should be given to the use of a conventional four ply built-up roofing membrane applied over a layer of insulation. 10, 15 and 20 year bonds are available for such systems.

Flashing: Existing flashing should be located and inspected to determine its condition and effectiveness. If not acceptable it should be removed and replaced with flashing compatible with the roofing system selected.

Insulation: Sufficient rigid insulation should be provided to meet the desired minimum "R" factor of 10.0.

Drainage: Should be maintained as is.

Sub-structure: The sub-structure should be allowed to dry thoroughly after removal of the existing roofing materials. Prior to reroofing, any damaged areas should be repaired to insure a secure, smooth substrate condition.

ROOFS "U" AND "X"

Roofing: The exposed stone surfaces should be protected from the weather by appropriate roofing and flashing. The minimum effort to be considered should be to coat the surfaces, both vertical and horizontal, with a water repellent, grind out the existing mortar joints and reseal with appropriate sealant and back up materials.

Flashing: The existing flashing should be removed and replaced with new flashing more effectively detailed and compatible with the roofing system utilized on the surrounding roofs.

Drainage: Should be maintained as is.

Penetrations: Holes left by penetrations (such as "eyebolts") to be removed should be repaired and patched prior to the application of any roofing.

ROOF "Y"

Roofing: The existing asphalt coated reinforced precast concrete roofing tiles and the various layers of roofing membranes should be removed down to the concrete planks and replaced with a new roofing system. Due to the importance of this roof to the overall appearance of the building, particularly from Louisiana Avenue, the new roofing system should be selected in terms of its visual impact as well as its weatherproofing functions. Therefore, ways of restoring the roof to its original appearance, to preserve the existing aspects of scale and texture, should be considered. Among these should be the use of new precast concrete tiles, similar to the existing, in combination with a new roofing membrane, of either a single ply or sprayed-on asphaltic type.

Flashing: The existing flashing should be located and inspected to determine its condition and its effectiveness. If unacceptable, it should be removed and replaced with new flashing compatible with the roofing system selected.

Insulation: Sufficient insulation should be provided to meet the desired "R" factor of 10.0^{3}. The best location would seem to be at the level of the inner "decorative ceiling" vault.

Drainage: Should be maintained as is.

Penetrations: Damage to the sub-structure due to the removal of any penetrations should be repaired prior to any subsequent roofing.

Accessibility: Measures should be taken to provide safe access to the top of the vault from the roofs below.

NEW CONSTRUCTION

o Roofing:		
. Conventional Built-up roofing at roofs "A"-"P", "R", "S", "T", "V" and "W"	149,050 SF @ $3.50/SF..	$521,675
. Single ply roofing membrane at roof "L"	85,000 SF @ $4.00/SF..	340,000
. Water Repellent Coating at Roofs "U" and "X"	13,000 SF @ $4.00/SF..	52,000
. Sprayed-on Asphaltic Coating over new concrete tiles at Roof "Y"	45,000SF @ $11.50/SF..	517,500
o Flashing:		
. New copper (24 oz.) flashing...	24,000 SF @ $5.00/SF ...	120,000
. Grind and seal mortar joints at roofs "U" and "X" with new sealant and backing material....	2,500 L.F. @ $2.50/LF..	6,250
. Regasket Roof "Q"	8,800 SF @ $2.00/SF..	16,600
o Insulation:		
. New insulation to "R" factor of 10.0	203,050 SF @ $2.50/SF...	507,625
o Drainage:		
. Replace existing roof drains....	99 items @ $1,250/ea..	123,750
. New roof drains	22 items @ $1,500/ea..	33,000
o Sub-Structure		
. Close large openings at Roofs "C", "K" and "O"	20 items @ $1,500/ea..	30,000
. Close small openings at Roofs "G", "H", "J", "O", and "R"	23 items @ $750/ea...	17,250
. Close openings at Roof "L"	45,000 SF @ $5.00/SF..	225,000
o Penetrations:		
. New "Ridge Vent" and skylight structure at Roof "L"	7,200 SF @ $25/SF...	180,000
	Sub Total	$2,690,650

COST ANALYSIS

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DEMOLITION

o Roofing:

. Strip Roofs "A" - "P", "R", "T", "V" and "W" to sub-structure	149,050 SF @ $2.50/SF	372,625
. Strip Roofs "S" and "Y" to sub-structure	54,000 SF @ $4.00/SF	216,000

o Flashing:

. Remove all existing flashing	24,000 SF @ $.50/SF	12,000

o Drainage:

. Remove all existing roof drains	99 items @ $250/ea	24,750

o Penetrations:

. Remove existing large skylights at roofs "C", "K" and "O"	20 items @ $2500/ea	50,000
. Remove existing small skylights at roofs "G", "H", "J", "O", and "R"	23 items @ $1000 items/ea	23,000
. Remove existing skylights at Roof "L"	45,000 SF @ $10/SF	450,000
. Remove existing "Ridge Vent" structure at Roof "L"	600 LF @ $50/LF	30,000
	Sub Total	$1,178,375

Total . Demolition and New Construction		3,869,025
Add . General Conditions	4%	154,761
. Design Contingency	15%	603,568
. Escalation	15%	694,103*
. Contractor's Overhead	15%	798,219
. Contractor's Profit	10%	611,968
Total . Statement of Probable Costs		$6,731,644**

* Assumes work to proceed no later than May, 1980 and be completed by May, 1981

** Does not include:
Repair of any structural damage.
Repair of any interior damage.
Repair of any part of drainage system except roof drains.
Repair of exterior walls.
Repair or replacement of any roof top structures (skylights, hatches, etc.).
Repair or removal of any miscellaneous rooftop items (vents, HVAC equipment, etc.).
Repair or replacement of any ladders, (catwalks, access hatches, etc.)

CONSULTANTS

1. Technical

   Werner H. Gumpertz; Simpson Gumpertz & Heger, Inc.; Principal

FOOTNOTES

1. The authorization for this report is contract No. CX-2000-9-0060 dated July 16, 1979 . The contract is between the VVKR Partnership and the United States of America, National Park Service.

2. Roofing System Study (VVKR Partnership, U.S. Department of Interior, National Park Serice - contract No. CX-2000-6-0028 dated 30 August 1976) dated May 1977.

3. Steam Cost Study (VVKR Partnership, U.S. Department of Interior, National Park Service - contract No. CX-2000-6-0028 dated 30 August 1976) dated March 1977.

ROOF
REPAIRS
STUDY
SUPPLEMENT

NATIONAL VISITOR CENTER
WASHINGTON, D.C.

U.S. DEPARTMENT
OF THE INTERIOR

NATIONAL PARK SERVICE

PROJECT NO. 76060.12
MARCH 1980

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It is the purpose of this study to establish and document the condition of certain existing aspects of the roofs at the National Visitor Center in Washington, D.C., to determine what problems relevant to water penetration are inherent in those conditions and to propose solutions to those problems. This investigation is a response to recommendations made in a "Roof Repairs Study" prepared by VVKR Incorporated in November, 1979 and is intended to supplement that study. The scope of the work included:

- o On-site surveys of the following items:
  - . Structural problems that might impact roof repairs.
  - . Drainage system beyond the roof drains.
  - . Roof penetrations (skylights, hatches, mechanical equipment, etc.)
  - . Parapets and parapet caps bordering the roofs.
  - . Walls bordering the roofs and all penetrations in those walls.
  - . Means of access to the roofs.
- o Preparation of drawings*, photographs and written descriptions to document the data collected.
- o Development of solutions to the problems identified.
- o Development of a hierarchy of roofs in terms of priority of repairs.
- o Preparation of a statement of probable cost to update the cost analysis presented in the November, 1979 study.

The authorization for this study is Amendment No. 1 to Contract No. CX-2000-9-0060, dated 18 January, 1980. This contract is between the VVKR Partnership and the National Park Service of the United States Department of the Interior.

* The drawings and photographs are included under separate cover as part of this report.

ALL ROOFS

- STRUCTURE: While there appears to be no serious damage to the structural systems of any of the roofs, some rusting is apparent on certain steel framing members. Although not presently enough to compromise the structural integrity of the steel and not necessary to prevent water penetration, it is advisable to remove the rust and protect the exposed steel with paint at the time other repairs are made to the roofs. It should be recognized that problems may arise in the process of making the other repairs which are impossible to foresee at this time.

- DRAINAGE SYSTEM: Although several of the roofs appear to be adequately piped, requiring only new drains, as recommended in the November, 1979 study, many are in need of increased capacity within the piping beyond the drains. This is particularly true at the horizontal runs. Where accessible, these pipes should be removed and repaired, taking special care to protect areas below (the ceiling above the "main hall" for example). Where accessibility to these pipes is extremely difficult, (below the basement, for example), replacement may not be possible. In these cases, certain low areas may be required to tolerate some short term standing water during severe storms. This can be accommodated if recognized when the other repairs are made.

- ROOF PENETRATION: There is a wide variety of size and type of items penetrating the various roofs. These range from small pipe vents to large skylights that leave room for little else on a roof. In general, the following is advisable:

  . All existing skylights, except those at roof "D", should be removed. All are deteriorated and leaking, and with few exceptions, serve no function. Although no programmed use for the spaces below presently exists to justify these units, it is advisable that the roof openings be closed in a way to permit ease of re-opening if a future need should arise. Those units to remain (roof "D") should receive routine maintenance (cleaning, etc.) on a regular basis.

  . All existing mechanical and electrical equipment to remain should be temporarily removed, where required to execute the other repairs, and reinstalled on new curbs. All other items should be permanently removed and the resulting roof openings closed to provide a firm, smooth substrate for new roofing membranes.

  . All existing pipe vents (VTR) which are presently in use should be maintained. Those presently not in use should be capped and maintained for possible future use.

  . All existing wood access hatches and curbs should be removed and replaced with new units.

  . The remains of the former "fire stands" should be removed and the resulting openings closed.*

* A comprehensive survey of the roofs' fire protection needs was not a part of this study.

- o PARAPETS AND PARAPET CAPS: The parapet surrounding the various roofs appear to be of two types:
  - . Brick capped with a "ribbed terra cotta" coping. The joints of which have, typically, failed.
  - . Brick faced with stone on one side and capped with a stone coping, also with joints that have failed.

  Portions of each of these, at various locations, have received coatings of bitumen, apparently as part of a previous roofing effort. The worst problems exist, however, where the coating has been applied over the exposed brick of the latter type. In these locations, water, apparently penetrating through the failed coping joints, has deteriorated the brick and mortar irreparably. Where this has occurred, it is advisable to remove the coping along with a wythe or two, as required, of masonry and to adequately flash the base and head of the parapet when new masonry is installed. The joints in the coping should be saw cut and cleaned sufficiently to insure adherence of new sealant prior to being restored to the parapet. Elsewhere, the existing "ribbed terra cotta" coping should be removed and replaced with metal parapet caps. Bitumen coatings should be abrasive blasted from all brick to remain.

- o WALLS AND WALL PENETRATIONS: The walls are typically brick, with a glazed finish in some locations and faced with stone where visible from public areas around the building. Generally the glazed finish occurs around low, "light well" roofs such as roofs "A" and some portions of roof "L" where it abuts the main building.

  Although the brick and stone appears, generally, to be in good condition, the walls should be repointed, at the time other roof repairs are made, to correct existing and potential problems inherent in the building's age. At the same time, all miscellaneous abandoned wall mounted mechanical or electrical equipment, as well as the structural supports for abandoned equipment suspended above the roofs, should be removed and the resulting holes patched in a watertight manner. The "ribbed terra cotta" sills found at all typical windows show signs of water penetration at the joints and should be removed and replaced with a one piece sill flashed integrally with the roof membrane where particularly close to a roof surface. In addition, all broken windows should be repaired and all boarded over windows restored or closed in a watertight manner.

- o ACCESSIBILITY: The degree of possible access varies widely from roof to roof, from those most easily accessed by a door or a window from a public or semi-public area (roofs "E", "J", or "N", for example) to those which, by any standards of safety, are essentially inaccessible. (Roof "A" and the top of roof "L", for example). It is advisable to eliminate this deterrent to regular maintenance by providing OSHA approved, permanent, wall mounted ladders to all the roofs. These ladders should replace the existing non-OSHA approved ladders. New and replacement ladders should be located to develop a systematic approach to accessing the roofs from the building in three main zones. Within this

system, as many of the roofs as possible at the east end of the building should be accessed from one point, as would the roofs at the west end and the central area. Roof "L" would be accessed at the east end from roof "C".*

- PRIORITY: To establish a hierarchy of priorities for the necessary repairs, the various aspects of the roofs, which have been the main focus of this report as well as the November, 1979 study, were qualified as criteria in the following manner:
  - STRUCTURE: Has the structure been damaged by water penetration? How serious is the damage? Does it require attention prior to the other roof repairs?
  - FLASHING AND ROOF MEMBRANE: How badly deteriorated are the existing membranes? How extensive are the flashing problems?
  - DRAINAGE SYSTEMS: What is the nature and degree of the inadequacy?
  - ROOF PENETRATIONS: How many items are abandoned? How badly deteriorated are they? How many should be removed? How many should be maintained or restored?
  - PARAPETS AND PARAPET CAPS: What is the condition of the brick or stone? The mortar? The coping?
  - ACCESSIBILITY: How accessible is the roof for routine maintenance or repairs?
  - SIZE: How much area does the roof cover?

  These criteria were applied to each roof and comparisons were generated in terms of:
  - The impact of each roof's individual problems on other roofs.
  - The physical characteristics and uses of the spaces below.
  - The potential for further problems if the required repairs are not made immediately.
  - The rate of apparent acceleration of the problems.

  A hierarchy of roofs, in order of priority for repairs, is advisable as follows:***

* Access to the various roofs has been studied only from a maintenance standpoint.

** A complete survey of the building's interiors was considered beyond the scope of this study. In certain obvious areas, however, it was a consideration.

***This is not intended as a recommendation for phasing the work. The priorities are only a response to various levels of urgency.

PRIORITY LIST

1. Roof "I"
2. Roof "V"
3. Roof "W"
4. Roof "Y"
5. Roof "G"
6. Roof "L"
7. Roof "A"
8. Roof "D"
9. Roof "R"
10. Roof "O"
11. Roof "T"
12. Roof "K"
13. Roof "B"
14. Roof "N"
15. Roof "J"
16. Roof "H"
17. Roof "C"
18. Roof "F"
19. Roof "M"
20. Roof "E"
21. Roof "P"
22. Roof "Q"
23. Roofs "U" & "X"
24. Roof "S"

ROOF "A_1 - A_{10}"

- o STRUCTURE: There are no apparent problems requiring attention prior to roofway repairs.
- o DRAINAGE SYSTEM: The existing piping (one 4" leader each) is adequate for the area served.
- o ROOF PENETRATIONS:

  A_1 - A "utility set" of mechanical equipment serving a ladies toilet below.

  A_4 - A mechanical unit serving the adjacent NVC staff offices is supported on a wood platform above the roof.

  A_6 - A_{10} - Each with one abandoned and deteriorating sheet metal "transfer duct" connecting the space below the roof with the space adjacent to the roof.

  A_2, A_3 & A_5 - None.

In addition to the above listed penetrations, adjacent to and between the individual roofs are abandoned brick "chimneys" which previously served to vent the train tunnels below. Several of these are topped with abandoned exhaust fans or rusting metal caps penetrated with miscellaneous pipe vents (VTR). One has been used in the past as a chimney for a fireplace in an area which previously housed a YMCA facility

- o PARAPETS AND PARAPET CAPS: At higher roofs above.
- o WALLS AND WALL PENETRATIONS:

  A_1-A_{10} - Typically, the adjacent walls are brick with a glazed face and a considerable amount of surface mounted electrical conduit, some of which is abandoned.

  A_6-A_{10} - The north walls are penetrated by the sheet metal "transfer ducts" mentioned above.

- o ACCESSIBILITY: By temporary ladder from Roof "D" above. There is no permanent, fixed means of access.

ROOF "B"

- o STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- o DRAINAGE SYSTEM: The existing piping (three 4" leaders) is adequate for the area served.

- o ROOF PENETRATIONS: Several "housings" for lighting fixtures which have been made non-functional by a suspended GWB ceiling inserted below. These "housings" are located over roof openings covered originally by skylights. Each is penetrated by a gravity ventilator.

- o PARAPETS AND PARAPET CAPS: At higher roofs above.

- o WALLS AND WALL PENETRATIONS: The adjacent walls are typically brick with a glazed face to approximately 6' above the roof. Each wall is penetrated by wood framed windows with "terra cotta" sills and head trim. The north and south walls are in need of patching where penetrated every 6' by steel beams supporting mechanical equipment above. The south and west walls exhibit some miscellaneous surface mounted abandoned electrical conduit and a sheet metal duct up to a goose neck above Roof "N".

- o ACCESSIBILITY: By a window from a toilet adjacent to the west wall. There is no permanent, fixed means of access.

ROOF "C"

- o STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- o DRAINAGE SYSTEM: The existing piping (three 4" leaders) is heavily loaded but within acceptable limits.

- o ROOF PENETRATIONS: The roof houses 17 abandoned "sawtooth" skylights, the glazed portions of which have been removed and replaced with "ribbed" metal panels. A suspended GWB ceiling has been inserted below several (those immediately adjacent to the Roof "Q") and several others have been obstructed from below by large mechanical ducts. In addition, there are also several penetrations along the north edge of the roof to accommodate roof drainage and structure from adjacent Roof "L".

- o PARAPETS AND PARAPET CAPS: The high brick parapet which bounds the north edge of the roof is totally coated with bitumen (flashing, counterflashing and brick) up to the "ribbed terra cotta" coping. The base of the parapet is penetrated by Roof "L" drainage and structure as mentioned above.

- o WALLS AND WALL PENETRATIONS: The adjacent south wall (below Roof "Q") is brick with a glazed finish and is penetrated by several windows with "ribbed terra cotta" sills (quite close to the roof level) and head trim. Two of the windows are penetrated with abandoned, louvered exhaust fans. (Previously served the "Hall of States.")

- o ACCESSIBILITY: By a permanent, fixed ladder from Roof "E" or Roof "L" above. The ladder from Roof "E" does not meet OSHA Standards (lacks a required cage enclosure).

ROOF "D"

- STRUCTURE: There are no apparent problems requiring attention prior to roofing repairs.
- DRAINAGE SYSTEM: The existing piping (four 4" leaders, two of which also serve Roof "M" and possibly Roof "F") are heavily loaded but still within acceptable limits.
- ROOF PENETRATIONS: There are three "sawtooth" skylights continuous across the width of the roof which presently function to light the "National Bookstore" below. Although they generally appear watertight there are several holes in the brick sidewalls where piping and/or conduit has been removed and the glazed portions appear in need of general maintenance (cleaning, etc.). The top of the brick sidewalls are typically capped with "ribbed terra cotta" coping.
- PARAPETS AND PARAPET CAPS: At higher roofs above.
- WALLS AND WALL PENETRATIONS: The adjacent walls are typically brick with a glazed finish on the north and south walls (to a point slightly above the "light wells" at Roofs "A_1-A_{10}"). The walls are penetrated with several wood framed windows with "ribbed terra cotta" sills and head trim. A number of these windows are broken and/or boarded over from within the adjacent spaces. The north, south and east walls each exhibit a considerable amount of functioning as well as abandoned electrical conduit (much of it related to the mechanical equipment on Roof "M" above.)
- ACCESSIBILITY: By a window from a corridor adjacent to the east wall.

ROOF "E"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The existing piping connecting the roof drains to the main leader from Roof "S" is adequate for the area served. The leader from Roof "S", however, is undersized, by present standards. This could result in ponding on this roof.
- ROOF PENETRATIONS: There are two wood hatches on wood curbs for access to the lights in the west entry portal and to the void above the portal dome below, two stairs for access to the spaces below adjacent Roofs "Q" and "S" (one placed loosely and one set in pitch pockets) and some miscellaneous pipe vents (VTR).
- PARAPETS AND PARAPET CAPS: The brick parapet which bounds the north edge of the roof is approximately 4'-0" high and capped with "ribbed terra cotta" coping.

- WALLS AND WALL PENETRATIONS: The east, west and south walls are typically brick. The east wall is completely faced with copper panels. The west wall is penetrated by windows with "ribbed terra cotta" sills and head trim, and the south wall by a wood door. The south and west walls exhibit miscellaneous surface mounted abandoned electrical equipment.

- ACCESSIBILITY: By a door from a toilet adjacent to the south wall and by a permanent, fixed ladder from Roof "C" below. The ladder does not meet OSHA Standards.

ROOF "F"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The existing piping (four 4" leaders, two of which also serve Roof "M" and possibly Roof "F") are heavily loaded but still within acceptable limits.

- ROOF PENETRATIONS: An abandoned sheet metal goose neck, exhaust and hood which served a former kitchen area below, miscellaneous pipe vents (VTR) and two tunnel exhaust stacks. Evidence visible from below of former skylights removed and openings closed.

- PARAPETS AND PARAPET CAPS: At higher roofs above.

- WALLS AND WALL PENETRATIONS: The adjacent walls are typically brick with a glazed finish penetrated by wood framed windows with "ribbed terra cotta" sills and head trim. Several windows are broken and/or boarded over from within. The east and west walls are penetrated by two tiers of steel beams spanning across the roof at two points. There is a considerable amount of miscellaneous electrical equipment and conduit on the west wall associated with the mechanical equipment on Roof "M" above.

- ACCESSIBILITY: By a window from adjacent toilets or office space.

ROOF "G"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The piping which apparently connects to the leader serving Roofs "M", "F" and part of "D", is adequate except for the horizontal portion below the basement slab which may be as much as 100% undersized.

- ROOF PENETRATIONS: There are four considerably deteriorated and badly leaking skylights which are also a security problem for the present museum storage space below.

- PARAPETS AND PARAPET CAPS: At higher roof above. See Roof "O".

- WALLS AND WALL PENETRATIONS: All four adjacent walls are brick with two tiers of abandoned electrical conduit and wood framed windows with "ribbed terra cotta" sills and head trim. Several of the windows are broken and/or boarded over from within.

- ACCESSIBILITY: By a window from adjacent toilets or office spaces. (Windows presently are nailed shut.)

ROOF "H"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The horizontal piping, which connects to a leader also serving portions of Roofs "W", "X", "I", and "Y", is undersized and may be piped through a P trap.

- ROOF PENETRATIONS: Several sheet metal "housings" have been constructed over existing curbs to close roof openings in locations where original skylight units have been removed. The sheet metal of several is in need of repair.

- PARAPETS AND PARAPET CAPS: Due to the buildup of successive roofing and patching efforts over the years, the continuous bottom member of the balustrade along the south edge of the roof is, at present, nearly flush with the roof level adjacent to the drains. This condition allows water to wash over the edge of the roof onto the main building elevation.

- WALLS AND WALL PENETRATIONS: The brick walls along the north, east and west edges of the roof are faced with stone with no penetrations.

- ACCESSIBILITY: By a temporary ladder from Roof "P" above. There is no permanent, fixed means of access.

ROOF "I"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs. There is damage evident to the cement domes over the main entry portals below, but none directly related to the roof.

- DRAINAGE SYSTEM: The horizontal piping is undersized for the area served and may be piped throug a P trap.

- ROOF PENETRATIONS: There are three wood hatches on wood curbs for accessing the light fixtures over the main entry portals below, and two pipe supports serving the mechanical equipment above.

- PARAPETS AND PARAPET CAPS: At higher roofs above.

- WALLS AND WALL PENETRATIONS: The "false facade" brick wall along the south edge is faced with stone on the main elevation side and capped with stone coping. The brick walls along the north, east and west edges are penetrated by several wood framed windows with "ribbed terra cotta" sills and head trim. Two of these windows have been converted to doors and one houses a functioning exhaust fan. The east and west walls are also penetrated by overflow pipes serving the water storage tanks in the adjacent "tank rooms," and the south wall by steel beams supporting a large mechanical unit above the roof.

- ACCESSIBILITY: By a window which has been converted into a door from the tank rooms adjacent to the east and west walls.

ROOF "J"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The horizontal piping is undersized for the area served and may be piped through P traps.

- ROOF PENETRATIONS: There are eight severely deteriorated and leaking skylights, several of which have been made non-functional by suspended acoustic tile ceilings and mechanical ductwork inserted below. There are also several pieces of functioning mechanical equipment with related electrical conduit, and a considerable amount of abandoned conduit and piping for previously removed equipment.

- PARAPETS AND PARAPET CAPS: Similar to Roof "H".

- WALLS AND WALL PENETRATIONS: The brick walls along the north, east and west edges of the roof are typically faced with stone. The north wall is penetrated by several wood framed windows with "ribbed terra cotta" sills and head trim, several of which are broken and/or boarded over from within, and a considerable amount of electrical equipment and conduit.

- ACCESSIBILITY: By a window from a corridor adjacent to the north wall.

ROOF "K"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

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- DRAINAGE SYSTEM: The existing piping appears to be adequate for the area served.

- ROOF PENETRATION: One large, deteriorated and leaking skylight, coated with a bituminous substance, covers nearly the entire roof and is penetrated by a large central exhaust stack and several small sheet metal housings for former mechanical equipment.

- PARAPETS AND PARAPET CAPS: At higher roof above. See Roof "O".

- WALLS AND WALL PENETRATIONS: The adjacent walls are typically brick and are penetrated by wood framed windows with "ribbed terra cotta" sills and head trim or by louvers. The north and east walls are penetrated by steel beams supporting mechanical equipment above the roof, and the north and south walls by steel tubes spanning the roof to provide lateral support for the exhaust stack from below.

- ACCESSIBILITY: By windows from spaces adjacent to the east or west walls.

ROOF "L"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The existing piping appears to be adequate for the areas served with the exception of the piping below the basement slab which appears to be substantially undersized.

- ROOF PENETRATIONS: There are three small sheet metal goose neck exhausts serving the "snack bar" area below and several structural roof truss penetrations flashed with copper at regular intervals along the south edge of the roof.

- PARAPETS AND PARAPET CAPS: A low brick parapet with stone coping runs the entire length of the roof along the north edge. The brick is typically coated with bitumen on the roof side of the parapet.

- WALLS AND WALL PENETRATIONS: The south edge of the roof abuts the rear (north) face of the main building along its its entire length. The condition of abuttment varies but the walls are typically brick (some with a glazed finish in low areas adjacent to the main hall). There are a number of broken and/or boarded over wood-framed windows, particularly toward the east end, with "ribbed terra cotta" sills and heat trim. In several low areas near the east end of the roof, several original windows have been bricked closed or converted to louvers for the adjacent mechanical equipment space.

- ACCESSIBILITY: By a permanent ladder from Roof "C" below. The ladder does not meet OSHA Standards. There is no permanent or temporary access to the top of the vault. (The use of the steel cables draped from the top of the vault requires walking on hidden glass skylights.)

ROOF "M"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The existing piping is heavily loaded but adequate for the area served.
- ROOF PENETRATIONS: There are two abandoned mechanical units with related electrical equipment and conduit which served a former kitchen area below.
- PARAPETS AND PARAPET CAPS: The low brick parapets along the east and west edges of the roof are covered on the roof side by bitumen-coated copper flashing which tucks beneath the "ribbed terra cotta" coping. The mechanical units mentioned above are supported by steel beams spanning across the roof from the east to west parapets. The steel angles bolted to the top of the parapet serve as guardrails at each side of the units.
- WALLS AND WALL PENETRATIONS: The brick walls along the north and south edges of the roof are penetrated by wood-framed windows with "ribbed terra cotta" sills and head trim. The tunnel exhaust vent at the north wall is penetrated by an abandoned and deteriorated metal louver.
- ACCESSIBILITY: By a window from corridors adjacent to the north and south walls.

ROOF "N"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The existing piping is adequate for the area served.
- ROOF PENETRATIONS: One sheet metal mechanical ventilator and hood, one deteriorating wood support for abandoned electrical conduit and miscellaneous pipe vents (VTR).
- PARAPETS AND PARAPET CAPS: The high brick parapet which bounds the south edge of the roof is faced with stone on its opposite side and capped with stone coping. There are several abandoned lighting fixtures with related electrical conduit mounted high on its surface. The low brick parapet at the north edge is capped with "ribbed terra cotta" coping.
- WALLS AND WALL PENETRATIONS: The west edge of the roof is bounded by a brick wall penetrated by several wood-framed windows with "ribbed terra cotta" sills and head trim. The brick wall at the east edge has a wood door converted from an original window.

- ACCESSIBILITY: By a door from a corridor adjacent to the east wall and by a permanent ladder from Roof "P" above. The ladder does not meet OSHA Standards.

ROOF "O"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The horizontal piping, which connects to a leader also serving Roofs "R" and "U", is undersized and may be piped through a P trap.
- ROOF PENETRATIONS: This roof has the greatest number and variety of penetrations. There is an abandoned and deteriorating metal "shed" structure which apparently served a former "steam elevator" in some capacity, several abandoned and/or deteriorating skylights which are either coated with an asphaltic material or penetrated by mechanical vent or both, several miscellaneous large mechanical vents and small pipe vents (VTR) and one convex disc of unidentifiable origin and purpose.
- PARAPETS AND PARAPET CAPS: The low brick parapets at all edges are typically coated with bitumen on the roof side. At the east and south edges, and that part of the west edge adjacent to Roof "K", the opposite is faced with stone and the stone coping is partially coated with bitumen. The top of the east parapet is penetrated by three building lights and related electrical conduit. The coping elsewhere is "ribbed terra cotta."
- WALLS AND WALL PENETRATIONS: None
- ACCESSIBILITY: By a permanent, fixed ladder from Roof "J" below. The ladder does not meet OSHA Standards.

ROOF "P"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The horizontal piping, which also serves Roofs "S" and "U", is undersized and installed in such a way that it interferes with headroom in the spaces below Roof "S" and "U".
- ROOF PENETRATIONS: Centered on the roof is an "overide" housing for an elevator below. This housing is penetrated by two metal exhaust stacks. Elsewhere there are deteriorating wood supports and a standpipe for an abandoned "fire station," a large exhaust stack and a miscellaneous VTR.

- PARAPETS AND PARAPET CAPS: The low brick parapets at the north, south and east edges are typically flashed with bitumen-coated copper on the roof side. The south parapet is faced with stone on the opposite side. The electrical wiring for the building lights on Roof "U" is loosely draped over the stone parapet above. At the north and east edges the coping is "ribbed terra cotta."

- WALLS AND WALL PENETRATIONS: None.

- ACCESSIBILITY: By a permanent, fixed ladder from Roof "N" below. The ladder does meet OSHA Standards.

ROOF "Q"

- STRUCTURE: There are no apparent problems.

- DRAINAGE SYSTEM: The drainage is delivered to Roofs "B" and "C" by way of gutters and downspouts.

- ROOF PENETRATIONS: There is a continuous ridge ventilator running the length of the roof.

- PARAPETS AND PARAPET CAPS: The brick wall at the west edge of the roof is capped with "ribbed terra cotta" coping.

- WALLS AND WALL PENETRATIONS: The east end of the roof abuts the brick and stone end wall for the main barrel vault (Roof "Y"). There are no penetrations.

- ACCESSIBILITY: While the outer face of the roof is essentially inaccessible, the area directly below the roof is easily accessed by a door from the adjacent Roof "E".

ROOF "R"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The horizontal piping, which connects to a leader also serving Roofs "U" and "O", is undersized and may be piped through a P trap.

- ROOF PENETRATIONS: In the southeast corner of the roof is a deteriorating and leaking skylight over an elevator equipment area below. Elsewhere there are several deteriorating wood supports and a standpipe for an abandoned former "fire station" and miscellaneous small pipe vents (VTR).

- PARAPETS AND PARAPET CAPS: The low brick parapet at the north, south and east edges are typically coated with bitumen on the roof side. The south parapet is faced with stone on the opposite side, with stone coping that is also partially coated with bitumen. The north and east parapets are capped with "ribbed terra cotta" coping.

- WALLS AND WALL PENETRATIONS: The west edge of the roof is bounded by a brick wall faced with stone.

- ACCESSIBILITY: Directly from the adjacent Roof "O".

ROOF "S"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs. There appears to be some rusting of the steel substructure, but nothing of a critical nature.

- DRAINAGE SYSTEM: The drainage surface washes onto Roof "P".

- ROOF PENETRATIONS: The only penetration is one small pipe vent with an antenna attached.

- PARAPETS AND PARAPET CAPS: The low brick parapets at the north, east and west edges of the roof are flashed with bitumen-coated copper on the roof side. (Part of a lining system for the gutter formed by the raised roof and the parapets.) The coping at the east parapet is stone, partially coated with bitumen. Elsewhere the coping is "ribbed terra cotta."

- WALLS AND WALL PENETRATIONS: None

- ACCESSIBILITY: Directly from the adjacent Roof "P".

ROOF "T"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The horizontal piping, which connects to a leader also serving Roof "V", is undersized for the area served, and may be piped through a P trap.

- ROOF PENETRATIONS: There are several abandoned items on the roof including a sheet metal vent and hood, several deteriorating wood supports and a standpipe for a former "fire station," miscellaneous pipe vents, several tunnel exhaust stacks along the north and south edges and a mechanical unit, with related piping and conduit, which previously served a YMCA space below.

- PARAPETS AND PARAPET CAPS: The low brick parapets at the north and south edges of the roof are typically coated with bitumen on the roof side. The coping is typically "ribbed terra cotta."

- WALLS AND WALL PENETRATIONS: The west edge of the roof abuts the stone-faced brick end wall of Roof "Y" above.

- ACCESSIBILITY: Directly from the adjacent Roof "O".

ROOFS "U"

- STRUCTURE: Some rusting of the steel substructure is apparent. Although not presently critical, it is in need of repair.

- DRAINAGE SYSTEM: The drainage surface washes onto Roof "P".

- ROOF PENETRATIONS: None

- PARAPETS AND PARAPET CAPS: The south, east and west edges of the roofs are bounded by a low stone parapet which is covered on the roof side by bitumen-coated copper flashing. The bitumen coating also laps onto the top of the stone. Two building lights with related electrical conduit are mounted to the top of the parapet.

- WALLS AND WALL PENETRATIONS: None

- ACCESSIBILITY: Directly from the adjacent Roofs "O" or "P".

ROOF "Y"

- STRUCTURE: There is some rusting of the steel substructure visible from below, but no apparent problems requiring attention prior to roof repairs.

- DRAINAGE SYSTEM: The existing piping, which also serves part of Roof "Y", is undersized for the area served.

- ROOF PENETRATIONS: There is one wood hatch on a wood curb and several pipe vents (VTR).

- PARAPETS AND PARAPET CAPS: The brick parapets along the north, east and west edges are typically coated with bitumen on the roof side and faced with stone on the opposite side. The parapets become slightly higher and the stone coping wider at the east and west edges. The lower coping along the north parapet is also partially coated with bitumen and penetrated at two points by steel eyebolts which were apparently used to anchor steel cables draped over adjacent Roof "Y".

- WALLS AND WALL PENETRATIONS: None
- ACCESSIBILITY: By a wood access hatch and ladder from the space below. The ladder does not meet OSHA Standards.

ROOFS "W"

- STRUCTURE: There are no apparent problems requiring attention prior to roof repairs.
- DRAINAGE SYSTEM: The existing piping appears adequate for the area served.
- ROOF PENETRATIONS: Each roof is penetrated by a wood curb and access hatch and miscellaneous pipe vents (VTR).
- PARAPET AND PARAPET CAPS: The high brick parapets at two edges of the roofs are typically coated with bitumen on the roof side, faced with stone on the opposite side and capped with a stone coping. Where the bitumen was removed in test areas, the exposed brick and mortar appeared severely deteriorated from the water present in the parapet. The parapets are penetrated at one point on each roof to allow the "gutter" surrounding Roofs "X" to drain.
- WALLS AND WALL PENETRATIONS: None
- ACCESSIBILITY: Each roof is accessed by a wood hatch and ladder from the space below. The ladders do not meet OSHA Standards.

ROOFS "X"

- STRUCTURE: The steep substructure shows some signs of rusting, but the problems do not appear to require attention prior to roof repairs.
- DRAINAGE SYSTEM: The drainage surface washes onto Roofs "I" and "W".
- ROOF PENETRATIONS: The only penetration in each roof is by a steel eyebolt used formerly to anchor a steel cable draped across adjacent Roof "Y".
- PARAPETS AND PARAPET CAPS: Similar to Roofs "U".
- WALLS AND WALL PENETRATIONS: None
- ACCESSIBILITY: Directly from the adjacent Roofs "W".

ROOF "Y"

- STRUCTURE: Appears sound. There are no apparent problems that require attention prior to roof repairs.

- DRAINAGE SYSTEM: The drainage surface washes onto Roofs "V" and "W" and is delivered to Roof "I" by way of a gutter and downspouts.

- ROOF PENETRATIONS: None

- PARAPETS AND PARAPET CAPS: The brick end walls at the east and west edges of the roof are flashed to the underside of the stone coping with bitumen-coated copper on the roof side. The opposite side is faced with stone. The low brick parapet at the base of the vault, along the southern edge of the roof, is capped with "ribbed terra cotta" coping and flashed with copper to serve as a gutter for the roof drainage. The "gutter" is penetrated at each end by a scupper to drain the roof onto Roof "I" below. This parapet is also penetrated by steel beams supporting a mechanical unit above Roof "I".

- WALLS AND WALL PENETRATIONS: None

- ACCESSIBILITY: Directly from adjacent Roofs "W" or "V". Access to the top of the barrel is aided by deteriorating steel cables loosely draped across the roof.

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ROOFS "A_1 - A_{10}"

- o ROOF PENETRATIONS: The existing mechanical and electrical equipment in use at Roofs "A_1" and "A_4" should be temporarily removed to facilitate other necessary repairs and reinstalled on new curbs. The abandoned sheet metal "transfer ducts" at Roofs "A_6 - A_{10}" should be removed and the resulting roof openings closed. All abandoned vents, flues, metal covers, etc., should be removed from the adjacent abandoned tunnel vents and new metal covers installed to close them.

- o WALLS AND WALL PENETRATIONS: All abandoned conduit should be removed and the resulting holes in the walls patched as required. The wall openings left by the removed "transfer ducts" should be closed at Roofs "A_6 - A_{10}". The brick walls should be repointed.

- o ACCESSIBILITY: Permanent, OSHA approved, metal ladders should be installed for access to each roof from Roof "D".

- o PRIORITY: 7, with particular urgency placed on Roofs "A_6 - A_{10}" due to the condition of the existing "transfer ducts."

ROOF "B"

- o ROOF PENETRATIONS: The existing housings for abandoned lighting fixtures should be removed and the resulting openings closed in a way to allow the potential for reuse if a future need arises.

- o WALLS AND WALL PENETRATIONS: The adjacent walls should be repointed. All abandoned conduit and structural supports for previously removed mechanical equipment should be removed and the resulting holes in the walls patched. Where the equipment supported is in use, the walls should be patched, as required, at the bearing points. The "terra cotta" sills at the windows closest to the roof surface should be removed and replaced with new sills, flashed integrally with the new roof membrane.

- o ACCESSIBILITY: A permanent, OSHA approved, metal ladder should be installed for access from Roof "D".

- o PRIORITY: 13.

ROOF "C"

- o ROOF PENETRATIONS: The abandoned "sawtooth" skylights should be removed and the roof openings closed in a way to allow the potential for reuse if a future need arises.

- PARAPETS AND PARAPET CAPS: The brick should be cleaned of all bitumen and spot repairs made as necessary. The existing "terra cotta" coping should be removed and replaced with new metal coping.

- WALLS AND WALL PENETRATIONS: The adjacent walls should be repointed. The "terra cotta" sills of the windows at the south wall should be removed and replaced with new sills, flashed integrally with the new roof membrane. The abandoned louvered fans should be removed and the windows reglazed.

- ACCESSIBILITY: The existing permanent, metal ladder from Roof "L" should be maintained. An OSHA approved cage should be installed at the ladder to Roof "E".

- PRIORITY: 17.

- ROOF PENETRATIONS: The existing "sawtooth" skylights should be maintained. The brick end walls for the skylights should be repointed, existing holes should be patched and the existing "terra cotta" coping removed and replaced with new metal coping.

- WALLS AND WALL PENETRATIONS: The adjacent walls should be repointed. The "terra cotta" sills at the windows should be removed and replaced with new properly flashed sills. All broken windows should be repaired and all boarded over windows either restored or closed in a watertight manner. All abandoned conduit should be removed and the resulting holes in the walls patched.

- ACCESSIBILITY: The present means of access should be maintained.

- PRIORITY: 8, with particular urgency placed on repairs to the perimeter of the roof.

ROOF "E"

- ROOF PENETRATIONS: The wood curb and access hatch over the light fixture should be removed and replaced. The other curb and hatch should be removed and the roof opening closed. At the time of general repairs, the need for the existiny permanent metal stair to the space below Roof "S" should be reviewed. If needed, it should be maintained; if not, it should be removed and the pitch pockets abandoned.

- PARAPETS AND PARAPET CAPS: The brick should be repointed and the "terra cotta" coping removed and replaced with new metal coping.

- WALLS AND WALL PENETRATIONS: The brick walls should be repointed and all abandoned conduit should be removed and the resulting holes in the walls patched. The "terra cotta" sills at typical windows should be removed and replaced with new properly flashed sills. All broken windows should be repaired, and boarded over units either restored or closed in a watertight manner.

- ACCESSIBILITY: The existing means of access should be maintained.
- PRIORITY: 20.

ROOF "F"

- ROOF PENETRATIONS: All abandoned mechanical equipment should be removed and the resulting openings in the roof closed. The adjacent tunnel exhaust stacks should be capped with metal coverings.
- WALL AND WALL PENETRATIONS: The brick walls should be repointed. The abandoned conduit should be removed and the damage to the wall repaired. The "terra cotta" sills should be removed and replaced with new properly flashed sills. All broken windows should be repaired and the steel beams, spanning the roofs with no apparent purpose, should be removed and the walls patched.
- ACCESSIBILITY: The existing means of access should be maintained. In addition, a new OSHA approved, permanent, metal ladder should be provided for access from Roof "M".
- PRIORITY: 18.

ROOF "G"

- ROOF PENETRATIONS: The existing skylights should be removed and the roof openings closed in a way to allow ease of reuse in the future if a need arises.
- WALLS AND WALL PENETRATIONS: The existing brick walls should be repointed. The "terra cotta" sills at typical windows should be removed and replaced with new properly flashed sills. The abandoned conduit should be removed and the damaged walls patched. All broken windows should be repaired and boarded over windows either restored or closed in a watertight manner.
- ACCESSIBILITY: If practical, access should be restored from adjacent windows which are presently nailed shut. A new OSHA approved, permanent metal ladder should be installed for access from Roof "O".
- PRIORITY: 5.

ROOF "H"

- DRAINAGE SYSTEM: The existing horizontal piping and P traps should be removed and replaced with new piping of proper capacity.

- ROOF PENETRATIONS: The existing sheet metal housings should be removed and the roof openings closed in a way to allow reuse if a future need arises.

- PARAPETS AND PARAPET CAPS: The bottom portion of the ballustrade along the south border of the roof should be flashed in a way to prevent water spillover during heavy rains. This should be done at the time of other roof repairs.

- WALLS AND WALL PENETRATIONS: The brick and the stone walls should be repointed.

- ACCESSIBILITY: A permanent OSHA approved, metal ladder should be installed for access from Roof "P". An alternative would be a new access hatch and permanent ladder from the space below, if a wall mounted ladder is a visual problem.

- PRIORITY: 16.

ROOF "I"

- DRAINAGE SYSTEM: The existing horizontal piping and P traps should be removed and replaced with piping of proper capacity.

- ROOF PENETRATIONS: The wood curbs and hatches for access to the lights below whould be removed and replaced with new units. The pipe supports serving the mechanical unit above should be removed, if possible to support the equipment in a non-roof related way. If not, they should be flashed properly. The condensate from the mechanical unit above should be piped directly to the nearest roof drain.

- WALLS AND WALL PENETRATIONS: The existing brick walls should be repointed. The "terra cotta" sills at the typical windows should be removed and replaced with properly flashed sills. The window openings which have been converted to doors should either be restored as windows or the doors made watertight. The overflow pipes from the adjacent water tanks should be removed, if possible. Until then, they should be piped directly to a roof drain to avoid the present constant wash on the roof.

- ACCESSIBILITY: The existing means of access should be maintained, if possible. A new, OSHA approved, permanent metal ladder should be installed for access to the "gutter" at the adjacent Roof "Y".

- PRIORITY: 1.

ROOF "J"

- DRAINAGE SYSTEM: The existing horizontal piping and P traps should be removed and replaced with new piping of proper capacity.

- ROOF PENETRATIONS: The existing skylights should be removed and the roof openings closed in a way to allow reuse for future skylights if a need arises. The abandoned mechanical equipment and conduit should be removed and the roof openings closed.

- PARAPETS AND PARAPET CAPS: Same as Roof "H".

- WALLS AND WALL PENETRATIONS: The existing stone walls should be repointed. The abandoned conduit and miscellaneous electrical equipment should be removed and the walls patched. The "terra cotta" sills at typical windows should be removed and replaced with properly flashed sills.

- ACCESSIBILITY: The existing means of access by windows from an adjacent corridor should be maintained. The existing metal ladder from Roof "O" should be removed and replaced with a permanent, OSHA approved, metal ladder.

- PRIORITY: 15.

ROOF "K"

- ROOF PENETRATIONS: The existing skylight should be removed and the roof opening closed in a way to allow reuse for skylights in the future, if the need arises.

- WALLS AND WALL PENETRATIONS: The existing brick walls should be repointed. The "terra cotta" sills at typical windows should be removed and replaced with new, properly flashed sills. The bearing points for the steel beams should be patched and sealed watertight. The steel tubes supporting the abandoned exhaust stack should be removed and the walls patched.

- ACCESSIBILITY: The existing means of access by windows from adjacent spaces should be maintained, if possible. A new, OSHA approved, permanent metal ladder should be installed for access from Roof "O".

- PRIORITY: 12.

ROOF "L"

- DRAINAGE SYSTEM: There may be some short term, standing water at some of the lower levels of the roof during heavy storms, due to the inaccessibility, for replacement, of the horizontal piping below the basement slab.

- ROOF PENETRATIONS: The existing penetrations for the "snack bar" exhaust and roof structure should be maintained.

- PARAPET AND PARAPET CAPS: The bitumen should be stripped from the brick and the walls patched, as necessary. The stone coping should be removed, the joints ground and cleaned, as necessary, and reinstalled,with new joint sealant,over new proper wall flashing.

- WALLS AND WALL PENETRATIONS: The existing brick walls should be repointed. The "terra cotta" sills should be removed and replaced with new properly flashed sills. All broken windows should be repaired and all boarded over windows should be either restored or closed in a watertight manner. Abandoned louvers in existing windows should be removed and the windows restored, or new watertight louvers provided, if necessary

- ACCESSIBILITY: The existing means of access from Roof "C" should be maintained. A permanent OSHA approved catwalk should be installed along that portion of the "trough" area where it abuts the east end of the main building. "Slip cables,"movable at their points of connection, should be installed in sufficient number to allow access to all areas of the roof. Permanent, OSHA approved, metal ladders should be installed to access low areas (adjacent to proposed catwalk) not accessible, safely, by the cables.

- PRIORITY: 6, with particular urgency placed on the "trough" area adjacent to the main building along the length of the roof.

ROOF "M"

- ROOF PENETRATIONS: The abandoned mechanical equipment should be removed and the remaining roof openings closed.

- PARAPETS AND PARAPET CAPS: The bitumen coating should be cleaned from all surfaces. The "terra cotta" coping should be removed and replaced with new metal coping. The structural supports and the guardrails for the abandoned mechanical units should be removed.

- WALLS AND WALL PENETRATIONS: The existing brick walls should be repointed. The "terra cotta" sills at typical windows should be removed and replaced with new, properly flashed sills. The abandoned louver should be removed from the tunnel exhaust vent, and the hole in the wall patched.

- ACCESSIBILITY: The existing access by windows from adjacent corridors should be maintained. A new, permanent, OSHA approved,metal ladder should be installed for access from Roof "T".

- PRIORITY: 19.

- ROOF "N"

- ROOF PENETRATIONS: The existing abandoned ventilator and the abandoned

conduit and wood support should be removed and the remaining holes in the roof patched.

- o PARAPETS AND PARAPET CAPS: The existing exposed brick should be repointed. The stone coping should be removed, the joints ground and cleaned and reinstalled, with new joint sealant,over new proper wall flashing. The abandoned lighting fixtures and conduit should be removed and the walls patched. The "terra cotta" coping should be removed and replaced with new metal flashing.

- o WALLS AND WALL PENETRATIONS: The existing brick should be repointed. The "terra cotta" sills at typical windows should be removed and replaced with new properly flashed sills. The existing access door should either be restored as a window or made watertight.

- o ACCESSIBILITY: The existing access should be maintained.

- o PRIORITY: 14.

ROOF "O"

- o DRAINAGE SYSTEMS: The existing horizontal piping and P traps should be removed and replaced with new piping of adequate capacity.

- o ROOF PENETRATIONS: The abandoned "shed" structure should be removed and the remaining openings closed. The skylights should be removed and the roof openings closed in a way to allow reuse for skylights in the future, if a need arises. All other abandoned equipment, except pipe vents, should be removed and remaining openings closed. Functioning pipe vents should be maintained. Those not in use should be capped and maintained for possible future use. Functioning mechanical equipment should be temporarily removed,to facilitate the other repairs, and replaced on new curbs.

- o PARAPETS AND PARAPET CAPS: The bitumen coatings should be removed from all surfaces. The brick should be repaired as necessary and repointed where left exposed. The "terra cotta" copings should be removed and replaced by new metal copings. The stone coping should be removed, the joints ground and cleaned and reinstalled,with new joint sealant over new proper wall flashing. The building lights and related conduit should be temporarily removed, to facilitate other repairs, and reattached in a watertight manner.

- o ACCESSIBILITY: See Roof "J".

- o PRIORITY: 10.

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ROOF "P"

- o DRAINAGE SYSTEM: The horizontal runs should be removed and replaced with piping of proper capacity in accordance with the headroom needs of the spaces below.

- o ROOF PENETRATIONS: The elevator "override" housing and related exhaust stacks should remain. The existing standpipe and wood supports for the "fire station" should be removed and the roof openings closed. Functioning pipe vents should be maintained. Non-functioning pipe vents should be capped and maintained for future use.

- o PARAPETS AND PARAPET CAPS: The bitumen should be removed from all surfaces and the brick patched as necessary. The brick to remain exposed should be repointed. The "terra cotta" coping should be removed and replaced with new metal coping. The stone coping should be removed, the joints cleaned and ground and reinstalled over proper wall flashing, with new joint sealant.

- o ACCESSIBILITY: The existing access should be maintained.

- o PRIORITY: 21.

ROOF "Q"

- o PARAPETS AND PARAPET CAPS: The "terra cotta" coping should be removed and replaced with new metal coping.

- o ACCESSIBILITY: The existing access to the underside of the roof should be maintained. The existing door should be made watertight, if possible, and replaced, if not.

- o PRIORITY: 22.

ROOF "R"

- o DRAINAGE SYSTEM: The existing horizontal piping and P traps should be removed and replaced with new piping of proper capacity.

- o ROOF PENETRATIONS: The existing skylights should be removed and the roof opening closed. The wood supports and standpipe for the abandoned "fire station" should be removed and the holes patched.

- o PARAPETS AND PARAPET CAPS: The bitumen should be removed from all surfaces and the brick patched as necessary. The brick to remain exposed should be repointed. The "terra cotta" coping should be removed and replaced with new metal coping. The stone coping should be removed, the joints cleaned and ground and reinstalled over proper wall flashing, with new joint sealant.

- WALLS AND WALL PENETRATIONS: The brick and stone wall should be repointed.
- ACCESSIBILITY: The existing access should be maintained.
- PRIORITY: 9.

ROOF "S"

- STRUCTURE: The existing steel should be cleaned of all rust and painted.
- ROOF PENETRATIONS: The existing pipe vent should be maintained.
- PARAPETS AND PARAPET CAPS: See Roof "P"
- ACCESSIBILITY: The existing access should be maintained.
- PRIORITY: 24.

ROOF "T"

- DRAINAGE SYSTEM: The existing horizontal piping and P traps should be removed and replaced with new piping of proper capacity.
- ROOF PENETRATIONS: The abandoned mechanical hood, "fire station" wood supports and standpipe and mechanical unit with related conduit for the former YMCA should be removed and the roof openings closed. The abandoned train tunnel vents should be capped with new metal coverins.
- PARAPETS AND PARAPET CAPS: The bitumen coating should be removed from all surfaces. The brick should be patched, as required, and repointed where to be left exposed. The "terra cotta" coping should be removed and replaced with new metal coping.
- WALLS AND WALL PENETRATIONS: The brick and stone wall should be repointed.
- ACCESSIBILITY: The existing access from Roof "O" should be maintained. A new, permanent, OSHA approved,metal ladder should be installed for access from Roof "M".
- PRIORITY: 11.

ROOF "U"

- STRUCTURE: The existing steel should be cleaned of all rust and painted.

- PARAPETS AND PARAPET CAPS: The bitumen coating should be removed from all surfaces. The stone coping should be removed, the joints cleaned and ground and reinstalled with new joint sealant over proper flashing. The existing building lights and related conduit should be temporarily removed,to facilitate the other repairs,and reattached in a watertight way.

- ACCESSIBILITY: The existing access from Roofs "O" and "P" should be maintained.

- PRIORITY:

ROOF "V"

- STRUCTURE: The existing steel should be cleaned of all rust and painted.

- DRAINAGE SYSTEM: The existing piping should be removed and replaced with new piping of proper capacity.

- ROOF PENETRATIONS: The existing wood access hatch and curb should be removed and replaced. (See "Accessibility.")

- PARAPETS AND PARAPET CAPS: The bitumen coating should be removed from all surfaces. The brick should be patched as necessary and repointed where to be left exposed. The stone coping should be removed, the joints ground and cleaned and reinstalled,with new joint sealant,over proper flashing. The steel eyebolts should be removed and the remaining holes patches.

- ACCESSIBILITY: The existing wood access hatch, curb and ladder should be removed and replaced with a new OSHA approved, permanent metal ladder,curb and hatch. Access should also be provided by "slip cables" from Roof "Y".

- PRIORITY: 2.

ROOF "W"

- ROOF PENETRATIONS: The wood curb and access hatch should be removed and replaced. (See "Accessibility.")

- PARAPETS AND PARAPET CAPS: The bitumen should be removed from all surfaces. The stone coping and one or two widths of brick should be removed. New brick with proper base flashing should be installed. New stone coping joints should be ground and cleaned prior to the stone being reinstalled over proper flashing.

- ACCESSIBILITY: The existing wood access hatch, curb and ladder should be removed and replaced with a new OSHA approved, permanent metal ladder, curb and hatch.

- PRIORITY: 3.

ROOF "X"

- STRUCTURE: The existing steel should be cleaned of all rust and painted.

- ROOF PENETRATIONS: The existing steel eyebolts should be removed and the stone patched.

- PARAPETS AND PARAPET CAPS: See Roof "U".

- ACCESSIBILITY: The existing access from Roofs "W" should be maintained.

- PRIORITY: 23.

ROOF "Y"

- PARAPETS AND PARAPET CAPS: The "terra cotta" coping along the gutter at the south edge of the roof should be removed and replaced with new metal coping. The parapets and stone copings should be cleaned of all bitumen and the joints cleaned, ground, and properly resealed.

- ACCESSIBILITY: New "slip cables" should be installed, movable at the points of connection along the top of the barrel, to allow access to all areas of the roof.

- PRIORITY: 4.

STATEMENT OF PROBABLE CONSTRUCTION COSTS*

SUMMARY	DEMOLITION	NEW CONSTRUCTION
o ARCHITECTURAL:		
ROOFS "A_1-A_{10}"	$ 1,970	$ 13,440
"B"	6,199	16,900
"C"	25,133	66,868
"D"	2,090	33,120
"E"	3,056	9,460
"F"	2,744	8,450
"G"	1,609	5,406
"H"	7,342	22,823
"I"	9,515	29,770
"J"	6,972	22,886
"K"	1,348	4,529
"L"	628,365	1,015,520
"M"	1,235	6,130
"N"	8,106	22,050
"O"	21,695	65,298
"P"	3,835	11,747
"Q"	0	48,960
"R"	12,206	34,007
"S"	43,890	41,595
"T"	8,465	29,675
"U"	9,600	9,600
"V"	10,090	25,086
"W"	6,405	23,688
"X"	16,000	8,000
"Y" (Scheme "A")	254,265	493,775**
"Y" (Scheme "B")	254,265	2,905,585**
o HVAC: All Roofs	25,000	
o PLUMBING: All Roofs	47,775	83,311
o ELECTRICAL: All Roofs	16,544	

SUMMARY (cont'd)	DEMOLITION	NEW CONSTRUCTION
o INSULATION:		
. Roofs "A-K" & "M-X"		166,537
. Roofs "L" & "Y"		82,000
SUBTOTALS:		
. Scheme "A"	$ 1,181,454	$ 2,400,631
. Scheme "B"	$ 1,181,454	$ 4,812,441

		SCHEME "A"**	SCHEME "B"***
TOTAL	. Demolition & New Construction	$ 3,582,085	$ 5,993,895
ADD	. Difficulty & Protection*** 6%	214,925	359,634
	Subtotal	3,797,010	6,353,529
	. Interior Restoration****...2%	75,940	127,071
	Subtotal	3,872,950	6,480,600
	. General Conditions..... 4½%	174,283	291,627
	Subtotal	4,047,233	6,772,227
	. Design Contingency 15%	607,085	1,015,834
	Subtotal	4,654,318	7,788,061
	. Escalation 15%	698,148	1,168,209
	Subtotal	5,352,466	8,956,270
	. Contractor Overhead..... 15%	802,870	1,343,441
	Subtotal	6,155,336	10,299,711
	. Contractor Profit..... 10%	615,534	1,029,971
TOTAL****	. Scheme "A" Probable Cost	$ 6,770,870	
	. Scheme "B" Probable Cost		$11,329,682

* These costs include all the work recommended in this study and in the November 1979 study, except as noted elsewhere. The costs are based on the work being performed within a 12-month period from July 1, 1980 to July 1, 1981. If this period changes, the costs should be adjusted for inflation accordingly.

** Scheme "A" reflects the costs for replacing the existing condition at Roof "Y" with a terne coated stainless steel system utilizing 4" x 4" batten seams and standard manufacturer's details. All other roofs, excluding Roof "Q", are priced for a new inverted roofing system utilizing a single ply membrane.

*** Scheme "B" reflects the costs for restoring Roof "Y" to its original condition by providing new precast concrete units, identical to the existing, over a new waterproofing membrane. All other roofs are priced the same as Scheme "A".

****These totals are exclusive of the following work incidental to the roof repairs:

- Point all masonry and brick walls adjacent to and above the roofs..... $ 558,000
- Interior ceiling repairs (only at top floor levels, excluding any decorative plaster ceilings)..... $ 164,335
- Aesthetic repairs to the structure (rust, cracks in portal domes, wall discoloration)..... $ 87,454

Mr. YATES. What does the study show? Was that study done? Was the 1979 study performed by a competent engineer?

Mr. FISH. Yes, sir.

Mr. YATES. Who conducted the study?

Mr. FISH. A firm called VVKR and they are from Alexandria, Mr. Chairman.

Mr. YATES. Are they a competent firm?

Mr. FISH. Yes. We used them on other things.

Mr. YATES. What did that firm say it would cost to complete fixing the roof in 1979?

Mr. FISH. Eight million dollars.

Mr. YATES. What does the study show? I do not want your penciled figure.

Mr. FISH. The study shows $6.7 milllion.

Mr. YATES. Was this the cost to completely fix the roof?

Mr. FISH. Yes, sir.

Mr. YATES. What is the date of that study?

Mr. FISH. That is November of 1979.

Mr. YATES. November of 1979.

Mr. DICKS. Mr. Chairman, is the reason that the budget request was $2.9 million or thereabouts that the administration would only allow you to request that sum for this work?

Mr. FISH. It is all we were authorized. The authorization at that time would not allow us to really ask for any more.

Mr. YATES. Well, I find that hard to believe. Perhaps it is true that the authorization didn't do that but if your estimate in 1977 was for $1.5 million to completely repair the roof, just the increase of time would not raise it above another million dollars which is approximately the amount you are requesting 7 months later. Seven months later you asked for $2,360,000 to completely repair the roof based upon the original study, I assume, because the study in 1979 was not completed until 2 months after you came in and asked us for $2.3 million.

Mr. DICKS. Could anyone possibly think that you could repair the roof in a partial way? Is that what was anticipated, that you could do partial repairs?

Mr. FISH. Yes, that we would do partial repairs and the most needed repairs at that time.

Mr. DICKS. Did the engineers tell you you could do that and it would allow you at some later date to be able to finish the work?

Mr. FISH. Oh, yes, sir. There are many different roofs. It is not just one roof that you would take a part of and repair. Various portions of the entire structure would be repaired. The vaulted ceiling, the roof over the main hall, is but one integral roof. You would fix that and walk away and there would be other roofs to repair on the building.

Mr. YATES. What did the engineer in 1979 say would be done for $6 million? Do you have a list of what he said should be done?

Mr. FISH. Yes, sir.

Mr. YATES. All right. May I see it, please?

Mr. FISH. Yes.

Mr. YATES. Demolition and new construction—wait a minute. Roofs, insulation, all roofs. That is for all the roofs, $1 million.

Well, let's see what he says through here. Roof A1 to A10, there are no apparent problems requiring roof repairs.

Roof B, there are two apparent problems that apply to roof repairs.

Roof C, there are no apparent problems requiring attention prior to roof repairs.

Roof E, no apparent problems requiring attention prior to roof repairs.

This is apparently true for all the roofs.

Mr. DICKS. Would you show us where it says how much money is required for roof repairs?

Mr. YATES. The amount of roof repairs as shown by this report totals $2,905,000. It is not just for patching.

Mr. HITE. I believe on page 31, Mr. Chairman, there is a total of $6,731,000 which would be a statement of probable costs.

Mr. YATES. We show only $2,905,000.

Mr. FISH. The next page, Mr. Chairman. It may be that you have the supplemental report which was updated in March.

Mr. DICKS. Why was it not said here in the justification that there was a failure of authorization, that we needed the rest of the money but we don't have enough authorization? It does not say that here. It says this is the amount needed to complete roof repairs at the National Visitor Center.

Mr. FISH. Mr. Dicks, there was a bill going through the Congress, too. There had been a number of bills going through Congress.

Mr. DICKS. Why would you say, "complete needed roof repair?"

Mr. FISH. I can't answer that.

Mr. DICKS. Who wrote the justification?

Mr. FISH. I don't know.

Mr. DICKS. Can you find out and tell us for the record?

Mr. DICKENSON. We can certainly attempt to but there are people in the Office of the Interior and Office of Management and Budget.

Mr. DICKS. Let's find out who is responsible for misleading the committee. We thought we were giving enough money to take care of the problem.

Mr. DICKENSON. We will attempt to.

[The information follows:]

NATIONAL VISITOR CENTER ROOF REPAIRS

Regarding the budget amendment justifying the need for $2,360,000 for roof repairs of the National Visitor Center, it was not the intent of the National Park Service to mislead the Committee. The specifics of the justification on page 3 of the amendment indicates the exact work to be accomplished within the funds requested.

[COMMITTEE NOTE: Following are the narrative portions of the justification in support of the request for $2,360,000.]

DEPARTMENT OF THE INTERIOR—NATIONAL PARK SERVICE

1980 Budget appendix page	14-1039-0-1-303 Heading	1980 Request pending	1980 Proposed amendments	1980 Revised request
576	Construction (In the appropriation language under the above heading insert the following immediately after "expended:" *and $2,360,000 which shall be derived by transfer from the Road Construction Account*).	$85,358,000	$2,360,000	$87,718,000

Note.—The proposed budget amendment would provide funds to complete necessary repair work at the National Visitor Center. This proposal would increase 1980 outlays by $2.4 million.

JUSTIFICATION

NATIONAL VISITOR CENTER

Construction

Construction at the National Visitor Center was terminated in September 1976 due to insufficient funds to cover cost increases. As part of the original funding for the parking facility, an agreement was reached with the Department of Transportation, Urban Mass Transportation Administration, to provide approximately $8.1 million for the mass transit aspects of the project. All work under this agreement was not completed when the project was terminated in 1976. We have now received $6.8 million from DOT as their payment for the work completed. Unobligated funds authorized for the National Visitor Center in the amount of $3,110,533 had been held for possible defrayment of the mass transit costs had DOT payment not been made. These funds were originally obligated for work under contract at the time of termination of construction. Because all contract work was not completed, these funds have now been deobligated, making them available for other high priority construction items.

Since deobligation of the funds, a little over $200,000 has been obligated for installation of two elevators to provide handicapped access to the lower rails and for replacement of cables which provides bracing for the top chords of the steel trusses to insure stabilization of the garage structure. Of the remaining unobligated balance of $2.9 million, $541,616 is in the "Construction" appropriation—Buildings and Utilities Activity and $2,360,000 is in the "Road Construction" appropriation.

The existing roofing, drainage system, and flashing at the Center have deteriorated to the extent that it has caused water leakage problems over large areas. The office space on the third floor is not useable due to deterioration of the interior finishes. The recently completed refinished ceilings in the concourse and the public portion of the main building have been subject to water damage caused by these leaks. There is also some rusting which has occurred on some of the structural members which support the framing of the monitor on the concourse roof.

In addition to the loss of useable space and the affects on the aesthetics of the interior finishes in the public spaces, there is a safety consideration. Portions of the building may have to be closed to protect the general public because of the possibility of material falling from the ceiling from great heights.

Roof repairs

Approval of this request to transfer $2,360,000 from the Road Construction Appropriation to the Construction account plus the $541,616 balance in the Construction account will allow the National Park Service to complete needed roof repairs at the National Visitor Center. Work to be accomplished is as follows:

	Estimate
1. Main Building Roof (Flat Roof Areas, Stone Roofs, Sky Lights and Roof Openings, Insulation, Flashing, New Drainage System)	$800,000
2. Main Building Vault Roof (Estimate is based on Main Hall vaulted roof being repaired at the same time as the vaulted roof over the concourse)	700,000
3. Concourse Roof (Vaulted Roof Area, Monitor Roof and Walls, Insulation, Flashing, Special Drainage Between Concourse and Main Building, Structural Repairs Due to Water Damage, New Drainage System)	1,250,000
4. Amount for unforeseen items	151,616
Total Estimate	2,901,616

Mr. HITE. Mr. Chairman, Mr. Dicks, it is obvious and I am sure it was not the intention of the Department to mislead the Committee with the justification. I will tell you gentlemen this, that I don't believe that the plans for the roof were ever more than patch work with the money that was appropriated beginning with the $16 million. The roof was a problem the day I got into this project which was about 1973.

Mr. DICKS. It still is.

Mr. HITE. Yes, sir. I do not believe that there has ever been enough money within the total context of this project to really attack the roof problem and I cannot tell you on behalf of these

gentlemen and myself why we didn't attack the roof first except to look in retrospect. Retrospection is not always believable but the emphasis when we started this project was on building a parking facility and a minimal amount of money was put into the refurbishment of the Center. The $5 million was originally apportioned out of that $16 million and I know it would not permit total reconstruction and shoring up of that roof.

Mr. DICKS. Does it not seem in hindsight to be a serious mistake?

Mr. HITE. Yes, sir.

Mr. DICKS. Why does it have to have a Visitor Center or an audio visual experience if the roof is leaking?

Mr. HITE. It does not do anything, but I am not trying to lay the blame on anybody, including myself, Dick Hite. There is enough to go around. We were not in the initial planning phase of the transformation of the Union Station to a Visitor Center. When money was appropriated by this Committee in the amount of $8.68 million to put a Federal infusion of funds in there, the emphasis created by President Nixon's proclamation was to get something done by the Bicentennial. By then we were up to 1972 and we had not put a shovel into the earth at that point, nobody had, nothing had been done.

When the late Rogers Morton, who was then Secretary of the Interior, called a meeting of the interested parties we were in a near panic stage to get something done on the project. It is stupid when you look back at it, I will concede that, but we had so many parties involved and then it was further exacerbated by the emergence of Amtrak as a presumably viable passenger train entity which brought DOT into the picture. I am laying it out as honestly as I can, the collapse of Penn Central and the problems that are engendered turf-wise between two Departments with different motives all played a part.

By the time 1975 rolled around I testified before this Committee on at least two separate occasions with the Deputy Secretary of Transportation, John Barnum, and our Assistant Secretary for Fish and Wildlife and Parks, Nathaniel Reed, and at that time we had developed a plan to turn over the facility to the Department of Transportation and have a more modest Visitor Center. We have been in a constant state of flux and I just wanted to describe that to you not as an excuse but just as a portrayal of the situation.

Mr. DICKS. Complete this a little bit. Then there was a new administration. What happened then?

Mr. HITE. When Secretary Andrus came on the scene he and Secretary Adams of the Transportation Department again met. He again agreed that Transportation would take the facility. I think I then tesified for a third time before the Committee to the effect we attempted to negotiate an agreement with the Department of Transportation which would have given us approximately one-third of the Visitor Center. I may be wrong about that. One-third of the station as a Visitor Center and we never could agree on the rental payments and the cost.

Mr. YATES. Let's look at the hearings for this year, the year 1981, page 448 of Part 2, in May of this year:

Mr. YATES. Let's talk about another one of your favorites, the National Visitor Center. What is the status of the legislation?

Mr. FISH. That current legislation, Mr. Chairman, which would put the train operation back into the old concourse area, leave the Visitor Center in the main hall, and leave the jurisdiction under the Department of the Interior; also complete the parking facility and the ramps, has cleared the House Public Works Committee.

Mr. YATES. Well, I have the impression that the Department of Transportation is going to have some jurisdiction over the Visitor Center. Is my impression wrong?

Mr. FISH. They would have the jurisdiction over the actual move of the train facilities back into the old concourse area. However, the jurisdiction for the facility would remain with the Interior Department.

Mr. YATES. The legislation is already reported out of the committee.

Is Amtrak making any money available for it?

Mr. FISH. No, sir, there would be funding from the Northeast Corridor Improvement Project of about $23 million, and the bill, itself, is $36.1 million.

Mr. YATES. Would that be in addition to the $36.1 million?

Mr. FISH. That is correct; yes, Mr. Chairman.

Mr. YATES. So at that point $23 million from the Northeast Corridor Improvement Project and $36.1 million from the Congress.

Mr. YATES. What happens if the legislation doesn't pass?

Mr. FISH. If the legislation doesn't pass, Mr. Chairman, the building is deteriorating, the roof has a very serious leak, and we may have to close. We have a problem with the permanent heating source there, the terminal company is eliminating their steam operation. We are going to have to find an alternate heating source if that doesn't come about.

The parking structure which is half completed is held together with wires and temporary bracing, and that requires annual maintenance of about $50,000 to $100,000. Also, if the legslation is not passed, the Federal Government will have to continue lease payments for 21 years at $3.5 million a year.

Mr. YATES. That is still out of the Government's obligation.

Mr. FISH. Yes, sir.

Mr. YATES. What happens at the end of the 23 years? Do you turn the property back to the railroad? Or do we own it?

Mr. FISH. We own it for a dollar, I think is the way it was written, Mr. Chairman. It would be, of course, a very valuable piece of property.

Mr. YATES. Without a very valuable building on it.

Mr. FISH. That is correct, Mr. Chairman. It is deteriorating fast.

Mr. YATES. We didn't know how fast it was deteriorating, did we?

Mr. YATES. Well, what is the total? Does the $36 million provide enough assurance that no other funding will be necessary?

Mr. FISH. We think so, combined with the Northeast Corridor Improvement Project funds.

Mr. YATES. Well, let's hope you are right.

Mr. YATES. Are you aware of the proposal by the Pennsylvania Railroad or Penn Central to try to come to an agreement to buy back the lease?

Mr. FISH. Yes, sir.

Mr. YATES. They propose to sell it to the Government. I don't know what we are going to do with the building but we do know the Government does have an obligation now to pay $3.5 million a year for the next 20 years.

Mr. FISH. About 20 years, yes, sir.

PENN CENTRAL CORPORATION

Mr. YATES. So the total of that is 20 times $3.5 million, $70 million.

Now Mr. Shipman of Penn Central is here. Is the offer of the Penn Central still pertinent?

Mr. SHIPMAN. Yes, sir.

Mr. YATES. Tell us what that is, please.

Mr. SHIPMAN. Yes, sir.

I am Harvey Shipman and I am with the Penn Central Corporation.

I would like to preface anything I say by telling you that I do not speak for the Baltimore Realty Company. We have tried to contact them today but without success.

Mr. YATES. Why is that important?

Mr. SHIPMAN. Because they are the joint owners.

Mr. YATES. With Penn Central?

Mr. SHIPMAN. Yes. It is the Penn Realty Company and the Baltimore Realty Company.

Mr. YATES. Have they joined with you in the previous offer?

Mr. SHIPMAN. Yes, they have, sir. That is correct. The original offer was made in July of 1980 and we propose that the Government purchase interest in the National Visitor Center for consideration comprised of $2,275,000 in cash at closing and an additional $2,275,000 on the anniversary date for each of the five subsequent years. The Government's aggregate investment over those six years would be $13,650,000. The result would be in a gross rental saving to the United States Government of $42,449,000 or a net cumulative cash savings remaining, 21 years of the lease at approximately $28,800,000.

Now with the time change that figure has changed and assuming a closing in June of 1981, the cumulative cash savings would now be $27,814,000.

Mr. YATES. And that offer is still pending?

Mr. SHIPMAN. Yes, sir. Our offer is still very, very firm but I cannot address myself to the Baltimore Realty Company.

Mr. YATES. Okay. It is probable they will still maintain a business? You don't know the answer to that. We will have to find the answer to that.

Mr. SHIPMAN. We will have the answer probably tomorrow.

Mr. YATES. Savings to the Government would be not only in total but annual as well.

Mr. SHIPMAN. Yes, sir.

Mr. YATES. Annually the Government is required to pay you $3.5 million.

Mr. SHIPMAN. It is $3.338 million.

Mr. YATES. And you are willing to accept the $2,275,000.

Mr. SHIPMAN. Yes, sir.

Mr. YATES. Annually for six years.

Mr. SHIPMAN. Or we will be willing to accept a one-time cash payment which, of course, will again save the Government additional funds.

Mr. YATES. How much would that be?

Mr. SHIPMAN. I can't tell you.

Mr. DICKS. Why are you willing to make this very generous offer?

Mr. YATES. Why do you ask?

Mr. DICKS. It just does not look like a gift horse to me.

Mr. SHIPMAN. I can't respond to that. I was never part of the negotiations with the Interior Department.

Mr. YATES. All right.

Mr. DICKS. There must be a reason for the offer.

Mr. SHIPMAN. We pay taxes on it.

Mr. YATES. That is point one.

Point two, the Penn Central is disposing of all of its property.

Mr. SHIPMAN. Yes sir. That is correct.

Mr. YATES. And that is the primary reason.

Mr. SHIPMAN. We are no longer in the transportation business.

Mr. YATES. Is there anything else you should tell us about this offer that we don't know?

Mr. SHIPMAN. No, sir, but I will furnish the committee an additional letter when those figures are put together as to what the savings would be. It was a one-time savings and any other figures that are——

Mr. YATES. Also, what you would accept for a one payment cash deal.

Mr. SHIPMAN. Yes, sir.

Mr. YATES. Also tell us whether the Baltimore Realty Company joins you.

Mr. SHIPMAN. Yes, we will tell you that.

Mr. YATES. Thank you.

Mr. SHIPMAN. Thank you, sir.

Mr. YATES. We appreciate your coming here.

Mr. SHIPMAN. It was my pleasure.

[The letter follows:]

VICTOR PALMIERI AND COMPANY INCORPORATED
PENN CENTRAL PROPERTIES DIVISION

March 3, 1981

The Honorable James Watt
Secretary of the Interior
United States Department of the Interior
Washington, D.C. 20240

Dear Secretary Watt:

Over the past several months we have had discussions with the Department of the Interior regarding the possible interest of the United States Government ("Government") in exercising its option to purchase the ownership interests of Terminal Realty Penn Company ("Realty Penn") and of Terminal Realty Baltimore Company ("Realty Baltimore") in the National Visitor Center ("Center"), located in Washington, D.C. In this regard, the Penn Central Properties Division of Victor Palmieri and Company Incorporated ("VPCO") has been acting on behalf of The Penn Central Corporation ("PCC"), the owner of all of the outstanding shares of Realty Penn. Realty Baltimore is a wholly owned subsidiary of the Baltimore and Ohio Railroad Company ("B&O"). Pursuant to an agreement approved by the United States District Court for the Eastern District of Pennsylvania, VPCO acts as Manager of the nonoperating real estate (the "Property") owned by PCC and many of its subsidiaries (collectively, the "PCC Companies"). As Manager, VPCO is responsible for preserving and enhancing the value of the Property and for its development, sale and leasing. In addition, VPCO has obtained the B&O's approval to submit this letter to you on its behalf.

It is the purpose of this letter to bring to your attention our continuing interest in the Government's acquisition of Realty Penn's and Realty Baltimore's ownership interests ("Interests") in the Center. Specifically, we would propose that the Government purchase the Interests in the Center for a consideration comprised of $2,275,000 cash at closing and an additional $2,275,000 on the anniversary date of the closing for each of five subsequent years. The Government's aggregate investment over a six year period would be $13,650,000 which would result in gross rental savings of approximately $41,464,000 or a net cumulative cash savings over the remaining 21 years of the lease of approximately $27,814,000. The gross savings would be incurred by elimination of the rental payments to Realty Penn and Realty Baltimore of approximately $3,338,000

per year and certain estimated tax savings partially offset by the Government's assumption of the first mortgage payments of approximately $1,419,000 per year. The cumulative cash savings to the Government over the lease term would result in an estimated internal rate of return on its investment of approximately 36%. More importantly, it is estimated that in 1981, the incremental cash outlay by the Government (assuming a June 30, 1981 closing) would be only $1,290,000 and, on an annualized basis, range between only approximately $246,000 and $288,000 over the remaining five years of the proposed purchase payments after which substantial annual cash savings would accrue to the Government.

As an alternative consideration to a six year term transaction which would generate additional cash savings to the Government, we would propose an all cash price of $11 million--an additional $2,650,000 cash savings over the term of the lease compared with the six year payments transaction. Of course, because of the earlier cash outlay the internal rate of return on the Government's investment would be reduced to 22%. The details of the financial terms of the alternative transactions are shown in two exhibits attached to this letter. With the conveyance of Realty Penn's and Realty Baltimore's fee interests in the property to the Government, the owners would be relieved of all past, present and future obligations under the lease and related agreements between Realty Penn and Realty Baltimore and the United States of America. The above terms would be subject to development of a definitive agreement among the parties.

We would be prepared to discuss this proposal with you in greater detail, after you have had an opportunity to consider the Government's continuing interest in acquisition of the Center. I might mention to you that the proposals outlined above received the formal approval of PCC's Board of Directors and preliminary approval from B&O Management, subject to certain B&O Board approvals. VPCO, on PCC's behalf, and B&O are prepared to enter into discussions with the Department of the Interior, regarding Government acquisition, at any time. Please understand that with regard to any such discussions and/or negotiations, VPCO acts entirely on behalf of the PCC Companies. Any agreement with respect to the property under negotiation must be made with the PCC Companies and all obligations under or related to such an agreement will be obligations of the PCC Companies, and not of VPCO. As you can understand, VPCO makes no warranties or representations with respect to any of the Property or to the contemplated transaction, and the only such warranties and representations that are made are those made by the PCC Companies and contained in a written agreement executed by the PCC Companies.

We would be happy to supply your staff with any additional information that you may require or meet with you at any time regarding this matter.

Sincerely,

Peter A. Martosella
Executive Vice President

Attachment

cc: M. Jack Fish (National Park Service)
James Ermer (Baltimore & Ohio Railroad Company)

EXHIBIT I

Victor Palmieri and Company Incorporated
Penn Central Properties Division

SAVINGS TO UNITED STATES GOVERNMENT BY PURCHASE OF OWNERS' INTERESTS IN NATIONAL VISITOR CENTER[a]

June Closing

Year	Rental Savings: Owners' Rent[b]	Rental Savings: Tax Rent	Rental Savings: Total	Purchase Payments	Annual Net Cash Savings
6 mos - 1981	$ 959.7	$ 25.0	$ 984.7	$ (2,275.0)	$(1,290.3)
1982	1,919.3	68.0	1,987.3	(2,275.0)	(287.7)
1983	1,919.3	77.7	1,997.0	(2,275.0)	(278.0)
1984	1,919.3	87.9	2,007.2	(2,275.0)	(267.8)
1985	1,919.3	98.6	2,017.9	(2,275.0)	(257.1)
1986	1,919.3	109.9	2,029.2	(2,275.0)	(245.8)
1987	1,919.3	121.6	2,040.9		2,040.9
1988	1,919.3	134.0	2,053.3		2,053.3
1989	1,919.3	147.0	2,066.3		2,066.3
1990	1,919.3	160.7	2,080.0		2,080.0
1991	1,919.3	162.0	2,081.3		2,081.3
1992	1,919.3	162.0	2,081.3		2,081.3
1993	1,919.3	162.0	2,081.3		2,081.3
1994	1,919.3	162.0	2,081.3		2,081.3
1995	1,919.3	162.0	2,081.3		2,081.3
1996	1,919.3	162.0	2,081.3		2,081.3
1997	1,919.3	162.0	2,081.3		2,081.3
1998	1,919.3	162.0	2,081.3		2,081.3
1999	1,919.3	162.0	2,081.3		2,081.3
2000	1,919.3	162.0	2,081.3		2,081.3
8 mos - 2001	1,279.5	108.0	1,387.5		1,387.5
TOTALS	$38,705.9	$2,758.4	$41,464.3	$(13,650.0)	$27,814.3[c]

a) Reference - Lease for Real Property Between Terminal Realty Baltimore Company and Terminal Realty Penn Company and the United States of America

b) Calculated as follows:

Current rental payment excluding tax bill	$3,338,136/yr
1st mortgage payment after purchase	1,418,856/yr
Net Annual Base Rent Reduction	$1,919,280/yr

c) Cumulative cash savings over lease term resulting in internal rate of return on investment of approximately 36%

EXHIBIT II

Victor Palmieri and Company Incorporated
Penn Central Properties Division

SAVINGS TO UNITED STATES GOVERNMENT BY PURCHASE OF OWNERS' INTERESTS IN NATIONAL VISITOR CENTER[a]

June Closing

Year	Rental Savings: Owners' Rent[b]	Rental Savings: Tax Rent	Rental Savings: Total	Purchase Payments	Annual Net Cash Savings
6 mos - 1981	$ 959.7	$ 25.0	$ 984.7	$(11,000.0)	$(10,015.3)
1982	1,919.3	68.0	1,987.3		1,987.3
1983	1,919.3	77.7	1,997.0		1,997.0
1984	1,919.3	87.9	2,007.2		2,007.2
1985	1,919.3	98.6	2,017.9		2,017.9
1986	1,919.3	109.9	2,029.2		2,029.2
1987	1,919.3	121.6	2,040.9		2,040.9
1988	1,919.3	134.0	2,053.3		2,053.3
1989	1,919.3	147.0	2,066.3		2,066.3
1990	1,919.3	160.7	2,080.0		2,080.0
1991	1,919.3	162.0	2,081.3		2,081.3
1992	1,919.3	162.0	2,081.3		2,081.3
1993	1,919.3	162.0	2,081.3		2,081.3
1994	1,919.3	162.0	2,081.3		2,081.3
1995	1,919.3	162.0	2,081.3		2,081.3
1996	1,919.3	162.0	2,081.3		2,081.3
1997	1,919.3	162.0	2,081.3		2,081.3
1998	1,919.3	162.0	2,081.3		2,081.3
1999	1,919.3	162.0	2,081.3		2,081.3
2000	1,919.3	162.0	2,081.3		2,081.3
8 mos - 2001	1,279.5	108.0	1,387.5		1,387.5
TOTALS	$30,705.9	$2,758.4	$41,464.3	$(11,000.0)	$ 30,464.3[c]

a) Reference - Lease for Real Property Between Terminal Realty Baltimore Company and Terminal Realty Penn Company and the United States of America

b) Calculated as follows:

Current rental payment excluding tax bill	$3,338,136/yr
1st mortgage payment after purchase	1,418,856/yr
Net Annual Base Rent Reduction	$1,919,280/yr

c) Cumulative cash savings over lease term resulting in internal rate of return on investment of approximately 22%

Mr. DICKS. Can I ask Mr. Hite a question?
Mr. YATES. Yes.

ADMINISTRATION'S POSITION

Mr. DICKS. What is the administration's position on the offer?
Mr. HITE. Mr. Dicks, I was not aware of the offer until a half hour before we came up here. I cannot speak for the Secretary but—well, I will speak for him. We would be favorably inclined to that offer.
Mr. YATES. Because it would save money?
Mr. HITE. Yes, sir. That is correct.
Mr. YATES. This comes out of your own money to pay off your obligations obviously according to what he said.
Mr. HITE. Yes, sir.

CONGRESSIONAL APPROVAL

Mr. YATES. How much money does the Government have to look forward to in order to put this building in shape for possible use? I don't know what the use will be ultimately but for the possible use. There has been no authorizing legislation passed, has there?
Mr. HITE. No, sir.
Mr. FISH. Eleven million dollars.
Mr. YATES. That is the amount that would put the building in shape without any authorization legislation for use of the building, is that correct?
Mr. FISH. To put the historic structure in shape we need to complete the roof.
Mr. YATES. You don't understand me.
Mr. FISH. I am sorry.
Mr. YATES. Has there been any congressional approval through legislation of the agreement that was entered into between the Department of the Interior and the Department of Transportation?
Mr. FISH. No, sir.
Mr. YATES. Has there been any congressional approval of any kind of possible use for the building other than for the Visitor Center which was passed some time ago?
Mr. FISH. Yes, sir.
Mr. YATES. How much would it cost to put the building in shape for any possible use to take care of just basic repairs?
Mr. FISH. The roof?
Mr. YATES. Yes.
Mr. FISH. The roof would be $8 million.
Mr. YATES. Just a minute ago, Jack, you said $10 million and you were not sure of that figure.
Mr. FISH. No. I said $10 million but we already had $2 million and that is under construction.
Mr. DICKS. Now, has any of that been wasted?
Mr. FISH. No, sir.
Mr. DICKS. Has any of it been expended?
Mr. FISH. We are out there right now and we have about 55 percent of the job complete. We will be finished in July.
Mr. DICKS. You spent 55 percent and now you have a disaster. Did that occur because you were in the midst of the repair work?

Mr. FISH. We are evaluating that. We don't know that that was caused by the repair work. That is what the engineers are out there taking a look at. We entered into a contract in September for $2 million to repair portions of the roof and that work is underway. It is 55 percent complete and basically what it is doing is the main roof over the main hall.

Mr. DICKS. Are there any leaks in the roof over the main hall?

Mr. FISH. Yes, sir, there are.

Mr. YATES. Are you doing just patch work now?

Mr. FISH. No, sir. We are doing a complete job on the portions we are working on.

Mr. YATES. So that will provide the Government with a roof that will be permanent?

Mr. FISH. Yes, sir.

Mr. YATES. All right.

Mr. DICKS. The question I am trying to get to is did the recent storm wipe out some of the work that has already been done so that you are going to have to redo that work? That is what I want to know.

Mr. FISH. I don't know that. I don't think so but I don't know for sure.

Mr. DICKS. If the Chairman would indulge me, I think it is important, as soon as possible, to get a report from the Park Service on the situation as a result of the money that has already been provided and what has happened on this part of the project.

Mr. FISH. We would be glad to do that, Mr. Dicks, but we are evaluating that right now.

Mr. DICKS. Whenever you get the information, we would like to know. I am not saying anybody is at fault. What I am trying to get to is that we spent some money. It was wasted because of the rain storm. That was a natural phenomena. However we ought to know whether the storm destroyed work already completed in order to make a determination on how much money we are going to need to get the roofs fixed.

Mr. FISH. From the little I know, no, sir, it did not.

Mr. DICKS. Has the administration any plan to fix it? Is there any budget justification, or any request for emergency legislation to get this fixed?

Mr. FISH. No, sir, not from the Department of the Interior.

Mr. DICKS. I am sure the White House must be aware of this.

Mr. YATES. The Department of the Interior is the responsible agency.

Mr. HITE. I don't know that there has been any impetus before today.

Mr. YATES. He has been on holiday.

Mr. HITE. No, indeed.

Mr. YATES. Let me just ask another question. We have been talking about $2 million. What is the amount, $2,360,000? Did you receive any other money from any other agency to be used for repairing the roof?

Mr. FISH. Not for repairing the roof as such, Mr. Chairman.

Mr. YATES. What other money did you receive?

Mr. FISH. The total project as Mr. Hite has indicated is about $46 million. $16.0 million that came from the railroad companies plus

they came in with about another $400,000 in addition to the $16 million. Approximately $1.4 million dollars came in from the D.C. Government to put in a ramp on the northwest corner of the parking facility and some from WMATA, the Metro system that came close by. This was about $520,000 from them.

There was also an agreement between Interior and the Urban Mass Transit Administration that they would pay for $8.1 million worth of work in the parking facility and ramps. When the project was stopped in 1976 the UMTA portion, the $8.1 million, was incomplete and so the amount that was complete of UMTA was about $6.8 million and so we were a couple of years before we got the check from UMTA.

Mr. YATES. When did you get the check?

Mr. FISH. We got it in November of 1978, Mr. Chairman.

We had to hold back some money we had out of that $21.2 million that had been authorized to the National Park Service to pay the contractor so we had about $3 million that we had kept back until we got that UMTA check. When we got the UMTA check then we were able to pay the bills and had $3.0 million worth of National Park Service money. Part of that money was in Roads and Trails as I understand it and that had to be shifted over to Buildings and Utilities because we needed to do some work on the building and my understanding is that that was accomplished when it came to the Congress and we asked for that money for the roof. That money got shifted out of the Roads and Trails account over to the Buildings and Utilities account. So then we took that money for the roof. Also, we were under court order at that time that we had to put in two elevators for the handicapped that had been taken out during the construction but we had to put them in so that came out of that $3 million.

So the roof, the elevators, the parking facility was unfinished and was temporarily braced. We were concerned about it so we had structural engineers look at that and they said we had to do some work in there. So we had to take that money out of the $3 million to tighten up the cables and to do some bracing work in the unfinished portion of the garage.

Mr. DICKS. Let me ask one question while you are pondering.

Mr. YATES. All right.

TOTAL MONEY SPENT ON PROJECT

Mr. DICKS. Has anybody added up how much money has been spent on this project to this date?

Mr. YATES. That is what I asked Mr. Hite.

Mr. DICKS. Do we know that?

Mr. HITE. Mr. Dickenson says $45 million. I say $46 million plus the $5 million that the railroads put up to build the replacement depot.

Mr. DICKENSON. So we are talking about $51 million.

Mr. HITE. Yes, sir.

Mr. DICKS. What has been accomplished with that $51 million?

Mr. FISH. The building has been worked on and——

Mr. YATES. And reworked on and reworked on.

Mr. DICKS. And the roof leaks.

Mr. YATES. Are the side walls completed now?

Mr. HITE. Yes, sir.

Mr. YATES. Are they restored to the way they were originally?

Mr. HITE. In the concourse?

Mr. YATES. The walls were open?

Mr. HITE. Yes, sir.

Mr. YATES. You had plastic up there.

Mr. HITE. They are completed, Mr. Yates.

Mr. YATES. They are completed?

Mr. HITE. Yes, sir.

Mr. YATES. Are they restored to their original condition?

Mr. HITE. Basically, yes.

Mr. FISH. Basically.

Mr. YATES. Where are we going? We have spent $51 million so far.

Mr. DICKS. And the roof leaks.

Mr. YATES. Would you please furnish the committee with a statement of how you spent the $51 million?

Mr. HITE. Yes, sir.

[The information follows:]

Cost of repairs

National Park Service	$21,245,397
Railroad	16,400,000
Urban Mass Transit Authority	6,800,000
District of Columbia Government	1,400,000
Co-Operative agreements	200,000
Total	46,045,397

In addition, the railroads spent approximately $5 million to build the replacement depot at Union Station.

Mr. YATES. How much more money do you need in order to finish the project? Give that to the committee.

[The information follows:]

COST TO RESTORE STRUCTURE

Based on fiscal year 1981 dollars, $46.4 millon would be required to complete stabilization of the structure and restoration of the public areas.

Mr. YATES. There is authorizing legislation pending which was supposed to be considered last year which would have given you an additional $36 million, right? Would that have completed the building?

Mr. FISH. I think that was our position at that time.

Mr. YATES. Would it have completed the building? Would it have completed the roof?

Mr. FISH. Yes, sir, it would.

Mr. YATES. Would it have completed the parking facility?

Mr. FISH. Yes, it would have.

Mr. YATES. What would it have done for the main building?

Mr. FISH. For the main building it would have been the roof repair, it would have been some structural work on the north wall of the concourse, and updated the electrical system in the public area. It would have done some fire stand pipe and sprinkler system in the basement, the main entrance repaired, the stone colonnade, and the steam.

Mr. YATES. That may go into the record. That is what it would have done.

Mr. FISH. Yes, sir.

[The information follows:]

Elements of $36 million

1. Near-term repairs/main building	$5,600,000
2. Complete parking garage	14,000,000
3. Onsite roadway improvements	8,000,000
4. Long-term repairs/main building	2,000,000
5. Roof repairs	6,500,000
Total	36,100,000

Mr. YATES. That is the $36 million.

Mr. FISH. Plus the $23 million from the Northeast Corridor Improvement Project.

Mr. YATES. That is $36 million plus $23 million which is $59 million. So total cost is $105 million.

Mr. DICKS. I watched Mr. Hite, Mr. Chairman, and he is not sure of that.

Mr. YATES. Mr. Fish is now saying——

Mr. FISH. There was an escalator clause in the last legislation that was introduced so that at the end of the fiscal year if you had needed $36 million and you didn't spend that in one fiscal year, you might spend $10 million. You therefore had $26 million left. The bill that was before the Congress would allow you to add inflation to that $26 million so if there was an inflation of 10 percent for the prior year you could add 10 percent to the $26 million. That is all I would point out, Mr. Chairman. You might spend more than $36 million.

Mr. YATES. This will go into the report that you will furnish the committee.

Mr. HITE. Yes, sir.

Mr. YATES. How much you have spent to date and how much you proposed and for what merely to repair the building. Now what does this do with respect to the plans for the interior of the building, anything?

Mr. FISH. No, sir, it does not.

Mr. YATES. Does it create shops, for example?

Mr. FISH. I apologize because I answered too quickly. Of the Northeast Corridor Improvement part of this $23 million, Mr. Chairman, about $12 million of that would go for station improvements in the concourse area and that could include shops, ticketing and so forth.

Mr. YATES. Would the Federal Government own that building?

Mr. FISH. Yes, sir.

Mr. YATES. What does the Northeast Corridor get?

Mr. FISH. They get the train station back in the concourse area, Mr. Chairman. They get the trains moved closer to the concourse.

Mr. YATES. I see. All right.

Does this contemplated plan assume the abandonment of the bus portion which was originally contemplated?

Mr. FISH. Yes, sir. There is nothing in that $36 million that would provide for buses.

Mr. YATES. All right. Could the station be used as a bus depot as was originally contemplated or would that now be out entirely?

Mr. FISH. In my estimation it would be out entirely, Mr. Chairman.

PARKING FACILITY

Mr. YATES. What about the parking facility? How many cars will that accommodate?

Mr. FISH. That would accommodate 1,400 cars.

Mr. YATES. It would?

Mr. FISH. Yes, sir. The completion of the parking facility would accommodate 1,400 cars. We have completed the lower deck which is a bus deck, and the metro buses and some tour buses are now using that level. The four levels above that are in various stages of completion but basically it is about a total of 60 percent complete.

Mr. YATES. That would complete that building into a working parking facility.

Mr. FISH. Very much so, Mr. Chairman, and also if you were to have a concessionaire operate the parking facility you could probably realize—there was an estimate by the Denver Service Center some years ago—a million dollars a year return from parking fees.

Mr. DICKS. Have you negotiated with anybody on that kind of a lease?

Mr. FISH. No, sir, we have not.

Mr. DICKS. Would that not be important to know, and to do some work on that?

Mr. FISH. Well, we did some work. In fact, we made two estimates and the best we could test the market at that time, would be a return based on parking fees of about a million dollars. We could update that but until we get the structure complete——

Mr. DICKS. Well, could I ask one thing?

Mr. YATES. Sure.

Mr. DICKS. Mr. Hite, what is the administration going to do with this? This is a classic disaster. Congress, the administration, and the Executive Branches all have some responsibility here, all of us do.

Mr. YATES. Let me ask this. The most important thing is how soon can the roof be fixed?

Mr. FISH. We figure that we could be under contract if we got additional funds, Mr. Chairman.

Mr. YATES. How much in additional funds?

Mr. FISH. An additional $8 million.

Mr. DICKS. When?

Mr. FISH. October.

Mr. DICKS. Next October?

Mr. FISH. This coming October.

Mr. DICKS. Why don't you want to move faster on that?

Mr. FISH. You have to get it out for bid and that process, I am told, would take us until October.

Mr. DICKS. When you have a disaster, do you have to bid something like this?

Mr. FISH. Sure. Probably emergency measures, maybe you could.

Mr. DICKS. You have a contractor that is already there. Could you not sole source it and just tell him we have to move on and get the job done?

Mr. FISH. That might be possible but I don't think so. However, that is a good idea.

Mr. YATES. I have to go to a subcommittee chairmen meeting and I am late now.

Mr. DICKS. I want to ask one question.

Mr. YATES. I will let you ask your question but I have to go.

Mr. DICKS. This is important. It is always important to have people on the other side of the table ask questions. What about the ramp, does that money complete the ramp?

Mr. FISH. That $23 million from the Northeast Corridor would complete; the ramp would be complete and the parking.

Mr. HITE. This is important, Mr. Chairman, because the question Mr. Dicks asks is very elemental. I would not appropriate a nickle until we determine together what is going to happen to the Center. It has everything to do with how the money is spent.

Mr. YATES. There are two things that have to be done if I understand this. One is the roof has to be fixed.

Mr. HITE. Yes, sir.

Mr. DICKS. We need an authorization bill.

REPROGRAMING OF FUNDS

Mr. YATES. The question is how we get the money to them. Is there a question of a possibility of a reprogramming? Do you have enough money for that? Do you want to take a look and let the committee know?

Mr. DICKS. What about an urgent budget request? Is the administration right?

Mr. HITE. I don't know, sir.

Mr. DICKS. Does the administration have any plan at all to deal with this?

Mr. HITE. No, sir.

How about the upstairs, you know. We have man-eating rats on the second floor and moths flying up there.

Mr. YATES. Get an exterminator. Why don't you do that?

Mr. FISH. It is very, very difficult and we do have our employees there. We are very concerned about the health of our employees.

Mr. YATES. Why don't you do something?

Mr. FISH. We are probably going to have to move them out.

Mr. YATES. Why do you have rats there? I don't understand why you don't do something to get rid of them.

Mr. FISH. Rats we try to get rid of, Mr. Chairman.

Mr. YATES. You better protect that book store. There was somebody on television that said there were $80,000 or $90,000 worth of books there.

Mr. FISH. Mr. Chairman, that is part of the roof problem and we just can't get to it.

Mr. DICKS. When is the administration going to have a position on this?

Mr. HITE. I will have to report back to you and the Committee, sir, because there has been no thinking of this matter until the roof fell in, so to speak.

Mr. YATES. We are going to put this off for about ten days. Get the material in shape.

Mr. HITE. Yes, and the administration's position.

Mr. YATES. Yes, we want to know the administration's position on the roof. You ought to clean out those rats for sure and make the place habitable for working. I also want to know the administration's position on the Penn Central/Baltimore Realty offer. Let's put it off until March 6. Secretary Watt will be before us on that day. That should be a interesting hearing.

Mr. HITE. Yes, sir.

Mr. YATES. All right. If we want more information from you, we will let you know.

Mr. HITE. Thank you, Mr. Chairman.

Mr. YATES. Thank you.

FRIDAY, MARCH 6, 1982.

DEPARTMENT OF THE INTERIOR

TESTIMONY OF THE SECRETARY

WITNESSES

JAMES G. WATT, SECRETARY OF THE INTERIOR
DONALD P. HODEL, UNDER SECRETARY OF THE INTERIOR
RICHARD R. HITE, DEPUTY ASSISTANT SECRETARY FOR POLICY, BUDGET AND ADMINISTRATION
WILLIAM D. BETTENBERG, DIRECTOR OF BUDGET
JAMES CANAN, ACTING DEPUTY ASSISTANT SECRETARY FOR INDIAN AFFAIRS

INTRODUCTION OF WITNESSES

Mr. YATES. This is a hearing on the appropriations for fiscal year 1982 for the Department of the Interior.

Our committee is pleased this morning to welcome the big boss of the Department of the Interior, Secretary James G. Watt, who is accompanied by Mr. Donald P. Hodel, the Under Secretary; Mr. Richard R. Hite, the Deputy Assistant Secretary, who is back again as a pillar of the Department of Interior; and Mr. Bettenberg, a long-term pillar of the department.

Mr. Secretary, we are glad to have you here this morning. You have a statement which we will put in the record at this point.

[The statement of Secretary Watt follows:]

Statement of James G. Watt, Secretary of the Interior
Before the House Subcommittee on Appropriations for
The Department of the Interior and Related Agencies

March 6, 1981

Mr. Chairman and Members of the Committee:

I am pleased to appear before you today for the first time as Secretary of the Interior. During my previous tenure at the Department, I was privileged to work with this Subcommittee on several occasions, and I am looking forward to working with you again in my new capacity.

During the past month, I have participated extensively in discussions with President Reagan and the rest of the Cabinet on the state of the economy and the Federal budget. The economy is in disarray -- whether we look at it from the standpoint of inflation, unemployment, productivity, or interest rates. The budget is out of control. President Reagan and I are committed to a fundamental change of course:

- To improving the opportunities for private sector innovation and productivity; and
- To reducing the growth of Federal spending so that the Federal Government lives within its means.

We have concluded that massive reductions in the budget, together with streamlining of programs and elimination of excessive regulations, are necessary actions to improve the state of the economy.

Last month, President Reagan announced major revisions in the Federal budget. Major actions were proposed for Interior programs, including:

- Establishing a funding moratorium on grant programs for recreation and historic preservation;
- Placing a moratorium on Federal land acquisition from the Land and Water Conservation Fund;
- Increasing funding for National Park restoration and improvement;
- Reducing spending on Federal water development projects;
- Terminating the Youth Conservation Corps; and
- Accelerating Federal energy leasing.

Further reductions in the Interior budget are planned. Final decisions on these will be announced on March 10.

I endorse and support these actions. Individually, the program reductions that are being proposed concern programs that are well intentioned. Although I believe that some of them could be streamlined, they are competently managed and produce important benefits. But, I submit that they are not

essential Federal expenditures. The work funded by the grant programs is also work which can be conducted by States, local governments, and private citizens, and in that sense the benefits of these programs can still be realized if they are of sufficiently high priority to those States, local governments, and private citizens.

We propose a moratorium on the programs for State recreation grants from the Land and Water Conservation Fund, grants to urban areas for recreation facility restoration, and grants to States for historic preservation. This would save about $476 million this year and next. We consider these activities discretionary and amenable to continued independent State and local endeavor without Federal guidelines. State and local governments have traditionally had more funds available for these purposes than could be matched by the Federal government and have accomplished far more than those projects funded in part by the grants. Tax benefits and private and other local historic preservation activities far exceed the amounts supported through Interior grants. We would, however, propose to continue funding for the National Trust for Historic Preservation which operates many significant historic sites and programs.

We are preparing legislation to make Land and Water Conservation Fund monies available for restoration and improvement of our National Parks. These parks, for the most part, represent our most significant natural and historic places of true national interest and we must hold ourselves accountable for their preservation and wise use. I believe we have been seriously deficient on both accounts. Our parks and park facilities have been deteriorating while we have been rushing to acquire more land. I also believe that some park policies have been more exclusionary than protectionist, resulting in less public enjoyment of our parks. We will be proposing an addition of $105 million, contingent on Congressional enactment of enabling legislation, for restoration and improvement of the parks.

At the same time, we are proposing a moratorium on new Federal land acquisition. This would save nearly $400 million over the next 19 months. We would limit funding during this period to court awards and a limited number of emergency purchases while we begin a thorough and thoughtful review of land acquisition policies, the need for and priorities for acquisition, the potential for land exchanges, and existing park and recreation legislation. I believe that most of the truly unique areas of national significance requiring Federal management and funding are already a part of the National park, forest, refuge, trails, and wild and scenic rivers systems. In an era of budgetary constraint, we should be seeking to round out the Federal estate and manage better the areas that are part of that estate.

In conjunction with these proposals, I have initiated action to consolidate the Heritage Conservation and Recreation Service with the National Park Service. I believe that the programs of both agencies can benefit from the personnel and programmatic interchange that will take place and it provides a good opportunity to absorb skilled personnel from the Heritage Conservation and Recreation programs that are being reduced into Park Service programs where a substantial number of vacancies exist.

The Youth Conservation Corps is also proposed for termination, saving nearly $100 million over the next two years. This program meets a limited national need for federally financed employment.

In addition to these announced decisions, the proposed budget will reflect major initiatives in other areas of Interior Department responsibility. The Administration will propose to establish a new office of water policy reporting to the Assistant Secretary for Land and Water Resources. This office would work with the States, interested citizens, Congress, and other Federal agencies in developing and coordinating national water policy and would assist me on water policy issues in my role as chairman of the Cabinet Committee on Natural Resources and the Environment. I firmly believe that previous attention to this important area of national concern was ad hoc or, in the case of the Water Resources Council, a lowest common denominator approach to water policy development.

As a Nation, we clearly need to rethink our approaches to conserving water resources and meeting water resource requirements. This needs to be done in a framework of State and Federal cooperation, but the emphasis should be on respect for State water rights and on State management of their water resources and financial participation in water resource projects.

In conjunction with this initiative, we will be proposing to eliminate funding for the Office of Water Research and Technology and the Water Resources Council. I believe that neither organization properly focuses on national concerns for development of water policies and programs. In this era of fiscal austerity, many of the functions of the Office of Water Research and Technology should properly be the responsibility of States and private industry. The staff of the Water Resources Council primarily supports an interagency committee and the work of the Council suffers from all the defects you would expect from such an organizational arrangement.

The Department's revised budget will also propose reductions across a number of our bureaus, including belt-tightening in the Office of the Secretary, and decreases for the Office of Surface Mining, the Geological Survey, the Bureau of Land Management, and the Fish and Wildlife Service, where we plan to streamline our approaches to regulatory activities and program decision-making.

I anticipate that these actions will go a long way toward achieving what I believe to be a much-needed balance between the development of our domestic resources -- including energy -- and the protection of our environment under proper safeguards. In order to achieve this balance, we will need to use a commonsense approach to managing our lands and waters under the concepts of multiple use which have already been articulated by the Congress. A critical element in bringing a balanced perspective to multiple use management is to be a good neighbor. This means that the Department of the Interior will maintain open and candid communications with State and local governments, and with others representing national, State, and local concerns, as well as with the Congress, and that all of these groups will have an opportunity to become involved in the decision process where their interests are affected.

In the past, all too frequently a perfectly reasonable intention of balancing environmental values with other values has led to unnecessary red-tape. Well-intentioned procedural safeguards and regulations seem to have become ends unto themselves, rather than a means to an end. President Reagan and I believe that we can reform the regulatory system and remove unnecessary burdens while

protecting the environment and the basic values of our Nation, especially if such reforms are made in a reasoned way.

I believe that the Office of Surface Mining is an agency that must bear a significant share of the responsibility for excessive and counter-productive regulatory activity. Consequently, I have directed the Office of Surface Mining to substantially shift its regulatory activities to the States, thus implementing the intent of the Congress of State primacy in surface mining control and reclamation activities. This reduction in Federal regulation in favor of State primacy will be reflected in the 1982 budget revisions.

While we are proposing to streamline certain activities, we also intend to accelerate energy leasing activities and encourage the development of the Nation's energy resources. The Administration plans to move ahead on a broad front with regard to the leasing of oil and gas on the Outer Continental Shelf; oil and gas leasing onshore, including the National Petroleum Reserve in Alaska; and the leasing of other forms of energy, such as coal, geothermal resources, oil shale, and tar sands.

I have been told that this Subcommittee has been in the forefront of concern about the capacity of this Nation to respond to its energy needs and has, in fact, taken the unusual but essential step of initiating legislation for leasing in the National Petroleum Reserve in Alaska (NPRA), as well as providing a large portion of funding for the Nation's energy programs. I share your concern about the important energy issues facing our Nation, and appreciate your recognition of the critical role played by the Department of the Interior in developing and enhancing our domestic sources of energy.

The Congress currently has pending before it a deferral action which is intended to permit completion of the Federal exploratory program in the NPRA this year.

I wholeheartedly support this action. I understand that this Subcommittee has in the past opposed the conclusion of the Federal exploratory program. However, I think that circumstances now favor its termination.

With the conclusion of drilling this year, the Department will have finally completed, and even exceeded, the program originally planned for the Navy. Experts from the Geological Survey have informed me that drilling of a small number of additional wells on their part would be of little value in conducting the new leasing program and that they expect the drilling rigs used in the program to remain in Alaska. Moreover, additional drilling would be extremely costly -- ranging from $115 million to $125 million. At this point in time, I believe that the energy supply and fiscal interests of the Nation are best served by implementing the private leasing program.

This Department is proceeding expeditiously and has been able to move up the timetable for the leasing program from what was envisioned last year. We are now planning to hold the first lease sale in the NPRA between December of this year and the following spring.

During the coming weeks and months, I will also be looking carefully at ways in which we can enhance the self-determination of the Indian people. I am aware of the concerns of this Subcommittee with the problems of the Indian community

and of how you have moved forward in the funding of both operating programs and support for construction programs for schools, building rehabilitation, roads, and irrigation projects.

As a new initiative, I am proposing a program of block grants to Indian tribes as a substitute for several programs in the Bureau of Indian Affairs. In my discussions with tribal leaders, they have indicated a strong desire for less administrative burden and more program flexibility. The block grant approach will provide for direct funding and significant program flexibility for tribal governments and will permit reduction of up to 400 positions in the Bureau of Indian Affairs. It is my hope that tribal leaders will view this as an important new opportunity for them in their pursuit of self-determination. We have identified over $160 million in the Carter Budget in Bureau of Indian Affairs programs which I believe are readily adaptable to a block grant approach.

In line with the major reductions being proposed in many Interior programs, the total amount available for tribal discretion in these programs would be less than originally budgeted, but the reduction will be partially cushioned by reducing the overhead and this approach will give tribal governments much more say in the final allocation than is traditionally the case when reductions are made on an individual program basis. I believe this is an important step in this Administration's partnership with tribal governments. They will truly have the opportunity to set program priorities and have the flexibility to adjust those priorities within the funding levels requested for the block grants.

I have received many inquiries concerning what the policy will be in the Reagan budget with regard to the payments in lieu of taxes program which had been abandoned by the previous Administration. Our revised budget will include a proposal to redesign and refund this program which reimburses governments for their loss of tax revenues because of Federal ownership of land. This initiative will require a revision of existing law.

You have asked for our position on the Union Station (NVC) issue. My position is that this monumental structure, designated as a National Landmark in 1964, should be restored and maintained. I feel that the Congress and the Executive Branch should now decide what the best use of the structure should be. That decision will dictate which agency of the Government should be responsible for this facility. This is imperative, as in our view, the original intent of the National Visitors' Center Act of 1968 has been overtaken by events.

The Administration will soon transmit to the Congress legislation proposing that the appropriate agency of the Government be given the responsibility for its restoration and operation. In terms of today's priorities the best utilization of the facility appears to be as a train station and that would suggest the Department of Transportation be the managing agency. I further suggest that the private sector be encouraged to participate in the development of merchandising outlets in the Union Station mall.

Mr. Chairman, this concludes my prepared remarks. I do, however, enlist your support in sustaining the President's Program for Economic Recovery and the specific changes I have outlined. I anticipate that details of all changes in the Department's budget will be made available to you within the next few days.

Mr. YATES. You may proceed, Mr. Secretary.

Secretary WATT. Thank you, Mr. Chairman.

Mr. YATES. Before we start, we will place in the record at this point the biographical statements of Secretary Watt and Under Secretary Hodel.

[The biographical statements of Secretary Watt and Mr. Hodel follow:]

JAMES G. WATT

Mr. Watt came to the Department of the Interior after extensive experience as a Federal official, as a congressional aide and as a public interest lawyer. His government positions included: Vice Chairman and Commissioner of the Federal Power Commission; Director, Bureau of Outdoor Recreation; and Deputy Assistant Secretary of the Department of the Interior. He also served as Legislative Assistant and Counsel to former U.S. Senator Milward Simpson. Most recently he served as President and Chief Legal Officer of the Mountain States Legal Foundation. Mr. Watt, a native of Wyoming, holds a Juris Doctor degree from the College of Law of the University of Wyoming.

DONALD PAUL HODEL

Don Hodel was nominated by President Ronald Reagan as Under Secretary of the Interior and on February 5, 1981, was confirmed by the U.S. Senate.

Mr. Hodel was born in Portland, Oregon, in 1935. He received his Bachelor of Arts degree in Government from Harvard University in 1957 and his Doctor of Jurisprudence from the University of Oregon School of Law in 1960. He was student editor of the University of Oregon Law Review.

A member of the Oregon State, Multnomah County, and Federal Bar Associations, Hodel was active in both corporate and private law practice in Portland for 9 years. He was appointed Deputy Administrator of the Bonneville Power Adminsitration, which was then a part of the Interior Department, on October 1, 1969. He was a delegate in 1971 to the Eighth World Energy Conference (WEC) in Bucharest, Romania; the 1974 Ninth WEC in Detroit, Michigan; and the 1977 Tenth WEC in Istanbul, Turkey.

He was appointed Administrator of the Bonneville Power Administration on December 1, 1972, and while in that position served on the Board of Trustees of the National Electric Reliability Council, the Board of Directors of the Electric Power Research Institute, the Executive Committee of the Western Systems Coordinating Council, and Advisory Committee on Energy Facility Siting of the National Science Foundation, and the Board of Directors of the U.S. National Committee of the World Energy Conference.

Beginning January 1, 1978, he and his wife, Barbara, formed an energy consulting firm, Hodel Associates, Incorporated. In this capacity he served, first as consultant to, then for a two-year term as President of, the National Electric Reliability Council, a national organization of public, private and Federal electric systems dedicated to augmenting the reliability and adequacy of bulk power supply.

He was appointed to the Oregon Alternate Energy Development Commission by Governor Atiyeh in 1979 and was elected to the Board of Directors of the U.S National Committee of the World Energy Conference in February 1980.

FISCAL YEAR 1982 BUDGET REVISION

Secretary WATT. It is fun and a pleasant experience to come back to this committee after several years of absence and see faces new to me across this table. Congressman Regula and I were introduced, and we have had great times together since then.

I introduced an Ohio Congressman to the great west, and we had a great time, the two of us.

This has been an interesting period of time for me personally, as well as for the new Administration, as we have gone through a budgetary process in the first three or four weeks of the Reagan Administration with a series of Cabinet meetings and budget work-

ing groups of the Cabinet to address the budgetary situation of the country.

We find an economy that is in disarray, whether we look at it from the standpoint of inflation, unemployment, productivity, or interest rates, and we have to do something about it. We have to take control of the budget and we are committed to bringing about the changes that will allow us to do that by improving opportunities for private sector innovation, increasing productivity, and making the Federal Government live within its means.

Last month the President announced the major revisions in his budget proposals. The details of those changes will come out next week, and we will be able to discuss the specific dollar amounts at that time.

The major actions proposed by the President affecting the Department of Interior concern establishing a funding moratorium on grant programs for recreation and historic preservation; placing a moratorium on Federal land acquisition from the land and water conservation fund; increasing funding for national park restoration and improvement; redirecting the spending of Federal water development projects; terminating the Youth Conservation Corps; and accelerating Federal energy leasing.

Mr. YATES. Do you know how long a moratorium?

Secretary WATT. It will last for a period of time until we can get the economy in better shape, and also we hope during that period of time to make a re-evaluation of where we are in that program and have a defined purpose as we seek to round out the Federal recreation facilities.

We have also initiated consolidating HCRS with the National Park Service, and we will have a host of other announcements to make on the budget on March 10.

We have some new initiatives we are making in the water field. We will be creating an Office of Water Policy. We will be terminating a couple of the offices within the Department of Interior, as well as associated with it. We will be working with states, citizens, Congress, special citizens' groups, and other Federal agencies, as we seek to establish the new priorities.

The Office of Water Policy will be working with the states in an effort to develop regional policy while we take a national look at it. We will be doing some of these things through Cabinet committees which President Reagan has created. I am chairman of one of those, the Committee on Natural Resources and the Environment, and we hope to be able to be a focal point for basic policy issues that will be coming up.

We are recommending that the Office of Water Research and Technology and the Water Resources Council be terminated as of the fiscal year beginning on October 1.

Other budgetary issues that we are focusing on call for belt-tightening in the Office of the Secretary and revisions and decreases for the Office of Surface Mining. We are looking at all of the agencies in the department.

We will stress multiple use of our lands, we will move to protect the environment, we will move to accelerate leasing of energy resources, and we will work with the states in the management of the resource base to be a good neighbor. We expect that these

thrusts and initiatives will allow us to reap more benefits from the resource base, to gain more access to these benefits for the public, and to strengthen our economy through the use of these resources.

We are going to be asking this committee to assist us in creating a new initiative in proposing block grants to Indian tribes as a substitute for several programs in the Bureau of Indian Affairs. These block grants will provide direct funding and program flexibility for tribal governments. The emphasis is on the flexibility given to the tribal governments.

We will also be asking this committee to include funds for payment in lieu of taxes to all the states that have Federal lands within them. This is a total of $45 million, which we are asking for as an increase in the budget over what was submitted to you earlier this year by former President Carter.

Mr. YATES. There is nothing in that budget, as I remember, for payments in lieu of taxes. How did you arrive at $45 million?

Secretary WATT. We feel that the formula we are planning to use is the one that was really intended by Congress in the organic act, so that there would be a minimum payment made to every county that has Federal lands.

In addition to that minimum payment, there would be a payment received by them in the amount of shared revenues from mineral royalties or timber sales or the like, or they will receive the maximum payment under the formula, whichever is the greater.

Those counties which are enriched by Federal ownership and the harvest of timber or mining or mineral interests will not receive a double payment.

We think that was the intent of Congress. I think with that slight amendment we can get that program going and, using that formula, Mr. Chairman, we come up roughly with $45 million.

I need to emphasize that we are asking the committee for $105 million for the National Park Service to restore and improve the facilities that we think have been deteriorating considerably over the last few years. Our parks are in critical shape and need special attention immediately.

LEASING IN THE NATIONAL PETROLEUM RESERVE IN ALASKA

I need to focus attention on the Alaska situation with regard to the national petroleum reserve. That has been the subject of this committee's attention repeatedly. Let me compliment this group for writing in the separate legislation last year to bring that leasing program into being. I think this committee's action was correct, and in light of that, leasing will begin in the NPRA.

We are recommending that the federally financed drilling program be terminated. I am satisfied after reviewing that situation that we have secured the basic data that we need for that leasing program in the national petroleum reserve, and that we can move on with the leasing program that is needed in that area.

Mr. YATES. Terminated as of what date and how much will it cost the Federal Government in termination fees?

Secretary WATT. We would terminate the drilling program this season. As the winter season comes to an end, they would terminate their drilling activities.

We are satisfied it can be terminated within existing appropriations, so we would not be asking for new money to terminate that drilling program.

Mr. DICKS. Would the gentleman yield?

Mr. YATES. I will in just a minute.

Mr. DICKS. I think it is $10 million out of this year's appropriation.

Secretary WATT. But it is within the appropriation we have now.

Mr. YATES. What number of wells will be drilled? Will the number of wells that the committee provided funds for be completed?

Secretary WATT. Yes. The original program was scheduled for 26 wells with 10,000 line-miles of seismic data. That program has been completed with initial monies that have been made available. Two additional wells will have been drilled, plus another 3,000 line-miles of seismic data will have been collected.

USGS believes that is sufficient to allow an intelligent bidding process and, in fact, some of the private companies have already received permits and are on site carrying out seismographic work now.

We do not believe that another year of drilling will add to our body of knowledge sufficiently to justify the expense incurred by it.

RESTORATION OF UNION STATION

I do need to comment on the famous Union Station.

Mr. YATES. I think you need to comment on it.

Secretary WATT. This structure has been designated as a national landmark and should be restored and maintained.

Mr. YATES. How should it be restored and maintained? What form should the restoration take?

Secretary WATT. As a beginning, we ought to fix the roof.

Mr. YATES. We should have fixed the roof back in 1968.

Mr. LONG. Would the chairman yield?

Mr. YATES. Mr. Long?

Mr. LONG. How much have we spent on it so far?

Mr. HITE. A total of $52 million has been spent from all sources; $21 million of this has come from private funds.

Secretary WATT. Dick Hite is the resident expert, and the chairman has called him the pillar of the department, and indeed he is.

Mr. YATES. A pillar.

Secretary WATT. Thank you. I like that better.

I think when Dick finishes this assignment he will focus his attentions on the roof of the Kennedy Center, so he will become an expert.

Mr. YATES. That raises a very good point. I want some comment after the Secretary's statement is finished, and we will go into roofing.

Secretary WATT. Let's call my statement terminated and go to roofing.

Mr. YATES. Has the department examined the Kennedy Center roof to make sure it was done well and that there is no prospect of the Federal Government having to patch it or build it or repair it or do something else with it in the near future?

Mr. HITE. Mr. Chairman, I can't respond to that.

Mr. YATES. Can somebody respond to that? Part of the trouble we have had—and I think you will agree with this—is there has not really been the kind of ongoing continuous inspection of construction and repair jobs undertaken by the Federal Government, so that in much too short a time the Federal Government has had to invest additional amounts.

REPAIRS OF THE KENNEDY CENTER

With respect to the Kennedy Center, the Kennedy Center was opened in 1972 or 1973. Five years later the roof was in bad repair and we had to appropriate $4.5 million not only to fix the roof, but also to repair the sides of the structure, and also the underpinning of the roads and the terraces.

This committee has been informed that work has been completed. This committee would want to make sure that whoever did that work has done a job within warranty and that the roof and the sides and the work on the Kennedy Center is sufficiently sturdy that the Federal Government won't have to worry about putting money into the structure for some time to come.

Is it the responsibility of your department? I know it is part of the National Park Service, but I don't know whether this is within your jurisdiction.

Mr. HITE. Roughly, it would be, sir. The reason I can't respond is that I don't think any of us at the table have been involved in the pursuit of that contract over the last few years. All I can commit to is to investigate it.

Mr. YATES. We don't want that to get lost in the department. I would want you to make a thorough review of the work that was done and be in a position to report back to the committee.

I have been thinking of requesting our investigating staff of the Appropriations Committee to take a look at it because as far as we have been told, the only information we have received is the work has been completed.

We have received no information indicating that somebody has been inspecting the work, that the work is in good shape, that the Kennedy Center is in good shape and will require no further repairs.

Mr. MCDADE. I think that a study by the investigative staff of this committee would be appropriate. I think it is important that the record reflect that the Center was built by the GSA. They were the project managers of the entire work.

So if we want to find out who was negligent, the finger has to be pointed at GSA, which let the contract, supervised the work and failed to get a bond, if you can imagine that. They had no warranty on the roof.

I think that is rather customary when a contract is entered into, but following the philosophy of "self-insurance", the GSA declined to get any kind of warranty on the roof. That is my information.

The result is there have been lawsuits back and forth—I don't think they are foreclosed at this date—between GSA and somebody representing the contractor involved. The Center didn't manage the construction, it was GSA.

Mr. HITE. That is correct to my knowledge.

Mr. McDade. Currently there is still an ongoing battle between GSA and the contractors over whether they performed their duty. I find it incredible there was no warranty on the roof.

Secretary Watt. I would encourage, Mr. Chairman, that you investigate the Kennedy Center. I think that would be healthy for all of us.

EXPENDITURES FOR AND USE OF UNION STATION

Mr. Regula. Do I understand Mr. Hite to say the Union Station roof has had $52 million invested in it?

Mr. Hite. That was a general sum for all the construction and rehabilitation work that has been undertaken in connection with Union Station over the last ten years.

Mr. Dicks. That is not all government money?

Mr. Hite. That is right. A total of $21 million of that amount was furnished by the railroads.

Mr. Yates. I just want to say that yesterday the committee was furnished by the department, the total sum expended so far on Union Station. The sum we received was $46,045,319. Today you are up in the fifties.

Mr. Hite. That excludes $5 million for replacement of the station, I am sure. I merely wanted to respond to Mr. Long by giving him the gross numbers of funds expended from all sources.

Mr. Yates. Why didn't you tell us about it yesterday?

Mr. Hite. I don't know where those figures came from.

Mr. Yates. They came from the Park Service people.

Secretary Watt. One of the objectives is to bring the Park Service into the Department of Interior in the next four years. I am not sure we will be successful.

Mr. Yates. That is kind of interesting because under your proposed reorganization, with the Park Service background to which you just alluded, you are putting 10 or 15 additional organizations within the Park Service.

Secretary Watt. They are a tremendously capable group, and if we can match their stride, we will do well at the department.

Mr. Yates. I can agree with that on the personnel I have seen in the field in the Park Service, but insofar as their construction program is concerned, they leave a great deal to be desired.

Secretary Watt. We are focusing hard on that, as was noted in my statement.

Mr. Yates. Yes. As of now you would rather we consider your latest figure?

Mr. Hite. Yes, if you want funds from all sources.

Mr. Yates. This Secretary said that the first thing to do is to fix the roof—and we agree with that—and to put it in shape. What was the phrase you used?

Secretary Watt. We need to make a determination as to the use of Union Station, who is going to manage it, and how it is going to be financed.

Mr. Yates. What is your suggestion in that respect? What do you contemplate the structure will be used for? Do you propose to make that determination before you consider the offer of the owning railroads?

Secretary WATT. We have not made a final decision on that—and hopefully we will shortly—but we need to consider their offer. It was built to be a train station. It probably ought to be a train station. One of the candidates for ownership would of course be the Department of Transportation or the General Services Administration. We are anxious to share this great monument with anybody who will take it.

Mr. HITE. Implicit in what we are saying is our position that we are going to recede from the Visitor's Center concept as applied to Union Station.

Mr. YATES. How far is your recession going to go?

Mr. HITE. We would abandon the concept.

Mr. YATES. There no longer will be a Visitor's Center, not even part of one?

Mr. HITE. No, sir.

Mr. YATES. At any rate, let me bring the record up to date.

LETTER FROM PENN CENTRAL PROPERTIES DIVISION

I have a copy of a letter dated March 3, addressed to the Secretary, from Victor Palmieri and Company Incorporated of the Penn Central Properties Division, the letter being signed by Peter A. Martosella, Executive Vice President, with carbon copies to M. Jack Fish of the National Park Service and James Ermer of the Baltimore and Ohio Railroad Company.

There are many conditions in the letter, but for purposes of our consideration this morning, let me just read the part that relates to the proposed purchase.

It is the purpose of this letter to bring to your attention our continuing interest in the government's acquisition of Realty Penn's and Realty Baltimore's ownership interests (Interests) in the Center.

Specifically, we would propose that the government purchase the Interests in the Center for a consideration comprised of $2,275,000 cash at closing and an additional $2,275,000 on the anniversary date of the closing for each of five subsequent years.

The Government's aggregate investment over a six-year period would be $13,650,000, which would result in gross rental savings of approximately $41,464,000, or a net cumulative cash savings over the remaining 21 years of the lease of approximately $27,814,000.

The gross savings would be incurred by elimination of the rental payments to Realty Penn and Realty Baltimore of approximately $3,338,000 per year and certain estimated tax savings partially offset by the Government's assumption of the first mortgage payments of approximately $1,419,000 per year.

The cumulative cash savings to the Government over the lease term would result in an estimated internal rate of return on its investment of approximately 36 percent. More importantly, it is estimated that in 1981, the incremental cash outlay by the Government (assuming a June 30, 1981, closing), would be only $1,290,000 and, on an annualized basis, range between only approximately $246,000 and $288,000 over the remaining five years of the proposed purchase payments after which substantial annual cash savings would accrue to the Government.

As an alternative consideration to a six-year term transaction which would generate additional cash savings to the Government, we would propose an all cash price of $11 million—an additional $2,650,000 cash savings over the term of the lease compared with the six-year payments transaction.

Of course, because of the earlier cash outlay, the internal rate of return on the Government's investment would be reduced to 22 percent. The details of the financial terms of the alternative transactions are shown in two exhibits attached to this letter.

With the conveyance of Realty Penn's and Realty Baltimore's fee interests in the property to the Government, the owners would be relieved of all past, present and future obligations under the lease and related agreements between Realty Penn and

Realty Baltimore and the United States of America. The above terms would be subject to development of a definitive agreement among the parties.

This letter will be put into the record.

[The letter follows:]

VICTOR PALMIERI AND COMPANY INCORPORATED
PENN CENTRAL PROPERTIES DIVISION

March 3, 1981

The Honorable James Watt
Secretary of the Interior
United States Department of the Interior
Washington, D.C. 20240

Dear Secretary Watt:

Over the past several months we have had discussions with the Department of the Interior regarding the possible interest of the United States Government ("Government") in exercising its option to purchase the ownership interests of Terminal Realty Penn Company ("Realty Penn") and of Terminal Realty Baltimore Company ("Realty Baltimore") in the National Visitor Center ("Center"), located in Washington, D.C. In this regard, the Penn Central Properties Division of Victor Palmieri and Company Incorporated ("VPCO") has been acting on behalf of The Penn Central Corporation ("PCC"), the owner of all of the outstanding shares of Realty Penn. Realty Baltimore is a wholly owned subsidiary of the Baltimore and Ohio Railroad Company ("B&O"). Pursuant to an agreement approved by the United States District Court for the Eastern District of Pennsylvania, VPCO acts as Manager of the nonoperating real estate (the "Property") owned by PCC and many of its subsidiaries (collectively, the "PCC Companies"). As Manager, VPCO is responsible for preserving and enhancing the value of the Property and for its development, sale and leasing. In addition, VPCO has obtained the B&O's approval to submit this letter to you on its behalf.

It is the purpose of this letter to bring to your attention our continuing interest in the Government's acquisition of Realty Penn's and Realty Baltimore's ownership interests ("Interests") in the Center. Specifically, we would propose that the Government purchase the Interests in the Center for a consideration comprised of $2,275,000 cash at closing and an additional $2,275,000 on the anniversary date of the closing for each of five subsequent years. The Government's aggregate investment over a six year period would be $13,650,000 which would result in gross rental savings of approximately $41,464,000 or a net cumulative cash savings over the remaining 21 years of the lease of approximately $27,814,000. The gross savings would be incurred by elimination of the rental payments to Realty Penn and Realty Baltimore of approximately $3,338,000

per year and certain estimated tax savings partially offset by the Government's assumption of the first mortgage payments of approximately $1,419,000 per year. The cumulative cash savings to the Government over the lease term would result in an estimated internal rate of return on its investment of approximately 36%. More importantly, it is estimated that in 1981, the incremental cash outlay by the Government (assuming a June 30, 1981 closing) would be only $1,290,000 and, on an annualized basis, range between only approximately $246,000 and $288,000 over the remaining five years of the proposed purchase payments after which substantial annual cash savings would accrue to the Government.

As an alternative consideration to a six year term transaction which would generate additional cash savings to the Government, we would propose an all cash price of $11 million--an additional $2,650,000 cash savings over the term of the lease compared with the six year payments transaction. Of course, because of the earlier cash outlay the internal rate of return on the Government's investment would be reduced to 22%. The details of the financial terms of the alternative transactions are shown in two exhibits attached to this letter. With the conveyance of Realty Penn's and Realty Baltimore's fee interests in the property to the Government, the owners would be relieved of all past, present and future obligations under the lease and related agreements between Realty Penn and Realty Baltimore and the United States of America. The above terms would be subject to development of a definitive agreement among the parties.

We would be prepared to discuss this proposal with you in greater detail, after you have had an opportunity to consider the Government's continuing interest in acquisition of the Center. I might mention to you that the proposals outlined above received the formal approval of PCC's Board of Directors and preliminary approval from B&O Management, subject to certain B&O Board approvals. VPCO, on PCC's behalf, and B&O are prepared to enter into discussions with the Department of the Interior, regarding Government acquisition, at any time. Please understand that with regard to any such discussions and/or negotiations, VPCO acts entirely on behalf of the PCC Companies. Any agreement with respect to the property under negotiation must be made with the PCC Companies and all obligations under or related to such an agreement will be obligations of the PCC Companies, and not of VPCO. As you can understand, VPCO makes no warranties or representations with respect to any of the Property or to the contemplated transaction, and the only such warranties and representations that are made are those made by the PCC Companies and contained in a written agreement executed by the PCC Companies.

We would be happy to supply your staff with any additional information that you may require or meet with you at any time regarding this matter.

Sincerely,

Peter A. Mastosella
Executive Vice President

Attachment

cc: M. Jack Fish (National Park Service)
James Ermer (Baltimore & Ohio Railroad Company)

EXHIBIT I

Victor Palmieri and Company Incorporated
Penn Central Properties Division

SAVINGS TO UNITED STATES GOVERNMENT BY PURCHASE OF OWNERS' INTERESTS IN NATIONAL VISITOR CENTER[a]

June Closing

Year	Rental Savings: Owners' Rent[b]	Rental Savings: Tax Rent	Rental Savings: Total	Purchase Payments	Annual Net Cash Savings
6 mos - 1981	$ 959.7	$ 25.0	$ 984.7	$ (2,275.0)	$(1,290.3)
1982	1,919.3	68.0	1,987.3	(2,275.0)	(287.7)
1983	1,919.3	77.7	1,997.0	(2,275.0)	(278.0)
1984	1,919.3	87.9	2,007.2	(2,275.0)	(267.8)
1985	1,919.3	98.6	2,017.9	(2,275.0)	(257.1)
1986	1,919.3	109.9	2,029.2	(2,275.0)	(245.8)
1987	1,919.3	121.6	2,040.9		2,040.9
1988	1,919.3	134.0	2,053.3		2,053.3
1989	1,919.3	147.0	2,066.3		2,066.3
1990	1,919.3	160.7	2,080.0		2,080.0
1991	1,919.3	162.0	2,081.3		2,081.3
1992	1,919.3	162.0	2,081.3		2,081.3
1993	1,919.3	162.0	2,081.3		2,081.3
1994	1,919.3	162.0	2,081.3		2,081.3
1995	1,919.3	162.0	2,081.3		2,081.3
1996	1,919.3	162.0	2,081.3		2,081.3
1997	1,919.3	162.0	2,081.3		2,081.3
1998	1,919.3	162.0	2,081.3		2,081.3
1999	1,919.3	162.0	2,081.3		2,081.3
2000	1,919.3	162.0	2,081.3		2,081.3
8 mos - 2001	1,279.5	108.0	1,387.5		1,387.5
TOTALS	$38,705.9	$2,758.4	$41,464.3	$(13,650.0)	$27,814.3[c]

a) Reference - Lease for Real Property Between Terminal Realty Baltimore Company and Terminal Realty Penn Company and the United States of America

b) Calculated as follows:

Current rental payment excluding tax bill	$3,338,136/yr
1st mortgage payment after purchase	1,418,856/yr
Net Annual Base Rent Reduction	$1,919,280/yr

c) Cumulative cash savings over lease term resulting in internal rate of return on investment of approximately 36%

EXHIBIT II

Victor Palmieri and Company Incorporated
Penn Central Properties Division

SAVINGS TO UNITED STATES GOVERNMENT BY PURCHASE OF OWNERS' INTERESTS IN NATIONAL VISITOR CENTER[a]

June Closing

Year	Rental Savings: Owners' Rent[b]	Rental Savings: Tax Rent	Rental Savings: Total	Purchase Payments	Annual Net Cash Savings
6 mos - 1981	$ 959.7	$ 25.0	$ 984.7	$(11,000.0)	$(10,015.3)
1982	1,919.3	68.0	1,987.3		1,987.3
1983	1,919.3	77.7	1,997.0		1,997.0
1984	1,919.3	87.9	2,007.2		2,007.2
1985	1,919.3	98.6	2,017.9		2,017.9
1986	1,919.3	109.9	2,029.2		2,029.2
1987	1,919.3	121.6	2,040.9		2,040.9
1988	1,919.3	134.0	2,053.3		2,053.3
1989	1,919.3	147.0	2,066.3		2,066.3
1990	1,919.3	160.7	2,080.0		2,080.0
1991	1,919.3	162.0	2,081.3		2,081.3
1992	1,919.3	162.0	2,081.3		2,081.3
1993	1,919.3	162.0	2,081.3		2,081.3
1994	1,919.3	162.0	2,081.3		2,081.3
1995	1,919.3	162.0	2,081.3		2,081.3
1996	1,919.3	162.0	2,081.3		2,081.3
1997	1,919.3	162.0	2,081.3		2,081.3
1998	1,919.3	162.0	2,081.3		2,081.3
1999	1,919.3	162.0	2,081.3		2,081.3
2000	1,919.3	162.0	2,081.3		2,081.3
8 mos - 2001	1,279.5	108.0	1,387.5		1,387.5
TOTALS	$30,705.9	$2,758.4	$41,464.3	$(11,000.0)	$ 30,464.3[c]

a) Reference - Lease for Real Property Between Terminal Realty Baltimore Company and Terminal Realty Penn Company and the United States of America

b) Calculated as follows:

Current rental payment excluding tax bill	$3,338,136/yr
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Net Annual Base Rent Reduction	$1,919,280/yr

c) Cumulative cash savings over lease term resulting in internal rate of return on investment of approximately 22%

RESPONSIBILITIES OF THE RAILROAD FOR UNION STATION

Mr. YATES. What are the railroads' responsibilities under the lease at the present time? Some history I think is pertinent at this point.

As I recall your testimony, Mr. Hite, in partial defense of the Department of Interior, you said the original lease under which the attack was made on the Union Station was between the owning railroads and Mr. Hyman's firm, under the terms of which the railroads were required to invest $16 million to put the building in shape? Is that correct?

Mr. HITE. That is correct.

Mr. YATES. To rehabilitate the whole building?

Mr. HITE. The original contract, sir, was between the Hyman contractor agent and the Chessie System; that is correct.

Mr. YATES. Right, Mr. Hyman's firm and the Chessie System were to put the whole building in shape for the government.

Mr. HITE. Yes, for use—

Mr. YATES. Preparatory to the execution of a lease.

Mr. HITE. Yes, sir, for use as a National Visitor's Center. I think that is part of the Act of 1968. The act further specified, sir, that the lease would be undertaken by the Department of the Interior with the Chessie System 25-year lease.

Mr. YATES. Under the terms of that lease, who would have been required to maintain the building?

Mr. HITE. The Federal Government through the Department of the Interior would be required to maintain the building.

Mr. YATES. Upon your taking control of the building, you would have been satisfied that the structure of the building was in good shape.

Mr. HITE. That is correct.

Mr. YATES. And that the roof had been fixed and the walls were in good shape, that everything about the building was sturdy and could be used from that point on by the government for the terms of the lease?

Mr. HITE. Under the original plans, that is correct, sir.

Mr. YATES. That was the responsibility of the railroads in the first instance, to put that building in good shape—prior to 1972 when the Penn Central Railroad went bankrupt.

Mr. HITE. That is right.

ESTABLISHMENT OF VISITOR'S CENTER

Mr. YATES. Then in 1972 it was decided to enter into the lease, and President Nixon at that time directed that you go full speed ahead to get the building in shape as a Visitor's Center by the Bicentennial year, 1976.

Mr. HITE. That is correct.

Mr. YATES. The story of conversations between you and Secretary Morton that appeared in "The Washington Post" are accurate, I take it?

Mr. HITE. Yes, they are accurate to the extent that we had those conversations. I presume the language was just as colorful as quoted, although I don't recall saying that in the interview, but I will stand by what is there as substantially correct.

Mr. YATES. This has Secretary Morton asking you, "What the hell is a Visitor's Center?" You said, "I don't know. I never heard of it."

Mr. HITE. This is absolutely correct, Mr. Yates. I got into this project in the Fall of 1973 because at that time a determination was made to invest Federal funds in the project.

At that time Representative Gray, who was Chairman of the Public Works authorizing committee, held a meeting, at which time it became apparent that costs had escalated to the point that the $16 million originally envisioned as the railroad's investment in the facility itself was inadequate.

At that time it was projected that a minimum of $24 million would be needed. For this reason, $8.7 million was authorized and later appropriated as the first Federal infusion of funds. That is when I got into it.

Mr. YATES. $9.2 million was appropriated, of which $8.3 went for the repair of the structure, and of that I think only $69,000 was allocated for the roof.

Mr. HITE. That is correct.

Mr. YATES. So, you couldn't have repaired any part of it. In 1974 you described the official groundbreaking.

Mr. HITE. Yes, sir.

Mr. YATES. You said, "We had a nice ceremony. Anne Armstrong was given a golden shovel to use. Rogers Morton was there, but we couldn't bring the Marine band out because we were advised the roof would fall in if they played."

Mr. HITE. That is right. I was advised not to bring the band in because the reverberations of the music would have a structural——

Mr. YATES. Why in the world would you ever take over the building from the railroads if it was in that kind of condition?

Mr. HITE. The events, as you correctly recall them, Mr. Chairman, transpired against ever formally completing the work and ever placing the building in a position to accept it in a formal sense as the lessor. Once the money was infused from the Federal sector, we became a management party to a contract of which we were not a signator.

Mr. YATES. Except when you signed the lease you—as the Department of Interior in this instance—did not look at the structure and see what its condition was before you signed the lease and relieved the railroads of their reponsibility to put it in good condition?

Mr. HITE. The contracting officer and the resident contracting technical representative examined the building in its state.

Mr. YATES. In the state of disrepair?

Mr. HITE. Well, Mr. Chairman, this question about the roof is one that I can't answer, as I said in that article. At the time we agreed to assume the obligation of paying the lease payments—

Mr. YATES. You also assumed the obligation of taking over the structure itself, of maintaining the structure?

Mr. HITE. We agreed in effect to accept the building in the condition that it was in and assumed the maintenance responsibility as well as the lease responsibility with the idea that the only thing that had to be completed was R&D. A significant element

indeed was the ramping in back and the parking facility itself. So, in effect we accepted the building as it was.

Mr. YATES. The history, of course, is something, and it will probably appear greater than your memory.

FUNDS NEEDED TO REPAIR UNION STATION

This committee has a responsibility, and you have a responsibility for a building where the roof is in very bad condition and it has to be repaired. It was a beautiful building, it is a landmark building.

What is proposed to be done with it? How much money do we, the government, have to spend to put it in habitable condition? We have spent $51 million to date.

Mr. HITE. The estimates I have received from the Park Service would indicate a total of $46 million of funds directly appropriated, for instance, to the Department of Interior, plus the $23 million they understand is available from northeast corridor monies, which adds up to $70 million.

Mr. YATES. $70 million plus the $51 million that has already been spent?

Mr. HITE. Yes, sir.

Mr. LONG. Mr. Chairman, I think the Reagan Administration might wonder in the future whether its ceilings on government expenditures are going to be as leaky as the ceilings on all these government structures. In a way, it is going to be a metaphor for problems of government.

Secretary WATT. I hope, Mr. Long, that we don't have a lot of the other problems, but maybe within the Department of Interior there are other things like that.

Mr. YATES. Let's dispose of this.

Secretary WATT. Let's hope next year when I appear you will be saying, that was a great job you did in disposing of the Union Station problems.

Mr. YATES. We have to find out whether you are going to ask us for money for Union Station.

Secretary WATT. In our 1982 Reagan budget?

Mr. YATES. That is what I want to know.

APPROPRIATE USE OF UNION STATION

Mr. HITE. Mr. Yates, I feel very strongly—and I believe the Secretary supports this—that the Executive Branch of government and the Congress ought to agree on what the structure is to be used for.

There is no way that I can sit before this committee and say that we have had any kind of commendable record on the construction of this facility. I testified before you, as you remember, in 1975 to the effect that the Department of Transportation could take the lead and we would maintain a portion of the facility.

I am suggesting to you that, because of this continuing downhill record, responsibility be placed in somebody else's lap. But before this committee appropriates money to any source, I think the clear use of the facility ought to be defined.

Mr. YATES. Would you say that, knowing what the condition of the roof is? Doesn't the roof have to be fixed?

Mr. HITE. Yes, it does.

Mr. YATES. So you would go ahead and fix the roof and you would want, one, $50 million to fix the roof?

Mr. HITE. Oh, no, sir.

Mr. YATES. How much do you want to fix the roof?

Mr. HITE. We would want $10.5 million, of which you have already appropriated $2 million, sir.

Mr. YATES. The $2.3 million that we appropriated two years ago under the representation of the National Park Service would complete repairs to the roof?

At the last hearing it was indicated that would not complete repairs to the roof, but you now present to this committee the sum of $10.5 million would complete repairs to the roof and make the building a habitable structure, or shouldn't I have added the last part of that?

Mr. HITE. In point of fact, Mr. Yates, there are other problems within the facility which probably have to be corrected.

Mr. YATES. Such as what?

Mr. HITE. The office space, I am told—I haven't been up there—is a wasteland.

Mr. YATES. Does this relate to the stories you told the committee of large rats running through?

Mr. HITE. There are large rats, and mushrooms as big as palm trees are growing there as a result of the leaking roof. This is, I am told, a fact, Mr. Chairman.

Mr. YATES. At the last hearing I requested you to come back and tell us what you wanted to do. How much money do you want to spend? What do you want to do with the building? Just a few minutes ago you said you didn't want to spend anything.

Mr. HITE. It was my understanding we would come back to you with an Administration position, and I believe that what the Secretary enunciated here is an Administration position that we are not pursuing the Visitor's Center concept any further.

RESPONSIBILITY FOR UNION STATION

Mr. YATES. That is what you are not going to do. What are you going to do?

Mr. HITE. The facility should be rehabilitated as a national landmark. We agree with that, and we agree that someone should receive the funds to fix the facility up. We have not had an admirable record.

The Park Service is not a major construction agency. I feel that some agency should be appropriated the money to renovate the facility on behalf of the government. I have a position, but it is just my position.

Mr. YATES. What is your position?

Mr. HITE. That an authority ought to be established and somebody ought to be given the responsibility to finish the structure and eliminate the parochial bickering, of which I have been a part, between two agencies——

Mr. YATES. Between you and Transportation?

Mr. HITE. Yes, sir—that desire to use the facility. The whole focus of what should be done with the facility has changed since 1968, with the emergence of Amtrak, with the gas crisis, and things that make rail passenger traffic much more attractive.

Mr. YATES. How does the Reagan proposal to cut back on funds for Amtrak fit into that thesis of yours?

Mr. HITE. I haven't spoken with my colleagues at Amtrak, but I presume there would be a continuing rail service requirement in the northeast corridor, particularly to Philadelphia, New York and Boston. I would think that the provision of 1,200 or 1,400 space vehicle parking would make such commuter opportunities very attractive to the businessman for one day or a few days.

Mr. YATES. Are you going to ask OMB for sufficient funds to finish the work and take care of the other rehabilitation needs?

Mr. HITE. I haven't discussed that with the Secretary.

Secretary WATT. I feel totally detached from this.

Mr. YATES. I am going to attach you to it because it is your responsibility.

Secretary WATT. I will assume that responsibility, but I have not focused on it yet. This Administration has not made a recommendation to this committee or to the Congress as to which agencies ought to have it. As Dick Hite has outlined, it is a mess, and we will focus on it and address that situation.

We didn't create the problem; we inherited it, and we will have recommendations at the appropriate time, I trust, and dispose of this thing——

Mr. YATES. By "we", do you include Mr. Hite?

Secretary WATT. He is now on our team.

Mr. HITE. To some extent I inherited it.

Secretary WATT. I feel quite detached from it. You are correct in saying——

Mr. YATES. How long do you want? Obviously the roof is going to get worse unless funds are spent. Will the $2.3 million we appropriated for the structure protect it in any respect?

Mr. HITE. I am told it will fix 30 percent of the roof structure.

Mr. YATES. Will it fix the barrel part?

Mr. HITE. Yes.

Mr. YATES. Will the rest of the roof leak?

Mr. HITE. They feel it will, but I am told you can spot patch it.

Mr. YATES. Will passengers be able to use the structure as a station?

Mr. HITE. If the barrel is fixed.

Mr. YATES. The $2.3 million will fix the barrel?

Mr. HITE. I am told so, but I haven't seen any estimate.

Mr. YATES. That means you are going to require approximately $8 million for the rest of the roof?

Mr. HITE. Yes, sir.

Mr. DICKS. Is that going to be a fiscal year 1981 supplemental or in the fiscal year 1982 budget?

Mr. BETTENBERG. The decision on how to fund that has not yet been made.

Mr. DICKS. So it could be either? The supplemental looks like it is going to be rather late, so this could be added if you find out what you want to do in time. Is that a possibility?

Mr. BETTENBERG. Yes.

Mr. YATES. How long do you want before you come to us with a program?

Mr. HITE. Mr. Secretary, may I make a suggestion. I testify before Mr. Yates on your account on April 3, I believe.

Secretary WATT. Do you think you can corral all the new appointees and make us responsible for Union Station in 30 days?

Mr. HITE. I was thinking of discussions with the Office of Management and Budget.

Mr. YATES. You have to get a budget approval up here.

Mr. HITE. Yes, sir.

Mr. YATES. Otherwise, that building is going to collapse.

Secretary WATT. Let's shoot for that date and see if we can't get it. I think your concern is wisely expressed. It would be inappropriate for you to make a recommendation for a proposal until we know what we are going to do with the building and have definite answers. That should be our responsibility.

Mr. YATES. It is your responsibility now. You have a building with a bad roof and a roof that threatens those who use the structure. The committee wants to cooperate with you. We want to save that building if we can, but we are still appalled and in shock by the amount of money that has been spent.

Secretary WATT. It seems unrealistic, but let's see if we can't get something by that April 3 date.

Mr. YATES. Mr. McDade?

Mr. MCDADE. I yield my time to my colleague.

Mr. YATES. Mr. Dicks?

IMPROVING ROYALTY COLLECTIONS

Mr. DICKS. Mr. Secretary, I noticed in the headline of your press release, "Interior Secretary Watt Realigns Program, Stresses Management Improvement and Stewardship Initiating Deep Budget Cuts." Yesterday there was an article in The Washington Star, "War on Waste Urged on Hill."

In it there was a quote from Donald Scantlebury, Chief GAO accountant, from a House hearing yesterday.

> Many agencies have not aggressively attempted to collect accounts owed the government. Many agencies concentrate on carrying out programs disbursing funds, but the other aspect, seeing that the government gets back every dollar it is entitled to, those things don't get the same level of concern.

Last week we had testimony from the USGS in which they estimated that today about 10 percent of the royalties owed by the oil and gas industry from leases of land for oil and gas drilling are not being collected.

USGS estimates that we lost somewhere around $270 million in fiscal year 1980, will lose over $400 million in 1981, and we have lost as much as $700 million between 1977 and 1981. We are losing $1 million a day in these uncollected fees. Next year that would be closer to $2 million a day and, in fact, we have received some informal estimates it may be as much as $3 million a day.

In fiscal year 1990 the oil and gas royalty collection system will generate in excess of $20 billion to the U.S. Treasury. That is only 9 years away. If we continue to allow 10 percent to go uncollected,

we will be losing more than $2 billion a year to the oil industry by 1990.

The tremendous losses are the result of an outdated, antiquated, collection and accounting system——

Secretary WATT. The losses to whom?

Mr. DICKS. It is total leases, most of which are in oil and gas companies of this country. At least that is what GAO said in its report. We asked them about this. We said, who are the primary beneficiaries of these leases, and they said it is the oil and gas companies—not that I am making an issue or blaming any of this on the industry or on you, by the way.

Secretary WATT. I don't take any blame. I dread next year's hearing, but——

Mr. YATES. You aren't through with this one, yet.

Mr. DICKS. There are some problems and I understand—I have talked to Mr. Hodel about this, and others in your department—you are working on this and you are very concerned about it as well.

I would like you to address three major issues that we are concerned about. First of all, how long will it take us to get in place the kind of collection system that will allow us to be able to collect the money that is owed the Federal Government? Two, can we get a system in place that will allow us to go back and get the $700 million that is owed the Government that has gone uncollected in past years? Three, there are regulations that have been frozen by the Reagan administration that would allow interest payments and penalty payments to go into effect on those accounts that are overdue. It is estimated that at any one time 18 percent of these accounts are overdue. Quite frankly, it looks like a real mess to me.

We have also been told in the last few days since the prior hearings and discussions we have had that there now is discussion of abandoning the contractor—I don't have any interest in who the contractor is, I don't even know his name—and going into a competitive bidding situation that would delay moving ahead and putting this new sub-account system into place by another nine months, with attendant losses of revenues into the Treasury.

At a time when we see the Youth Conservation Corps being ended, when we see frantic cuts in historic preservation and other things this committee has an interest in, other programs the country has an interest in, and a real concern about waste in government and balancing the Federal budget, all the things to get a good economic program for this country, it seems to me this is just unconscionable.

The only thing I can say is that it seems to me the Secretary and the Under Secretary are going to have to provide leadership in addressing the issues I have raised. I would like to know what we can do about it.

Secretary WATT. Thank you. We have raised the issue. The first week we were in office I wrote the Governors of this nation, asking them to help us correct those situations. We were on top of that, and I, too, was appalled. So, what you have said is not new. This issue has been before the Department of Interior for years.

Within the first week I was on the job, letters went to every state that produces oil and gas, asking the Governors to assist us because they are getting 50 percent of the royalties.

When the Governors were here for their Governors' Conference, I met with 12 of the Governors from the oil producing states. We have communicated with the industry, and we are moving ahead to change what is an appalling situation. We have given our leadership on that.

We have met with the GAO, with the Inspector General's Office of the Department of the Interior.

OFFICE OF THE INSPECTOR GENERAL

Mr. DICKS. Do we have a new Inspector for the Department of Interior? I understand the rest of them were all fired.

Secretary WATT. We do not have a lead man. That doesn't mean the office is depleted. The political appointees were relieved——

Mr. DICKS. Do we still have an office?

Secretary WATT. Oh, absolutely. When I came into this position, I kind of visualized the Inspector General's Office as one guy and a secretary up there. When I got the record I think Wednesday——

Mr. HODEL. There are more than 145 investigators.

Secretary WATT. We think if we are going to get rid of the fraud and abuse, you have to utilize those tools at the command of management.

So, we have had all our new and prospective appointees meet with the GAO people to outline the actions that we think can be launched to reach these objectives.

ROYALTY MANAGEMENT IMPROVEMENTS

We have to change the accounting system you are talking about. The past Administration asked for a supplemental in 1981. We reviewed that, and we think it would be foolish to rescind that. We are asking for additional monies in the Reagan budget.

Mr. DICKS. What about the regulations that were frozen?

Secretary WATT. I signed the paper earlier this week to see those would be published to get that underway. There is no subject I would rather have had you bring up at this time because we are on top of that all the way and have done everything management can do to address the problem.

Mr. DICKS. As I understand, the contractor involved is an 8(a) contractor and that they have sub-let Arthur Anderson to do some of the work here. The department is saying we may not be able to let them continue doing this, and that we may need a competitive situation that would delay the date for nine months. We were told just a week ago the system would be in place, or part of the system would be in place.

Secretary WATT. I have not been briefed on that, and I do not know of any delay. The regulations are something that would be complied with under the law.

Mr. DICKS. All I am saying is this was first studied in 1975 in the department. There was a GAO investigation in 1979. So, there has been a history of interest in this, but we don't seem to

have gotten anywhere in terms of correcting the problem. I know you are going to change that.

Secretary WATT. That is why I am the Secretary now.

Mr. DICKS. The point is, could you let us know?

Mr. Hite, can you testify on this?

Secretary WATT. I would rather respond to that later because we are taking command of the situation. It is deplorable. We are taking control of the situation, but I don't know about that particular issue.

The new management team will address it. If you like, I can respond back to the committee on that specifically, but whatever the USGS reported to you on that, I am unfamiliar with because the last directive that I had given to that group was that we would go full steam ahead to get this thing underway and under control.

[The information follows:]

ROYALTY MANAGEMENT

As has been noted, there may be a slight delay in implementation of the Improved Royalty Management Program of the U.S. Geological Survey (USGS) since the system development contract expired at the end of February. A new contract must now be competed under the Federal Procurement guidelines. Departmental staff and the USGS have taken action that this contract is expedited.

The USGS has begun an intensive in-house effort to collect and consolidate the data required under current directives of the Improved Royalty Management Program to minimize the impact of any delay on industry. This data will be converted to accommodate the existing system formats and will also be retained for use upon implementing the new system.

The USGS estimates that the new contract will be awarded during the current fiscal year, and plans to use funds made available through the fiscal year 1981 supplemental request to support the new contract. The project is among the Department's highest priorities and it will continue to receive the attention of both Departmental and USGS staff.

We have the cooperation of the Governors, we have the cooperation of the Indians on this matter, and I think we are going to get the cooperation of the oil companies on this because when there is a delay in reporting or deficiencies in reporting, there is an opportunity for fraud.

We cannot tolerate that. Whether it is mismanagement or fraud, everybody loses. That is why I interrupted you earlier. It is not just the oil companies that may be losing, it is everybody who loses.

RESPONSIBILITY FOR LEASING AND ROYALTY COLLECTION

Mr. DICKS. We asked GAO who was involved.

We have divided responsibility here. BLM, as I understand it, handles the lease arrangements. USGS is involved in collecting the royalties that are due. When they testified, they told us they don't know who leases from the Federal Government. It was an appalling lack of information.

Do you think we should still divide this responsibility between the Bureau of Land Management on one side and USGS on the other side? You seem to have systems that are not compatible.

Secretary WATT. That is under review at this time for several reasons. The other side of the equation is USGS has been one of the great scientific institutions of America.

Mr. DICKS. They are not one of the great accounting firms.

Secretary WATT. That shouldn't be the basis of their reputation. They are an earth science group of impeccable integrity. When you make them police an activity, that subtracts from the monies that should be available for scientific endeavors.

Mr. DICKS. Do you agree there ought to be a late charge and a penalty charge for those people who don't pay their royalty payments on time?

Secretary WATT. Yes.

Mr. DICKS. People who are late paying their taxes have to pay a penalty.

Secretary WATT. I am sure that will be the case.

NEW DEPARTMENTAL APPOINTEES

Mr. YATES. Let us continue with what Mr. Dicks was talking about. At any rate, you are using your impeccable integrity. An article in The Washington Post yesterday talked about the Reagan team, "A regulatory U-turn," and it talked about some of your prospective appointees. One of those is the nominee to run Interior's Bureau of Land Management, Mr. Robert F. Burford of Colorado. I read from the newspaper—A speaker of Colorado Houses two years ago, was a leader in the legislative effort to legitimize the Sagebrush Rebellion which seeks to turn BLM land over to the states. As a cattle rancher Burford has a permit to graze his stock on 33,614 acres of public land in Colorado. Why would a person who has a permit to graze—which is his right apparently—be appointed to head that unit.

Secretary WATT. We are looking for people who know what needs to be done. We are looking for people with experience. We are looking for people with proven ability to get the job done. Bob Burford is that man.

Mr. YATES. What about the question of a conflict of interest that may arise?

Secretary WATT. Those issues have been addressed and I am sure the Senate will address them. He has met all the legal requirements which are extremely burdensome, but he has met everybody's approval from the Office of Government Ethics, the White House staff and the Department of Interior ethics lawyers. There is no problem on that whatsoever.

Mr. YATES. He will be allowed to continue to graze his cattle on the 33,600 acres of public land?

Secretary WATT. Mr. Burford is being required to dispose of those, as he has substantial other funds. The financial sacrifice Mr. Burford is willing to make to serve his country, as well as the other people we are bringing into the department and the government, is unbelievable. You have probably seen my financial reports and I did not make many sacrifices. I do not have much but some of these people are really making sacrifices and I commend them for it. Mr. Burford is making a tremendous sacrifice on many of these financial issues.

Mr. YATES. I had not seen his financial report but how did he comply with the requirements of the ethics law?

Secretary WATT. He will be disposing of many of the assets he has that may have raised a question in anybody's mind.

Mr. YATES. Well the article says he intends to seek transfer of his permit to graze his stock on BLM lands in Grand Junction, Colorado, to one of his sons. Is that considered an adequate disposal?

Secretary WATT. It is under the law that Congress has passed.

Mr. YATES. I think Congress is at fault then, if that is the law, because certainly I think it is the intention of the law that there be no control maintained or retained.

Secretary WATT. Correct.

Mr. YATES. Is his son totally removed from Mr. Burford's influence?

Secretary WATT. His son is a mature individual, an able man. These are not minor children.

Mr. YATES. That I understand.

Secretary WATT. It is all on the record.

Mr. YATES. That is why we are going into it. We are doing it on the record.

Secretary WATT. By the time he goes through confirmation it will be painted on the record in every conceivable way. He will act accordingly. He is an extremely talented man with judicial perspective that will cause no problems in that area even if he were to retain them. He is a man of unquestioned commitment and loyalty.

Mr. YATES. Would it be wrong for him to accept that job and retain his grazing permit?

Secretary WATT. The ethics lawyers say he needs to dispose of them.

Mr. YATES. He needs to dispose of them and the ethics lawyers say it is all right for him to dispose of it to his son?

Secretary WATT. Yes.

Mr. YATES. Do the ethics lawyers say it would be all right for him to dispose of it to his wife?

Secretary WATT. No.

Mr. YATES. They do not say, or that it would not be appropriate?

Secretary WATT. In reporting what the Members of Congress and appointed people have, they are to list the assets they own, and those of their wives and their dependent children. That is the way I report my assets and I think the way Members of Congress report their assets.

Mr. YATES. Does the son have a grazing permit of his own other than this assignment?

Secretary WATT. I do not know his son.

Mr. YATES. You do not know whether he has a grazing permit?

Secretary WATT. No.

Mr. YATES. Are grazing permits permitted to be assigned by their owners?

Secretary WATT. I think the answer is yes, they can be assigned. I am not sure about the finality but they are part of the estate tax. When you die you get labeled for them and you have to have a property right to buy and sell but they cannot be transferred.

Mr. YATES. When I asked that question some time ago I was told usually they go with the land. When the base land is sold the grazing permit for public land usually goes with it. Is my interpretation of that right? Do you know the answer to that, Mr. Hite?

Mr. HITE. No, sir.

Mr. YATES. Do you, Mr. Bettenberg?

Mr. BETTENBERG. No.

Mr. YATES. Do you have general counsel here?

Secretary WATT. I better get it for you.

Mr. YATES. Let us get that answer. Is there any limitation on the amount of acres that any single lessee may obtain for grazing?

Secretary WATT. Maximum amount?

Mr. YATES. Yes.

Secretary WATT. I do not know the answer to that. I am not aware of one.

Mr. YATES. May a person in the grazing business obtain leases for acreage to the amount of 100,000 acres for example or 200,000?

Secretary WATT. When they get into that dimension they put them in allotments and they share in it and I do not know that there is a specific limitation. I simply do not know the answer.

Mr. YATES. Would you provide the answer for the record please?

Secretary WATT. Yes.

[The information follows:]

ASSIGNMENT AND LIMITATION OF GRAZING PERMITS

Grazing permits can be assigned from one person to another, provided: (1) approval of assignment shall not disrupt the stability of the livestock industry in the general area where the public lands are located; (2) when a grazing permit is being transferred from one base property to another base property, the transferee shall file with the Bureau of Land Management a properly completed transfer application in advance for approval; and (3) the application will contain the following information: (a) the amount of grazing preference being transferred, (b) a legal description of the old and new base property, (c) the concurrence of any lien holder, and (d) the consent of the owner of the base property from which the transfer is to be made.

The Bureau of Land Management does not have any limitation on the acreage of public lands that a single lessee can control for livestock grazing. The applicant must own or control sufficient private property to support the licensed livestock when they are not on public lands.

Mr. YATES. Would you furnish the committee with a copy of the opinion of the lawyer who gave you the information upon which action approved Mr. Burford for the job was taken after assignment of his permits to his son.

Secretary WATT. I do not know if there is one that has been written of if we can get one. I know in my personal dealings and in dealing with the other appointees as well as Members of Congress the listing of assets to be disclosed refers to those assets owned by a government official, Member of Congress or Presidential appointee, the spouse and dependent children. That is the way the discussions were with me and with others so when the conversation came up about Bob Burford it fit in with what I understood and with the forms I had filled out. I did not see a written opinion and I do not know whether there is one.

Mr. YATES. Does my memory serve me correctly—did former Senator Hansen not turn down consideration of Secretary of Interior because he did not want to give up his grazing permits?

Secretary WATT. That is correct and Bob Burford is willing to do it.

Mr. YATES. And you consider that the assignment to his son complies with that?

Secretary WATT. Yes.

Mr. YATES. Why could Senator Hansen not have done the same and assigned whatever permits he had over to a member of his family?

Secretary WATT. He probably could have. I do not know the corporate arrangements that he might have had so I can not speak to Senator Hansen's financial situation.

Mr. YATES. Is this the corporate arrangement or an individual arrangement?

Secretary WATT. I do not know that answer either.

SENATE CONFIRMATION PROCESS

Mr. MCDADE. Mr. Secretary, is this position subject to Senate confirmation?

Secretary WATT. That is correct.

Mr. MCDADE. At the Senate hearing will the proposed individual be catechized by the Senators who are going to vote whether or not to confirm him on this subject and a host of others?

Secretary WATT. That is correct.

Mr. MCDADE. We all know that the conflict-of-interest laws that are written by the Congress ought to be perhaps subject to review. Some people have kept out of government. I remember when President Johnson used to talk about the sacrifices that Robert MacNamara made. Whether you agree or disagree, he was Secretary of Defense and I disagreed with many of them—it cost him millions of dollars to serve his country because there was an absolute divestiture proposal at that time. The most recent occupant of the White House established a blind trust with his lawyer to handle his business which serves Federal subsidies. This is a cumbersome, complex and difficult area and I will assume this individual will respond directly when he goes in front of the Senate committee on his confirmation.

Secretary WATT. That is the case.

Mr. DICKS. Will my friend yield? I agree. Does not the White House Office of Personnel coordinate this activity. This is not something handled by the Department of Interior. This is something handled at the White House and there is a uniform practice for reviewing the individuals under consideration. Also, there is a policy that he qualify based on congressional requirements. That all comes to fruition when you have a confirmation hearing.

Secretary WATT. It is more complicated than that. There is the Office of Government Ethics that Congress created very recently and they have their battery of people that you go before and they give you advice. The White House staff, as you point out Congressman, has their lawyers and they have given you a battery of advice, and then you have to come to the Department of Interior.

Mr. DICKS. You have to do that too.

Secretary WATT. And go through ethics. These three groups and the lawyers do not always agree. One says that asset is fine, that is obviously no problem. Some other guy has to be tougher and he says you have to get rid of it. They did not chip away at me since I did not have anything, but with the people who did—it is unbelievable. So you are dealing with these three groups. A man like Burford says I am willing to serve. What should I do? They start

dragging things from him and he feels like a plucked chicken. Is that the cost of public service?

Mr. McDade. We tried to get a fellow to run for Congress of the United States who served as district attorney. He was a prominent local official. He had been a leading vote getter in his area, a thoroughly reputable man. He had nothing when he started his career in law. When he completed his career he had a law firm with 15 or 16 lawyers. Also, he had three children in college. We approached him to run for Congress. He thought he would like to do that. He was in his mid-50s, and he thought he would like to end public service and join this body. Then he found out what he had to do. He found out that he had to divorce himself completely from the law firm. Because he had earned income, not unearned income, he was not eligible to serve. That distinction is one that is disgusting in my opinion, but one that Congress made. Those who are already millionaires with hundreds of thousands of dollars of unearned income, may serve in Congress. We had a man from Long Island, a Democrat, who was an asset to this Congress. We all knew him well; this was Otis Pike. He said that he quit before he became unethical and before he had to go to work on a non-conflict basis. We also lost a man from Pennsylvania because he was not a man who had independent wealth or could afford to divorce himself from the only asset he had, which was his law firm, that he built up over the course of his life.

CONFLICTS OF INTEREST

Mr. Yates. The article also says—and I think it is well that we take this opportunity to clear the air in some of the things that have been said. I must say that as far as I have been able to determine in the brief time you have been in office you have achieved much more publicity than anybody in the Cabinet. At any rate, this also says:

> Both Harris and Watt are in a somewhat unusual situation on strip mining. James R. Harris of Indiana, Reagan's choice to head Interior's Office of Surface Mining. As a state senator, he pushed the resolution that led Indiana to join a Supreme Court case challenging the constitutionality of the strip-mine law he will be sworn to uphold.

I continue from a later paragraph.

> Indiana, at Harris' behest, is fighting the strip mine law in the Supreme Court. Watt, a president of the Mountain States Legal Foundation in Denver, filed a friend-of-the-court brief supporting Indiana and Virginia at the same time he was being selected as Interior Secretary-Designate.

I assume you withdrew from the case?

Secretary Watt. That is correct.

Mr. Yates. And you said:

> During the Senate confirmation hearing, Watt promised to "recuse" himself from decisions that might affect companies or individuals that had provided financial support to Mountain States, or in which his foundation had been involved.

Secretary Watt. That is not correct. That writer has repeatedly written that and I am glad to put on the record that it is not correct.

Mr. Yates. State what the correct situation is.

Secretary WATT. I have recused myself from giving advice or counsel on any cases past or present in which the Mountain States Legal Foundation is involved. That goes way beyond the canons of ethics or any responsibility but I did not want to leave any clouds there. I am not recusing myself from any policy matters that might impact upon or relate to a lawsuit.

Mr. YATES. What about the questions of suspending regulatory action on the distribution of federally subsidized irrigation water to large growers in the West? I am reading from the article:

> Officials of the Farm/Water Alliance, a lobby for big growers, in a December letter thanked Watt for his past help in litigation aimed at stopping the regulations. Interior official maintained last month that Watt's decision did not represent a violation of his promise. And Farm/Water this week contended that its letter to Watt was in error in attributing legal aid to him.

Would you like to comment on that?

Secretary WATT. It is hard to comment on. It is difficult to give a smart answer to a dumb statement. The facts are there is no violation. We did suspend the regulations so that we could get our hands on that particular program. It is a policy decision that I did make. It is totally consistent with the recusal statement. Senator McClure put something in the Congressional Record on it. I went before the Senate committee right after the first story came out on that. Interestingly enough it was not brought up. There was just nothing to it. Senator McClure's statement is in the record. The recusal statement is in his statement and explains it thoroughly and completely. The record is abundantly available to anybody who would care to read it before they write.

Mr. YATES. That article was dated March 5th. There is one that was dated February 21. The answer you just gave to the previous article answers the thrust of this.

Secretary WATT. It is the same writer.

Mr. YATES. But I do not understand what your departmental attorney, Moody Tidwell, meant when he is quoted as saying that. I would appreciate your comment. He rejected the notion that was a conflict of interest. You sensed that but he says first "Secretary Watt did not take the action, Dave Russell did." Dave Russell is identified as whom?

Secretary WATT. He is a Deputy Assistant Secretary of the Department. He signed the documents at my instruction. I made the policy decision.

Mr. YATES. So Moody Tidwell was wrong in separating you from the responsibility because as the head of the agency it is your responsibility?

Secretary WATT. I take the responsibility for that and there may be an instance where I will be recused and other people in the Department will have to take actions with regard to a particular lawsuit.

GOOD NEIGHBOR POLICY

Mr. YATES. Let us turn to another subject. It is kind of interesting. President Reagan kind of wrapped a friendly arm around former President Roosevelt in some of his public addresses and you have done the same thing. You keep talking about a good neighbor policy. A phrase that was initiated by President Roosevelt.

Secretary WATT. I am sure somebody before Roosevelt said it too.

Mr. YATES. Well, I checked William Saffer's dictionary last night—dictionary of political statements. There was somebody else, who I do not remember, but President Roosevelt made it famous when he stated it was his foreign policy for Latin America. Now you state it as your policy, your internal policy for the western United States.

Secretary WATT. It is our policy for the entire United States.

Mr. YATES. But that is not what you have been saying. You have been talking about writing letters to the western governors telling them about your good neighbor policy.

Mr. DICKS. He is trying to bring us back in the union.

Mr. YATES. But he wants to give you special privileges. There are other parts of the United States too that have an interest in the Department of Interior.

Mr. DICKS. It is called affirmative action. We have been discriminated against.

Mr. YATES. You have a kind of complex, I guess. Anyway, as I remember the statement, you are going to initiate a good neighbor policy and the thought came to me as to whether or not Secretary Andrus, who came from Idaho, was not a good neighbor. Would you consider that Secretary Andrus was not a good neighbor to the people of the West?

Secretary WATT. It is my contention that the Department of Interior has not and is not now being as good a neighbor as it should be and your comment on Roosevelt originating the good neighbor phrase is great. I did not realize that, but it helps demonstrate that being a good neighbor is not a partisan issue and it does not need to be a Republican or Democratic policy. The management of the Federal lands, whether they are in eastern states or western states, needs to be done in a way that makes you pleased that you joined the Federal Government, that you are cared for and respected, and that your interests will be given some acknowledgement and attention before decisions are made that would cripple or damage your own interests.

Mr. YATES. But as I remember my history, and correct me if I am wrong, western states came into the union; the lands that the Federal Government retained were to be retained by the Federal Government and the states in their charters agreed to that. Did they not?

Secretary WATT. Basically that is correct.

Mr. YATES. Then why do you want to turn land back to them?

Secretary WATT. I never proposed that and I am not now proposing that and will not propose it, except in a few instances where we are transferring small parcels of lands to meet public interest issues in those localities where they are locked in and not allowed to expand to meet population pressures. For example in Tonopah, Nevada, they sought to get access to some lands adjacent to the high school for athletic events. They made application to the Department of Interior's Bureau of Land Management so that they could open up their high school program to these adjacent lands for athletic purposes. Thirteen years later the Department of Interior gave them a permit to give them access to these lands for athletic events adjacent to the high school. That is not being a good neigh-

bor. That is inexcusable and we have to see that these lands are transferred for public purposes such as that. I have written cities and counties and governors and asked them to help us identify those lands which are needed in the Nation's interest, the public interest, the local interest, and we will aggressively pursue that program. We are not talking about massive land transfers. We are talking about small parcels of land.

Mr. YATES. What is a small parcel?

Secretary WATT. It is going to vary with the community's identification of needs. In this particular case, this high school determined it was eight acres.

Mr. YATES. I read from the press release of the Department of Interior dated February 6th, 1981, which identifies the example of what happened at the high school in Tonopah, Nevada and it says—this is your language—"Secretary of Interior James Watt announced he was asking western governors to identify small parcels of federally administered land which local governments need to acquire" and so forth. Then you say, "The Department of Interior's land management must be more responsive to community needs especially in those western states where much of the land is owned by the Federal Government."

Why just the West?

Secretary WATT. That is where we have communities landlocked by Federal ownership. As Congressman Dicks points out, we need to go where the real problems and abuses are most evident and that is what we are planning to do.

Mr. YATES. That is not what you said in your press release and I take your press releases as gospel.

Secretary WATT. I did not realize you read them. I will be more careful.

ACQUISTION OF SMALL PARCELS OF LAND

Mr. YATES. "Secretary of Interior James Watt announced he was asking western governors to identify small parcels of federally administered land which local governments need to acquire to meet community needs for schools, hospitals, parks and other public purposes." Why would eastern governors not have the same kind of community need for schools, hospitals and parks? Why would you not write to them?

Secretary WATT. Because it would be a rare instance where that community would be landlocked by Federal lands.

Mr. YATES. Suppose it is not landlocked but suppose there is a community that needs five acres or eight acres for a football field like they did at Tonopah, Nevada, and it is right next to their school?

Secretary WATT. We would be willing to look at it. In most instances the lands in the eastern part of the states are acquired land for specific purposes, such as wildlife, wetlands or parks. I am not eager to sell off those precious lands that have been acquired through congressional action for a firehouse. They have been committed to a particular purpose and we want to protect that purpose.

Mr. YATES. Mr. Regula.

Mr. REGULA. Mr. Secretary, would you not have the problem also of making trades in order to eliminate in-holdings in some key areas? Would this be part of a land program where you get equal value and eliminate a problem at the same time.

Secretary WATT. We would like to do that. I think that would be a smart program for the Federal government to encourage.

Mr. YATES. I think you said that. You are talking about land acquisition through property exchange in the press release. Is my memory correct?

Secretary WATT. It is in my statement that I gave you today as well as other places.

LAND EXCHANGES

Mr. YATES. How do you do that for a park like Santa Monica. What do you exchange those lands for?

Secretary WATT. We would have BLM lands that would not likely be as valuable for recreation purposes that we could trade out to the private land owners to make particular lands available for to a congressionally authorized area.

Mr. MURTHA. Why did it take 13 years to complete the transfer of that small parcel of land?

Secretary WATT. I cannot imagine. It is inexcusable in my opinion. I do not think there is any way to justify it.

Mr. YATES. You were at the Bureau of Outdoor Recreation at the time, were you not?

Secretary WATT. I was there during part of the time.

Mr. YATES. Would that not fall within your jurisdiction?

Secretary WATT. It was the Bureau of Land Management, and the Bureau is the big owner of lands in the West and they are the ones that caused the hostility.

Mr. REGULA. What is the legal procedure to dispose and/or to exchange lands, what safeguards exist?

Secretary WATT. Identification of land and the appraisal value and notifications and procedures is pretty well spelled out in the statute and regulations. It is pretty limited and the biggest check on it is the unwillingness of one bureau within the department to trade with another bureau in the department. We are determined to break that barrier down.

REDUCTIONS IN THE SIZE OF NATIONAL PARKS

Mr. DICKS. In a recent interview printed in the Seattle Times you stated you may attempt to reduce the size of some of our national parks. Have you identified national parks which you feel ought to be reduced in size?

Secretary WATT. I have not.

Mr. DICKS. When do you think you will have your review accomplished?

Secretary WATT. We have not even initiated a review. Different interest groups have expressed a desire to assist us on that and we will take any kind of assistance we can get on any management problem we have.

Mr. DICKS. There is nothing firm at this time?

Secretary WATT. That is correct. We do not have a hit list for parks if that is what you are asking.

Mr. DICKS. Prior to inauguration it was rumored then that Secretary Andrus would designate Mount St. Helens as a National Monument. What is the position of this Administration on that issue or have you taken a position on it?

Secretary WATT. I have not focused on it.

Mr. DICKS. It is something I would hope you would consult Members of the Congressional delegation from the Northwest about because that is an issue that is extremely sensitive and we would certainly like to have a chance to talk to you about it.

Secretary WATT. Let me assure you that you will not be surprised by anything like that.

NORTHERN TIER PIPELINE

Mr. DICKS. In that same interview in the Seattle Times the reporter asked you a question about the northern tier pipeline and you said "It appears to be moving along fine." I want to just ask you, have you had a chance to look at the situation regarding the northern tier in any detail yet?

Secretary WATT. I have not looked at the situation in any detail yet. I had a short briefing on it and I was told there were no decisions confronting the Secretary. Once I learned there was not a decision that had to be made, I addressed other situations that required decisions. I have not looked for any problems yet. They just found me.

PARK POLICY

Mr. YATES. As I understand, you said that there is no hit list on parks.

Secretary WATT. That is correct.

Mr. YATES. I heard you looked with less than a pleasurable eye on the Golden Gate, Gateway and Cuyahoga, the so-called urban area. These were not the kinds of parks you thought should receive the same kind of treatment as the Western parks.

Secretary WATT. I think I have made some specific comments on the Golden Gate situation. Other than that, I do not know what the source of your material is.

Mr. YATES. If I am wrong just correct the record.

Secretary WATT. We have not even focused on some of those parks. I did comment in a news conference about Golden Gate. My judgment is that with the backlog that we have for park land acquisition, that we need to focus and be sure we are really acquiring the type of land that we need and we ought to be willing to look at boundary changes to see if we really need all these inholdings. I think management must be flexible and always willing to look at it. I do not think that the Park Service enhances its prestige or its ability to provide playgrounds in that type of urban park. I think the National Park System should preserve the greatest gems in America and protect those lands with intensity for the benefit of people. In fact in my proposal that will be submitted to the committee on March 10, I am asking for $105 million in new

dollars that the Carter budget does not have for restoration of our national parks. They have been deteriorating.

Mr. YATES. You do not consider Cuyahoga a playground park. You used the phrase.

Secretary WATT. I have not focused on Cuyahoga. As I commented earlier in a prelude to this, I think it would be an inappropriate area for the National Park Service to have. But I am not passing condemnation.

Mr. DICKS. Have you identified these areas already?

Secretary WATT. No, we have not. I am talking conceptually and philosophically.

PACIFIC NORTHWEST FISHERIES

Mr. DICKS. Another question that relates to Pacific Northwest and if you do not have an answer that is all right. I just want to raise it with you. Last year Congress passed the Salmon and Steelhead Conservation and Management Act of 1980, a bill which is extremely important to the fisheries of the Pacific Northwest. Basically this bill was enacted because of the so-called Boldt Decision in the Northwest that requires us to share the fishery there with the Indian tribes. But some, in Congress, felt that there was a need to pass a bill that would allow us to enhance that resource and thus this bill was enacted last year. First of all, do you intend to support the provisions of this bill with a budgetary request when needed? This is something I think is not just in your jurisdiction; it is also within the jurisdiction of the Department of Commerce. This is something we would like the chance again to discuss with you because it is another issue that is very important to the people of the Northwest, and Congress passed this bill overwhelmingly last year.

Secretary WATT. My attention has not been focused on that either so I will need to defer on an answer there.

SUPPORT FOR LAND AND WATER CONSERVATION FUND

Mr. DICKS. I have one further question going back to the confirmation hearings. During the Senate hearings in your confirmation you testified numerous times that you supported the Land and Water Conservation Program. I would refer you to pages 28, 29, 56, 102, and 479 of your testimony. Do you still support the program, that is as much as you did two months ago?

Secretary WATT. I probably support it more enthusiastically. There has to be a follow-up question to that.

Mr. DICKS. Then why have you moved to eliminate this program?

Mr. REGULA. Mr. Secretary, the head of the Bureau of Outdoor Recreation utilized it very effectively for several years and it was very helpful to many regions.

Secretary WATT. It has been a great program.

Mr. REGULA. You talk about it like it is deceased?

Secretary WATT. For this year, it almost is. It has been a great program that has assisted local and state governments in providing recreation opportunities and I am delighted with the tremendous response that the states have given to this program. When I was named Director of the then Bureau of Outdoor Recreation in 1972,

we had a moratorium that year as well. The moratorium in 1972 was initiated because the states were not capable of obligating the funds at or near the level that Congress was appropriating funds. The backlog was enormous.

When I came into the Department of Interior this time I found that the states are keeping up very well with an increased program. They have matured and have handled themselves exceptionally well. In fact today we find that the contributions made to the states for recreation activities are a very small percentage of their total budget and this is heartening to me. Here is a program that has been very successful and we have put seed money into it. We have matured the staffing capability of state and local governments and they are handling the situation beautifully. It is a phenomenal program, just great.

WILLIAM O. DOUGLAS WILDLIFE REFUGE

Mr. REGULA. We will talk more about that later. USGS told the subcommmittee the William O. Douglas Wildlife Refuge has higher potential of oil and gas than the NPRA. Will you permit the geological survey to begin seismic work on this refuge immediately?

Secretary WATT. I have not been briefed on that. I am not familiar with the William O. Douglas Refuge area site. I have not been on it, but I know where it is of course. If that is an area of land that could compatibly handle the refuge responsibilities plus oil and gas activities, that could be in the national interest and we ought to look at it to make those value judgments. I have not made those value judgments.

PRIVATE LEASING IN NATIONAL PETROLEUM RESERVE IN ALASKA

Mr. AUCOIN. I want to commend you on your statement about the NPRA. I have been a lonely voice who argued that we could stop the drilling program and let the private sector come in and save the taxpayers a substantial amount of money and I am delighted that this Administration is moving forthrightly. I think this committee did as you suggest do a very good service led by the other Members and myself who supported the idea of an accelerated leasing program; but I have always felt that drilling four wells a year at $130 million was something that I questioned whether we were really getting enough information out of that to justify it. The private sector, the oil companies came in last year and testified they could come in in a massive way, look the entire area over and give us the kind of exploration program that would produce results. I commend you for your position on that. I also commend you for having an Under Secretary from Oregon who understands the problems of the West and a person we have had a privilege of working with over the years who we think is just an outstanding public servant.

Secretary WATT. He is a great guy too.

Mr. AUCOIN. He is the former head of Bonneville Power Administration and someone who has done a good job in the West. Even though he was from the other party we have always been able to work with him in a constructive way.

IMPROVED TARGETING OF CONSERVATION EXPENDITURES

Mr. Dicks was asking about land and water conservation funds and when we look at the proposed budget, America's new beginning program for economic recovery, page S-9, I was interested in what was proposed for the Department of the Interior and under the phrase, "Improve targeting of conservation expenditures" we find budget authority for 1981 of $573 million and $91 million outlays. Tell me what is meant by improved targeting of conservation expenditures. Would you want to answer that Mr. Bettenberg?

Secretary WATT. Are you refering to the title at the top.

Mr. YATES. What does that mean, "Improved targeting?" As I take it, it is a use of a budget term. What is included within that?

Secretary WATT. I am probably the author. We need to be good stewards of the land and I think that before we continue grabbing for the acquisition of more land, we need to properly take care of that which we now own. The reports that I received from every source indicate that the National Park Service has not properly been able to keep up with the management of the lands it has within its charge. So we are asking that there be a moratorium on further acquisitions the National Park system at this time, with the exception of emergency situations. We are asking for increased funding to restore and improve that which we already have. That is what we are saying with regard to targeting of conservation expenditures. Let us get the greatest results for the commitment.

Mr. YATES. Do I take it then your response limits that item to the acquisition of lands? Are there any other items that would be included within that or is this solely acquisition?

Secretary WATT. We are reducing the request for funds for grants to the states for recreation as well.

Mr. YATES. Is that within the so-called targeting conservation expenditures?

Secretary WATT. Yes. You will see below that it says Land and Water Conservation Fund and we are asking that there be no funds in the 1982 Reagan budget for state grants.

Mr. YATES. What are urban park grants that you talk about?

Secretary WATT. It is the urban park and recreation fund.

Mr. YATES. But state recreation grants are not to have a moratorium, are they?

Secretary WATT. There will be, I hope, continued purchases by the states, but we will not be asking that funds be made available for them.

Mr. YATES. But you are going to zero it out in 1982?

Secretary WATT. That is our recommendation to Congress.

Mr. YATES. Federal land acquisition will be cut in 1981, through a rescission of $105 million and, a budget amendment of $290 million in 1982, is that correct?

Secretary WATT. That would allow an appropriation of $45 million for the hardship cases that are under court action or state problems. It provides for flexibility there.

Mr. YATES. Mr. Regula has a question.

MULTIPLE USE MANAGEMENT

Mr. REGULA. Mr. Secretary, I know that you favor the multiple use management of the public lands. Do you think that this can be accomplished with emphasis on the conservation aspect of it because I think you, as I listened, treasure this asset and would not want to alter it for the future.

Secretary WATT. Absolutely. We have a responsibility not only for this generation but for future generations and that is the stewardship charge that I have taken up the oath to enforce and do it enthusiastically. So there is the short-term and the long-term and we are balancing values for the people through time. It is not an easy task but we need to keep our eye on the future as well as the present.

Mr. REGULA. In light of that, do you think the existing Mining Act needs revision? I have seen some areas out there that have been despoiled because they have old leases and they do just enough to keep the thing up while at the same time leaving a very unsightly situation.

Secretary WATT. We are moving aggressively on reclamation activities and I think we will catch up, and it is a catch up situation. I do not see any need for major revision of the Mining Act. It has been amended through the years.

IMPROVING ACCESS TO PARKS

Mr. REGULA. I have another question. With the emphasis on making these parks usable, will you be expanding items such as the preservation system? You will be emphasizing education programs, greater public awareness and we have a special interest because this committee supported some efforts to get an education program with films and teacher aides and so on. Would you just outline some of the ideas you might have in making these parks more accessible to all the people of this nation.

Secretary WATT. Yes. That is a theme I want to bring to the Department of Interior. Within the conservation community there are warring camps. There are those who are strict preservationists who do not want anything to be touched and there are those who are more inclined to make parks accessible to the people so they can enjoy them. You try to balance those interests as well. Everything is a balancing act at the department. If I err it will be on the people's side.

Mr. YATES. I am going to hold you to that.

Secretary WATT. I think that Congress has wisely set up the Park System to preserve these lands for the benefit of this and future generations for people. To set those great beautiful parcels of land aside, and then make it difficult to have access defeats one of the charges Congress gave from the very beginning. So I think we need to have a better preservation system. I think we need to have better access and better crowd control, if you please. Different techniques need to be introduced to preserve these lands, but allow them to be preserved for a purpose, and that is for use by people. I have a people-orientation and that causes some criticism, as the Chairman pointed out, and which you have read in the newspaper. I think people ought to have access to the public lands but the

access needs to be measured and controlled so that we do not trample and destroy that which we are trying to preserve. But to lock it up and deny families from the midwest to come to Yellowstone National Park or Teton would be a travesty and I will fight those situations. We must not set the parks aside for an elitest community that is only the wealthy.

Mr. REGULA. Do you include wilderness in this?

Secretary WATT. Yes, sir.

Mr. YATES. The Forest Service now permits mining and the granting of permits for exploitation of their land for mineral purposes and I guess for drilling for oil. Would you favor the same kind of a program for the national parks?

Secretary WATT. Absolutely not.

Mr. REGULA. You are saying in effect that wildernesses should be made on a multiple use basis in terms of people participation. There should be greater access?

Secretary WATT. Yes, but we have severe limitations. There are parcels which are preservation land. We are not building roads or building lodges or allowing motorized facilities in there. But we need to let people use them, and that is the point. Now the use we give to wilderness areas is a restricted use and I think that is appropriate.

Mr. REGULA. How do you see the role of concessionaires in making these parks more available to the public and what do you see as the future in that field?

Secretary WATT. We are going to have to involve the concessionaires to a greater degree to provide services to the people. The reason is budgetary limitations, and, candidly, in many instances the concessionaires can do a more effective and efficient job than can the Federal Government. So we need to put the proper relationships and understandings together to see to it that concessionaires have an opportunity to make a profit and return on their investment and to protect the resource base within the environmental concerns that we are trying to address by the creation of the parks. I think that we have some innovative ideas that are now circulating around the Congress and the Department of Interior and the conservation community that have real promise in this area. I think that within the next several months some exciting things will be available to us.

PAYMENTS IN LIEU OF TAXES

Mr. REGULA. Mr. Secretary, I have not been a fan of the payment in lieu of taxes program and I am a little disturbed by the evidence that we might be trying to accelerate that. I am not sure that I see where the service is being performed by the governmental subdivision. True, there may be a large piece of land in a given jurisdiction but that land is not producing any children for the schools. It is not putting any strain on the budget. They are not providing police or fire protection in most instances. They are actually benefiting from the influx of the tourist dollars into the economic stream and I wonder why we should have the program to start with. I welcome your comment. And secondly why it should be accelerated rather than decelerated.

Secretary WATT. In most of the instances in the western states, those lands are not contributing significantly to the economy at all. They are the rejects of America. Those lands were opened up to the public for homesteading so the private people could go out and claim them.

Mr. REGULA. You are talking about BLM lands?

Secretary WATT. That is right. Nobody claimed them. They were uneconomical. They were not beneficial to investment and they are the remains. And some of them have become very valuable because of mineral potential, but their surface values are very limited. They have some potential and we are trying to maximize that potential, but they do not contribute large amounts of funds to the community and yet a responsibility goes with the ownership of land. I think that the Federal Government has a responsibility to local governments to pay its fair share for roads, for policing, and this modest program that Congress initiated a few years ago I think helps establish that good neighbor policy where the owner faces up to his responsibility. We must not allow that double dipping, as I call it, where the county has this land and then there is a coal mine or O&C timberlands or something like that which brings great wealth. Too frequently we judge the Federal lands on the basis of Grand Teton or Yellowstone or Rocky Mountain National Park. Those are the exceptions to the West.

PREDATOR CONTROL PROGRAM

Mr. REGULA. One last question. I read recently you supported the predator control program which I think is primarily for the purpose of eliminating coyotes. Now this basically is for the benefit of the ranchers. How do you square this with the fact that the Administration is talking about requiring user fees on the waterways, requiring user fees for the boating people on the lakes where the Coast Guard is providing service? In other words the Administration is emphasizing that the people who get the benefits should pay the bill. That does not quite fit with the idea that the government should be paying for predator control which is benefiting those who are on private land and/or are lease holders on some public land.

Secretary WATT. You have phrased the issue perfectly. In fact I am going to take the transcript and hand it to our people because that is the challenge before us. It should not be a heavily financed Federal program, but we should not prohibit those private interests who need to bring about a balanced management program. But we do have some substantial losses on the public lands and we need to see that the public land base is protected. We need to let the private people bring that perspective when meeting their needs, and to retain a Federal presence so that does not get out of hand as well. I think we should not come forward with a massive Federal program to do this job which benefits the private interest. I like your philosophy perfectly and, hopefully we will fit a new program into what you outlined.

DEPARTMENTAL PLANS FOR PREDATOR CONTROL

Mr. LOEFFLER. I want to welcome you as someone from the Southwestern United States. I would like to take it further and see

if you can describe what your preliminary plans are within the department in the predator control area as far as funds required for programs in this transitional time frame that you might be looking at. What is the status of the study that is ongoing to provide joint consideration by the Department of Agriculture as well as the Department of Interior of the ADC program. Could you comment a little more on that?

Secretary WATT. Congressman I think it would be premature for me to do that. It is a volatile issue in the political realm and I do not want to prejudice the development of a good program that will meet all the objectives by speaking about the program that is not yet finished.

MORATORIUM ON LAND ACQUISITION

Mr. LOEFFLER. I can appreciate that but I look forward to working with you on that. I would like to go back to your basic proposal relative to a moratorium on the acquisition of new Federal land. What will be the guidelines that you will follow—where do you put this moratorium in place? Where is the cutoff? How will you determine which Federal lands that might be in the bill will not be acquired pursuant to your moratorium?

Secretary WATT. Right now it is quite simple. The moratorium is absolute and complete and the case would have to be made aggressively to overcome that moratorium. We are leaving a little wiggle room for Secretarial discretion because of the hardship cases, but the moratorium is in place today and it is going to be tough to penetrate. We are asking this committee for $45 million to handle the hardship cases but they are going to have to prove they are hardships. We need to know where we are going before we let other lands be acquired. We have to prove we are good stewards of what we have and I do not think we have measured up as well as we should.

Mr. LOEFFLER. I concur with your approach. Again I think that is the way we should pursue it.

EMPHASIS ON LESSER-KNOWN PARKS

Mr. REGULA. One question, Mr. Chairman. Mr. Secretary, do you have any plans to emphasize some of the lesser known parks? I have tried a little test with various people and I have asked them to name ten national parks. Most people name three and then they are stuck. Yet there are over 200 of them. I am curious if you have thought about a program of that type.

Secretary WATT. Yes, we will continue to try to advertise. When I was at BOR we initiated this kind of program. I do not know whether it died of neglect after I left, but with the energy crisis that occurred then and has continued, we need to let Americans know that there is beauty throughout the land, not just in the western states.

Mr. YATES. I will accept your amendment.

Secretary WATT. We need to encourage them to visit at home and take advantage of the programs there. I think it is that thrust that really has matured the capabilities of state and local governments. People want to enjoy what they have at home. It is ridicu-

lous to get in a car in Ohio and drive to Wyoming to see Yellowstone National Park. You beat yourself out on the highway and it is not much of a vacation.

INTERIOR'S RELATIONSHIP WITH AMERICAN INDIANS

Mr. YATES. Before we break for lunch I want to go into the question of Interior's relationship with the American Indians under your various concepts. I want to initiate it by a discussion of the trusteeship relationship with the U.S. government. There is an article that appeared in the Chicago Tribune on Thursday, March 5th which says: "U.S. Indians Make Own Deals." This relates to a contract between the Northern Cheyenne Indians and Atlantic Richfield for development, by that company, of oil and natural gas on the tribe's 433,000 acre reservation:

> The deal is noteworthy, one, because it is a deep split among the tribal members as to whether it should have been done; and two, because the stand taken by the U.S. Interior Department which is responsible for upholding the treaties and laws pertaining to the nation's 500,000 Indians. In essence the Department not only lets Northern Cheyennes cut their own deal but agrees to bend the law to enable them to do it.

Mr. YATES. Were you aware of this?

Secretary WATT. That was done last year I believe. Is that the Montana situation?

Mr. YATES. Yes.

Secretary WATT. That was done within the last year or so.

Mr. YATES. Can somebody tell me in what way the law was bent?

Secretary WATT. We are not prepared to discuss that one. We did not do it. I do not know that anything was wrong. I do not know that anything was right. I do not know about it.

Mr. YATES. Will you bring general counsel with you when you come back? You are coming back at 1:30.

Secretary WATT. I will come back whenever you want.

Mr. YATES. I would like somebody here who can tell us about this deal. The reason I asked the question I assume that you are going to do the same thing. Correct me if I am wrong. I assume you are going to do the same thing with respect to permitting Indian reservations to make their own deals for leases with mineral and oil companies.

Secretary WATT. We are enthusiastically encouraging the Indians to continue their course in self-determination at the pace they choose to take it. I have tremendous confidence in the Indian leadership to which I have been introduced. I think it is impressive and shows great capability and I would hate to frustrate it too much. The frustration the Indian community will come up against is the limitations of whatever the law is.

Mr. YATES. That is the question I should like to pose for you. In a deal of the kind that I have described which is a source of some controversy among the tribal members, apart from the questions as to when the tribe agrees upon the action to be taken, what does this kind of a transaction do to the trusteeship relationship which the Federal Government has with Indian tribes? For example, a number of years ago the Crow in Montana entered into a lease with various coal companies for their land. Fifteen years later it was determined that the Crow did not receive adequate compensa-

tion for the coal even though the lease had been approved by the Department of Interior. In this case I would like to know first whether the Department of Interior approved this kind of a deal. This deal between Arco and the Cheyenne is point one. Point two, suppose it is later determined that Arco for some reason took advantage of the Indians as is alleged by some of the members of the tribe. For example, one says that the deal was drafted by Arco and the tribe lacked necessary expertise to bargain well. Is the Federal Government responsible for the deal then at a later time. Is there always an incipient or latent liability upon the Federal Government because of the trusteeship relationship? Do you see the point I am making?

Secretary WATT. I see it and I see the problems. We are living with the problems of such past dealings.

Mr. YATES. Those are past dealings but you are doing them now too and I am wondering to what extent. How do you protect the interests of the Federal Government and the Indians? You have the responsibility for both in this instance. How do you propose to do that? I would like you comment on that when you come back at 1:30.

APPOINTMENT OF DIRECTOR OF BUREAU OF LAND MANAGEMENT

Mr. YATES. Mr. Secretary, as I sat over my salad and soup in my office, my mind went back to the conversation about the person you appointed to the BLM whose attributes you so glowingly placed into the record. And just as I was worried then, I am more worried now.

The reason you ascribe to putting him in that post is he is the kind of man who has been doing the grazing and, therefore, knows the problems relating to it. But isn't that responsibility more than just knowing what happens from a grazer's viewpoint?

Isn't there the necessity for protecting the lands of the United States, for the people of all the United States, and that a grazer has only a limited privilege for a limited time, and the land goes on forever and has to be protected in perpetuity?

What assurances do you have that the gentleman will protect the rights of the people of the United States in that land?

Secretary WATT. The reality of any appointee is his character, and Bob Burford is a man of experience and proven character, one with whom you could trust the most valued aspects of the country.

He is the kind of man we need in many government positions.

Mr. YATES. Wouldn't it be better to put him in another one then?

Secretary WATT. He could fill many positions adequately and do a superlative job in those in which he has had experience.

This job is one that draws him to it. Bob Burford is a graduate of Colorado School of Mines where he has a degree in mining engineering. He has worked for some mining companies. He has been a rancher for many years. He has been one who understands the values of land, and some of the great conservationists in this country are those who have lived on and off the land because they learn of sustained values that go through time.

This is not a one-generation rancher; his parents were ranchers.

Bob Burford was trusted by those people who know him best to go to the state legislature, where he was elected to be Speaker of

the House, because he is a man of proven character who has the ability to balance the public interests and to see to it that the values that the public needs will be protected and served.

He is a uniquely qualified man, and I am proud to have him on the team and am looking forward to his confirmation.

Mr. YATES. I accept your endorsement of Mr. Burford. The reason that I raise the question is that this committee has been active for a number of years in placing funds in the budget for the protection of the Nation's natural resources, including the public lands.

We have placed money in our bill over the budget to protect the lands from overgrazing and we are interested in trying to obtain a fair repayment for the use of the public lands from those who obtain permits.

Can Mr. Burford be as dispassionate and objective in carrying out the objectives of this committee and of the Congress as set forth in the Public Lands Management Act, as one who is not a grazer?

Secretary WATT. Absolutely. He understands the values of the land and he has chosen to live on the land for most of his life. He comes from the land, and he appreciates it probably more than most types of people who have not lived on that particular land.

Mr. YATES. I am sure he appreciates it if he has leases for grazing.

The question in my mind is whether one who participates in grazing would be willing to give up the use of the land to permit it to be rehabilitated if it needs rehabilitation, and how often he would permit himself to do that.

It would be interesting to find out what the condition of the acreage Mr. Burford has leased is. Is it being overgrazed, how many AUMs there are and how it is being used and so forth?

Of course, that is the reason I raise the question of a possible conflict of interest. He has an economic thrust that requires using the land for his cattle in order to get the best economic return that he can.

As a Director he has a directly opposite thrust at the time in order to protect the land from overgrazing.

How can he reconcile these two forces? Do you think he can?

Secretary WATT. Absolutely. A rancher that is a good rancher is not there for the short term. Bob Burford is not a first-generation rancher on these lands and if you are going to live on these fragile lands you must have a vision for more than one season.

Mr. YATES. Right.

Secretary WATT. He has been there through time, and that is the test of character, through time.

That family has proven itself to be a good manager of the land base, and they have endured through time. He understands those values.

One of the concerns I have, Mr. Chairman, is that we not posture ourselves in such a way that if a person has ever been exposed to an area, he is not qualified to govern. It would be terrible to say to a personnel selection committee that this man has never been in a national park, therefore, he is qualified; or once he is in a national park position, he can never go into another one because he may

benefit and get some enjoyment out of it or that he has done so in the past.

We ought to get proven, experienced people who understand values, and the first qualification for a government position should not be ignorance.

Mr. YATES. I would agree with that. I would rather have somebody who has knowledge and is impressed with the public interest.

Secretary WATT. Absolutely.

Mr. YATES. Rather than have somebody whose economic fortunes may depend upon his use of the land. That is the thing that troubles me.

Secretary WATT. That issue has been explored thoroughly, and I am satisfied a man of his stature and character will not exploit that situation.

QUALIFICATIONS FOR GOVERNMENT SERVICE

I am sensitive to this other issue and I try to say it facetiously, although I am not sure how facetious I should be.

Mr. YATES. Don't be facetious about him.

Secretary WATT. No; I am referring to myself. When President Ford selected me to serve as Vice Chairman of the Federal Power Commission, one of the qualifying characteristics that made me attractive over other people was that I knew nothing about the oil and gas industry. What a shame. He checked me out on——

Mr. YATES. What do you mean "a shame"?

Secretary WATT. One of the qualifying prerequisites for government employment was I didn't know anything about the issue.

Mr. YATES. I wonder whether you are stating that right. You may be denigrating him by the way in which you put it. If I can interpret it in speculation, what President Ford must have had in mind was that he wanted no one who had any kind of affiliation with the oil and gas industry rather than one who didn't know anything about it.

Secretary WATT. Because——

Mr. YATES. Will you accept that amendment?

Secretary WATT. I would hope that is the case.

Mr. YATES. Yes.

Secretary WATT. Past experience doesn't necessarily draw with it an inability to make an objective decision. In the political environment too often we say, gentlemen, so and so worked for X, Y, Z; therefore, he is incapable of making a decision in the national interest. That is not a healthy situation.

I take some ribbing and some criticism because I am a westerner. Everybody has to be from somewhere.

Mr. YATES. As a mid-easterner, I get the impression the westerners have an inferiority complex.

Secretary WATT. We have been beaten so badly we have started to act that way.

Mr. YATES. You haven't been beaten at all.

Mr. REGULA. I haven't met any of them with an inferiority complex.

Mr. YATES. Some of the westerners are congratulating each other across this table on being from the west. Isn't it great? Then your statements are all in favor of doing their best.

Incidentally, I hope as a result of the hearing this morning when you issue a release it won't say you have written to the governors of the western states asking them whether they have any lands they want to acquire. We have a lot of installations in the east as well.

Secretary WATT. The first time I write a letter suggesting somebody might want to give a little fish and wildlife region or national park in the east, I would have my hide skinned. That is not my intention, as I announced, and I try to be careful about it.

MEETINGS WITH EASTERN GOVERNORS

Mr. YATES. Will there be a meeting with eastern Governors?

Secretary WATT. I have been meeting with them already.

Mr. YATES. With the eastern Governors?

Secretary WATT. Oh, yes.

Mr. YATES. Why don't you issue a press release saying that Watt has been meeting with eastern Governors, too?

Secretary WATT. I didn't want to embarrass them.

Mr. YATES. I don't know that I should make any comment.

Secretary WATT. Maybe for the record I better tell their names.

Mr. YATES. Sure. I think it would be helpful.

Secretary WATT. I met with Governor King of Massachusetts, Governor Byrne of New Jersey, Governor Brown of Tennessee, Governor Dalton of Virginia. I consider those eastern states.

Mr. YATES. I think most people do.

Mr. REGULA. Thank you, Mr. Chairman.

BUREAU OF LAND MANAGMENT APPOINTEE

I share some of your skepticisms but I would say this about it, that at least in the case of Burford he is up front about it.

Secretary WATT. Oh, yes.

Mr. REGULA. We know it is there. I think he will be under perhaps a greater burden to achieve equity than he would be if he were not to have this pecuniary interest. If we were to say he is disqualified, probably by the same token we would say every Member of Congress is disqualified because actually people have unearned income, our disclosure is not as complete by any means as is the case with this candidate.

I don't think it would be any greater handicap for him to serve in this capacity than for the Members of the House and the Senate who likewise have pecuniary interests in——

Mr. YATES. But we are prevented by law from entering into Federal contracts with the government.

Mr. REGULA. I understand that and this is a preexistant contract that he had that he is divesting himself of in a family context.

Mr. YATES. That is the inauspicious part of it. Perhaps I am being unduly unfair to him but I know just putting myself in that position, if I had an asset of that kind and gave it to my son, we are pretty close, and we talk and we understand, and our economic interests are pretty close.

Mr. REGULA. I understand.

Mr. YATES. It seems to me it isn't a total divestiture. That is my impression.

Mr. REGULA. You are really raising the issue of whether it is a divestiture.

Mr. YATES. I said total divestiture. The Secretary said it was. He said Mr. Burford's son is an individual, mature, of mature years, and he has assured the committee, if I understand him correctly, that it is a total divestiture to his son.

Secretary WATT. Yes.

Mr. YATES. Is my interpretation correct?

Secretary WATT. I have been advised by all these groups of lawyers who are experts in the laws that Congress has laid down for the executive appointees, which are different from congressional people, have been met.

Mr. REGULA. Is his son a rancher?

Secretary WATT. Yes.

Mr. REGULA. Does he have adjacent land to this of his own or is he leasing his father's land?

Secretary WATT. I don't know that.

Mr. YATES. Will the gentleman please yield?

Mr. REGULA. Yes.

Mr. YATES. Has Mr. Burford disclosed the information relating to what Mr. Regula is asking?

Secretary WATT. All this material is filed with or will be filed with the Senate committee. I have not read it. I have been told he passed the test with three sets of lawyers.

Mr. YATES. Would it be convenient to furnish the committee with a copy of that? I would not want Mr. Burford to do anything he thought he shouldn't do but I would think Mr. Regula's questions deserve to be answered and if this material answers those questions, I think this committee would appreciate it.

Mr. HODEL. Mr. Chairman, to push this question a bit further, what it raises is the whole question of grown children's holdings. So far as I know, there is no present thought that if my son, an adult, acquires a piece of property that is affected by the Department of Interior, that creates a conflict of interest.

It may in fact create a conflict, but there is no statute that says it creates a conflict.

The issue that you are questioning here relates to the manner in which he acquires it which is by transfer from the parent.

Mr. YATES. That is right, an assignment.

Mr. HODEL. But it doesn't alter the net bottom line effect as you indicate with your son. You talk with him and perhaps you know he has a great interest in that matter. Does that constitute a conflict in the eyes of the Congress or should the question be confronted more broadly if you happen to have given him the asset?

Mr. YATES. I suppose this is a question for the Senate to pass on. The disclosure has been made. The question is then up to the Senate on the matter of the confirmation. As to whether in its judgment this is the kind of relationship that they think might not permit Mr. Burford from carrying out his full responsibilities, that is their question.

If we can get a lawyer's opinion also for the record that he has complied with the law, that would be helpful, too, as far as our interests are concerned on this committee.

Secretary WATT. The Senate does require a letter from the Office of Government Ethics to that very point. We will see that you get a copy of that letter.

[The information follows:]

BUREAU OF LAND MANAGEMENT APPOINTEE

Appropriate actions to clear any and all conflicts of interest are in the process of completion and will be finalized subject to confirmation by the Senate. The proposed settlements of these issues have been approved by the Department's Office of Government Ethics, have been checked with and approved by White House personnel, and are now approaching final form, ensuring that the transfers meet the Internal Revenue Service requirements that transactions between close family members meet the arms-length requirements.

At the present time, two separate attorneys are working to make sure that there are no legal infractions with the IRS or violations of Bureau of Land Management rules concerning transfers of permits.

A copy of all supporting documents and clearance letters will be provided to the Committee upon Mr. Burford's confirmation.

USER FEES

Mr. REGULA. Mr. Secretary, this is in line with what I asked this morning concerning user fees. My question is this. Will there be a concerted effort on the part of the Department of Interior to ensure that fees charged for land rental and access to water will reflect true market values, and how do you propose to achieve this type of equity?

It seems to me in keeping with the Administration's policy of saying you should pay the fair market value for any benefit you receive from the government, that there ought to be a new look at user fees whether they be for land leases or whether they be for water rights.

It has been my impression in travelling out there that perhaps there is a differential in cost between the private lands that are leased at a much higher rate than the public lands.

Secretary WATT. With regard to the grazing interest, Congress has set those fees. They are not to be set by me or Mr. Burford. Congress sets them.

Mr. REGULA. But you can make recommendations, and part of the action of the Congress would be predicated on the fiscal data that might be provided by the Department.

Secretary WATT. I am being advised on this. On grazing fees, there is a fixed formula established by Congress on which I have no input at all. It will be our philosophy to try to move these programs so that the beneficiaries do pay fair market values and if those things get out of whack, we ought to make recommendations to the Congress.

I have not focused on this one. Congress has set the formula and we like to follow the wisdom of Congress if we can, which is every time.

Mr. REGULA. Thank you, Mr. Chairman.

SAGEBRUSH REBELLION

Mr. YATES. The impression I have from this morning's testimony is that Tonopah is a usual example. Would you say that was usual?

Secretary WATT. If it happens once, it is too often and it has happened more than once. I don't know if it is usual or unusual,

but there has been an attitude of distance, arrogance, and disregard for local interests in too many interests and that has given birth to what we now call the sagebrush rebellion.

Mr. REGULA. What does the sagebrush rebellion consist of? Eliminating that kind of attitude or turning lands over to the states?

Secretary WATT. It consists of establishing a good neighbor policy which will eliminate that attitude.

Mr. YATES. Does the sagebrush rebellion carry with it returning any of the Federal lands to the states?

Secretary WATT. Some of the proponents of the sagebrush rebellion advocate that. I do not.

Mr. YATES. So to the extent that you have the power to do so you will not turn back any of the Federal lands to the states except for the kinds of transfers of small holdings such as you described this morning?

Secretary WATT. That is basically correct. We do not anticipate any massive land transfers. It will just be that which is done in the public and national interest.

Mr. YATES. That is true but what is a transfer of a massive interest? Obviously, eight acres is not a massive interest.

Secretary WATT. Some Members of Congress are calling for large transfers of land to state governments. I am not advocating that.

Mr. REGULA. Will the gentleman please yield?

Mr. YATES. Mr. Regula.

Mr. REGULA. Mr. Secretary, I don't know the statutory requirements but wouldn't any disposal of land be circumscribed very carefully with a lot of statutory protections?

Secretary WATT. Absolutely. There are a lot of statutory limitations on that. You are absolutely right.

Mr. YATES. You have somebody here relating to the Indians?

NORTHERN CHEYENNE AND ATLANTIC RICHFIELD

We are glad to have you. The question I have raised with the Secretary with respect to the Indians is the question of the trusteeship responsibility of the Federal Government. Are you a long-time member of the Department of Interior?

Mr. CANAN. Yes, sir.

Mr. HODEL. May I say, Mr. Canan was called immediately following the hearing this morning and was asked if he could accumulate what information he could regarding the transition.

He is the Acting Deputy Assistant Secretary. He is a long-time employee of the Bureau.

Mr. YATES. You are familiar with this Northern Cheyenne and Atlantic Richfield lease?

Mr. CANAN. I became familiar in a hurry, sir.

Mr. YATES. Good. Has that lease been approved by the tribe?

Mr. CANAN. Yes, sir.

Mr. YATES. And by Arco, so it is in effect?

Mr. CANAN. And by the government.

Mr. YATES. Is the government required to approve that lease?

Mr. CANAN. Yes, sir.

Mr. YATES. Just as it is required to approve all leases of Indian tribes?

Mr. CANAN. Yes, sir.

Mr. YATES. What happens if that lease turns out to be an improvident lease? Will the Federal Government have any responsibility arising from its trusteeship relationship?

Mr. CANAN. I think if it can be shown, Mr. Chairman, that the government did not exercise good judgment in approving the lease in terms of the situation as it existed, then we would have some liability, not necessarily because of hindsight, but if you can show that the government should have used better judgment at the time.

Mr. YATES. And the department went into this very carefully?

Mr. CANAN. Yes, sir.

Mr. YATES. Judging from what the article says about the lease, apparently it is a pretty good lease for the tribe according to this. Arco paid a $6 million bonus which was distributed among the 4,600 members of the Northern Cheyenne band and $1.3 million to aid the financially strapped tribal government.

In addition, the tribe will receive a 25 percent share of production revenues.

Mr. CANAN. Yes, sir.

Mr. YATES. Is that gross or net revenues?

Mr. CANAN. That is gross revenues, a royalty rate in effect.

Mr. YATES. That is better than the government gets on its other leases.

Mr. CANAN. Very much so.

Mr. YATES. That raises another question.

Why doesn't the government do as well on its leases with the companies?

Mr. HODEL. In those instances the Indians aren't negotiating them for us.

Mr. Chairman, in asking Mr. Canan about this lease, I was informed also in this particular instance the tribe began the process because of its interest in obtaining a lease on the lands and sought interested participants.

Shortly after——

Mr. YATES. Is this a part of CERT?

Mr. HODEL. CERT?

Mr. CANAN. This tribe is a member of CERT. They did not do any negotiating for the tribe.

Mr. HODEL. There was considerable interest expressed by oil companies and, as the tribe began negotiating with a handful of them, for those that appeared to be most promising, it invited in the USGS and the Bureau of Indian Affairs to assist them in a technical way.

Then as the contract was being negotiated it was approved by the Bureau of Indian Affairs for execution.

In answer to your question, it is always true that a trustee is potentially liable to a beneficiary if something was done wrong, but then it is a question as to whether good judgment was exercised.

Mr. YATES [reading]:

Some critics worry that the Northern Cheyenne agreement indicates that the Interior Department and its Bureau of Indian Affairs are going too far in their retreat from paternalism and are neglecting their trust responsibilities.

Others, however, say the issue merely reflects confusion resulting from the dramatic increase in energy negotiations between corporations and Indian tribes.

"There are a lot of cracks in laws affecting Indians," commented one private attorney, who noted that the BIA has been redefining its role in recent years.

The legal difficulty to be overcome was the requirement that the conveyance of Indian lands be done through leases that restrict the amount of land to be rented and limit the term of the lease to 10 years, according to Clyde Martz, the former Interior Department solicitor general involved in the Northern Cheyenne deal. ARCO, however, wanted to lease the land for 23 years.

The problem was skirted by calling the legal document an "agreement " instead of a lease. Martz withdrew his opposition to the deal after ARCO took the extraordinary step of promising not to sue the State or government if the deal falls through.

The agreement, negotiated between tribal members and ARCO officials, was finally signed in September. According to its terms, ARCO paid a $6 million bonus that was distributed among the 4,600 members of the Northern Cheyenne tribe, and paid another $1.3 million to aid the financially strapped tribal government. In addition, the tribe will receive a 25 percent share of production revenues.

Martz, who like other political appointees, resigned when the Reagan administration took office in January, said there currently are three or four such "agreements" between Indians and energy companies.

He said that Interior Department lawyers began polishing up proposed legislation to modify the old Leasing Act of 1938 and retroactively legitimize contracts such as the Arco "agreement."

Mr. YATES. Does that make sense?

ATLANTIC RICHFIELD AGREEMENT

Mr. CANAN. There was a great deal of discussion really that arose at the last minute when the document reached the Washington office and the Solicitor's office began to take another look at it. They raised technical questions, about whether this lease came under the provisions of the Mineral Leasing Act of 1938.

The 33-year period is, of course, the outside limit of how long Arco can continue to produce from this land. Normally in the leases at other places it says as long as production continues——

Mr. YATES. As long as the wind shall blow and the grass shall grow.

Mr. CANAN. It can continue indefinitely in most leases. This lease has a limit.

Mr. YATES. But that overlooks the question. I had the impression from law school a lease was an agreement while an agreement was not necessarily a lease. Do you agree with that? Are you a lawyer?

Mr. HODEL. Yes, I am. That is my recollection from law school.

Mr. YATES. Well, the Supreme Court has ruled.

Mr. HODEL. May I say, I understand that the Solicitor's office was actively involved in these arrangements and reviewing the contract lease and the result of the involvement was that the land available for exploration is withdrawn from availability for exploration within a 10-year period and that the only areas that remain within the agreement, rather than the lease for the 33-year period, are wells under active production.

That language may be the manner in which the land lease question is avoided.

Mr. YATES. What does the department propose to do with other so-called leases on Indian lands? Will you be following the same kind of procedure and calling it an agreement instead of a lease?

Mr. CANAN. I think, Mr. Chairman, that as a matter of policy we feel we should encourage tribes to take more initiative in trying to develop the kinds of agreements that meet their needs. It may well——

Mr. YATES. Even though the law is contrary. Shouldn't you have an amendment to the law?

Mr. CANAN. I think we are looking at the possibility the law will have to be amended to permit joint ventures, a service agreement type situation. The law may not be flexible enough to permit the kinds of agreements that some tribes would like to enter into. If that becomes the case, then I think we would have to come to the Congress and ask for a change in the law.

Mr. YATES. Could you in passing tell the committee why Arco or any oil company, for that matter, would be willing to pay a 25 percent share of production revenues to an Indian tribe and not to the Federal Government?

Mr. CANAN. I don't know that I can answer with regard to the Federal Government. I think what Arco is getting here is a large tract of land, some 440,000 acres, where they can have exclusive exploration rights over a 10-year period.

It gives them an opportunity to deal with one entity rather than many in a one-block area.

I am not sure what Arco saw as the advantage to them. We looked at it from the Indians' standpoint and felt it was a pretty good deal.

ROYALTY-BONUS RELATIONSHIP

Mr. HODEL. In another area, it is my understanding that the royalty-bonus relationship tends to work out economically. If the royalty is low, the bonus tends to be high, and conversely.

Mr. YATES. Are you able to enter into leases for royalty leases as the Cheyenne is?

Secretary WATT. No, this was a negotiated arrangement and we do most of our leasing arrangements on competitive bidding. Here there was no risk; they knew what they were going after.

As with coal, you know the Btu value, the sulfur content, exactly what you are getting. It is pure economics, as the Under Secretary is pointing out. It is a trade-off on bonus and royalties and how it works out.

Mr. YATES. Why couldn't you establish the conditions before you put a lease up for competitive bidding?

Mr. HODEL. We do.

Mr. YATES. Why couldn't you also provide for the royalties of 25 percent, for example? Wouldn't that work out?

Mr. HODEL. We can under the law.

Mr. YATES. Doesn't it work out better for the government than a bonus? At any rate, most of the countries of the world take that kind of deal, don't they? They take a percentage of whatever the companies are able to find?

Mr. HODEL. As do we.

Secretary WATT. We are experimenting now on outer continental shelf leasing arrangements to learn what is the best result.

CHEYENNE-ATLANTIC RICHFIELD AGREEMENT

Mr. YATES. At any rate, your lawyers approved this deal between the Cheyenne and Arco?

Mr. CANAN. Yes, sir.

Mr. YATES. And they were coming in order and saying we better get an amendment to the law, too?

Mr. CANAN. I think if this sort of pattern is in the broader proposals that some tribes are coming in with, the tribes are really beginning to look at all kinds of possibilities, and our lawyers are saying there will have to be an amendment to the law to encompass some of the types of proposals that are now being brought in.

Mr. YATES. Was Martz the lawyer who handled the deal originally?

Mr. CANAN. He was the Solicitor in 1980.

Mr. YATES. He didn't leave office and then represent the Indians?

Mr. CANAN. No, sir.

Mr. YATES. Thank you very much.

MINERAL LEASING ARRANGEMENT

Mr. LOEFFLER. If I might pursue the line you have been pursuing, Mr. Chairman, the government is in a position on a case-by-case basis then to negotiate the mineral arrangement or lease arrangement with the private sector; is that correct?

Does it function just as in the private sector? Do you have a set royalty interest that you must have at all times?

Secretary WATT. In this particular situation it was an Indian tribe that initiated the negotiation and the Federal role is that of trustee which is different than other leasing arrangements on the public lands.

Mr. LOEFFLER. In a leasing arrangement on public lands, do you have a standard arrangement on the royalty?

Mr. BETTENBERG. My understanding is 12½ percent, but the leases are on a competitive basis with bonus bids so everybody is competing for something with a set royalty.

Mr. LOEFFLER. So you make your judgment basically on the bonus rather than on the royalty?

Mr. BETTENBERG. That is my understanding on coal.

Mr. HODEL. The advice we received—being a lawyer I say from economists——

Mr. YATES. It is always a good defense.

Mr. HODEL [continuing]. Is that if you have a perfectly known oil field or coal field and you know its value and you put a fixed royalty payment on it, whether 12½, 25 or 50 percent, a calculation can be made as to the amount of money that can be bid as a bonus up front with that royalty payment against the assumed size of the resource that nets out the return to the developer.

Mr. LOEFFLER. I might say if we know there is a known reserve of oil or coal and it is significant, if we are looking at it from the government's standpoint as far as revenue to be generated, the bonus is still not the important factor—it is the royalty payment that you get that is important. The bonus is merely the drilling or excavation that takes place within a certain period of time.

Mr. HODEL. Of course, the reason you get great variety in the bids is that the parties bidding have different views of what is there, its value, and what it will cost to develop.

But if it were a perfectly known situation, theoretically all the bids would come in with the same bonus bids because they would

know the costs and the potential development and the net would be the same.

In theory, if you raise the royalty, you lower the bonus.

Mr. LOEFFLER. That is correct; in theory.

Mr. YATES. This is a man like Mr. Burford. He comes from the land—the oil land. So that is why he is a little skeptical of what you say.

ABANDONED MINE LAND RECLAMATION FUND

Mr. MCDADE. Mr. Secretary, we have had some discussions preliminarily about the status of the Abandoned Mine Reclamation Fund. There was some conversation about whether or not there might be a transfer of that *in toto* or for all practical effects. Has the department reached a conclusion on that?

Secretary WATT. We are presently reviewing that whole matter under the jurisdiction of the Office of Surface Mining. There is no agency, not even the BLM, that received as much criticism and caustic remarks as has OSM.

I am sure that is what has generated those concerns. The Office of Surface Mining has not been as responsive as most of us think it should be.

Mr. MCDADE. We have been forced to fund the pass-through provisions and there is no legal impediment to doing that. The Bureau of Mines does the emergency work around the country because OSM hasn't been able to keep up with it.

As you go into the review I hope you will keep that in mind because the Bureau of Mines has the expertise, the cadres established and has been able in my experience—and if my colleague Mr. Murtha were here he would agree—to get at these problems swiftly. They are going to confront you as they have confronted other Secretaries.

Secretary WATT. Yes.

Mr. MCDADE. So I would urge you to continue a mechanism where we take that earmarked trust fund account and get that money up front so it can get out fast.

Secretary WATT. I hear the point you are making on that.

FORMULA PAYMENT PROGRAMS

Mr. MCDADE. The user charge question that was brought up earlier is one that I want to pursue with you just a little bit because I have a two-part question for you. I have a conclusion. There is about $500 million that goes back to states that have public land under various formula grants, and I have some skepticism of that, as I mentioned to you.

It is almost as if this committee didn't exist for purposes of appropriation. It is an automatic return of about $500 million to those areas.

I have concerns about it because it is all publicly owned land. Whether it be mining or oil and gas leases, I wonder whether or not that isn't due for review.

The resources are owned by all the people of the United States. The fact that there is approximately a half million dollars that goes back and it is almost an off-budget action.

I think it is time you took a look at it. This committee doesn't have to appropriate that money. We have the authority to not appropriate it and fight it out later if we need to, but I think it is something we need to look at because of the strains on the whole budgetary process.

Secretary WATT. I think the philosophy behind your question is extremely valid. I think as we move into the eighties it is time we looked at all of these programs. I have just come through, with other Members of the Cabinet, a fascinating educational experience as we have looked at these great programs. No one is challenging the motivation or the value of something but as we look at the eighties, are the purposes of those acts still valid as part of the Federal purpose?

We are recommending to Congress across the board that many of these great acts not be funded in the future. That is a major departure from the past where, for example, Congress said it ought to be done so you pump out the money.

This President has shown enough courage to ask that basic question about all other kinds of things and we shouldn't limit ourselves and say, well, we will talk about some of these programs but won't talk about others.

I think we all have to review everything and approach it in that way. So I would encourage you folks and I am encouraging our folks to ask the same basic questions.

Mr. MCDADE. I am grateful for that answer because I think it is time they all had a thorough look to see what justifications still exist.

HARDSHIP CASES UNDER LAND AND WATER FUND MORATORIUM

Let us talk about the moratorium on the land and water fund for hardship cases. In the definition of hardship cases are you not limiting that to someone who has already been condemned and judgment accorded?

Secretary WATT. No. We don't mean to.

Mr. MCDADE. So if we have, for example, someone whose property is within the park area he also would qualify. We have a lot of them, as you know; there is a ten year backlog.

Secretary WATT. I think that is a hardship because once Congress draws the map they have limited mobility and it is most frustrating to be in that situation. Those can be hardship cases.

Mr. MCDADE. I am delighted at your response because I feel that way. As a matter of fact, I have a park in my congressional district that had a lot of growing pains and still does. The people who are in that circumstance are within the boundary but the property has not been acquired, nor has there been a judgment rendered with respect to the value of the property. So they are stuck.

Secretary WATT. I think the government has an obligation to be sensitive to those needs.

Mr. MCDADE. I have had conversations on the subject of historic preservation with my State Director, who I find very innovative. Do you know they took a station in Pittsburgh that was a landmark and standing idle, and today it is a thriving enterprise.

Mr. HODEL. You should give the station to the State of Pennsylvania.

Mr. McDade. This person told me if he could keep 10 or 12 people, he would be posed to go out to the communities in the event of a moratorium. I believe the national count is $4 million for the State Directors. One of the witnesses who came in was a mayor from a little town in Pennsylvania who became interested in the virtue of the historic district—and his plea to me was that he thought he could live with the cut if he could keep the small, limited number of experts at the state level to interface with local governments to generate the kind of private investment that can create jobs and can turn a community around.

He obviously is not advocating the department's position but he had the guts to come forward to say, if he can keep the infrastructure there, take a moratorium, he would at least be able, once that moratorium is lifted, to get into the business rather quickly and even without the grants be able to encourage citizenshp because of the "carrots" that exist in the Internal Revenue Code for developing landmark properties. I believe you have zeroed out the $4 million, too, haven't you?

Mr. Hodel. That is correct.

Mr. McDade. It is an item I wish you would take a good, hard look at. Maybe it would be something that you want to recommend to us; instead of going all the way, plan to keep that professional cadre around to be of assistance.

Secretary Watt. I think the attitude this man presented to you is most encouraging, and I have heard this repeatedly from the land and water conservation side, as well as from the historic preservation side. We have seen a maturity in the last few years that should make us proud, and I am personally proud to see the growth and recognition of historic values that has been assimilated in local and state governments.

I think with the moratorium we are going to see the fallout and see where the people really are committed. I think we are going to be very proud of the program.

The volunteer spirit of this historic preservation movement is just phenomenal. The amendment Congress made for write-offs and depreciation tax credits has really caused that program to take off far beyond any Federal grant program. It is just tremendous. The power is there. I think the program will carry itself.

I would urge the committee to grant the moratorium for this year and let us evaluate and make proper decisions.

Mr. McDade. This question was to separate out that small amount, $4 million for PILT, which we could cut, and others, by $4 million and——

Mr. Yates. That is a *de minimis* cut for PILT.

MAINTENANCE OF STATEWIDE INFRASTRUCTURE

Mr. McDade. What I am saying is that I wish you would look at that question and place a statement in the record. I think you should analyze the infrastructure that has been developed. This person, who is a very effective practitioner of the law in the City of Philadelphia, was interested in the economic potential and the conservation aspects of preservation from the standpoint of restoring a neighborhood rather than having it ripped down.

I agree with him. His plea is to consider keeping that statewide group of expertise that has been developed. I don't ask you to make a statement now but I ask you to think about it in terms of possibly shifting the $4 million around a little bit.

Secretary WATT. I do need to respond to that.

[The information follows:]

FUNDING FOR HISTORIC PRESERVATION FUND

The Administration is opposed to a $4 million appropriation for the HPF grants to States because it is inconsistent with our efforts to control the size of the Federal budget. Pursuant to this request, however, we have analyzed the fiscal requirements for maintaining the State historic preservation office infrastructure that has been developed and operated with funding support from HPF. The data on the attached tables are based on measurement of State performance in fiscal year 1980, State grant management data for fiscal year 1981, and estimates of current level of effort on items not usually reported to HCRS from a sampling of States.

The analysis shows that $4 million would meet only a fraction of the State infrastructures. We estimate that the amount needed to maintain current level of effort in State Survey and Planning operations is $23 million. This amount excludes acquisition and development projects. The $23 million figure was reached as shown on the attached table.

FY 81 HISTORIC PRESERVATION FUND COSTS

(thousands of dollars)

Activity	Est. total cost	Average Cost per State	Total Fed. Share (HPF)	Cumulative Fed. Share (HPF)
REVIEW AND COMPLIANCE	$ 4,400	$ 78	$ 2,200 (Federal administrative costs are not included in this estimate see "*" below)	$ 2,200

Products

- 48,000 Responses to A-95 Clearinghouse requests for technical assistance.
- 12,000 Responses to Federal agency requests for assistance in preparing Environmental Impact Statements.
- 1,700 Responses to Federal agency requests for recommendations concerning National Register eligibility.
- 12,000 Responses to Section 106 technical assistance requests from Federal agencies.
- 4,400 Relationships maintained with Federal, State, and local agencies to integrate planning with broader community development efforts.

Activity	Est. total cost	Average Cost per State	Total Fed. Share (HPF)	Cumulative Fed. Share (HPF)
PRESERVATION PLANNING	14,250	250	7,125	9,325

Products

- Determine preservation priorities
- Technical advice on protection and rehabilitation/ revitalization to development agencies
- Aid in preparation of architectural plans and specs.

Activity	Est. total cost	Average Cost per State	Total Fed. Share(HPF)	Cumulative Fed. Share(HPF)
NOMINATIONS TO THE NATIONAL REGISTER	3,650	64	1,850	11,175

Products

- 3,000 Nominations of individual properties processed.
- 496 Nominations of districts processed.
- 71 Thematic nominations processed.
- 42 Multiple resource nominations processed.

Activity	Est. total cost	Average Cost per State	Total Fed. Share (HPF)	Cumulative Fed. Share (HPF)
SURVEY	11,400 [8,140]	200 [143]	5,700 [5,700]	16,875 [16,875]

Products

- Identification/evaluation of historic properties

[ ] = costs in FY 82 using 70/30 Matching ratio and unchanged federal share

Activity	Est. total cost	Average Cost per State	Total Fed. Share (HPF)	Cumulative Fed. Share (HPF)
ADMINISTRATION OF THE TAX REFORM ACT	1,000	18	500	17,375

Products

° 95 Local statutes reviewed. ° 1,500 Determinations of significance recommended.

° 1,400 Certifications of rehabilitation recommended.

Activity	Est. total cost	Average Cost per State	Total Fed. Share (HPF)	Cumulative Fed. Share (HPF)
ADMINISTRATION OF COVENANTS AND EXISTING GRANT OBLIGATIONS	8,600	151	4,300	21,675

Products

° 2,100 Existing Survey and Planning Grants monitored.

° 3,500 Existing Acquisition and Development grants monitored.

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* Federal administrative cost estimates:

° External Demand Activities.....800
- ° Review and Compliance
- ° Nominations
- ° Administration of Covenants
- ° Administration of Existing Grants

° Preservation Planning Activities.....300
- ° Setting Preservation Priorities
- ° Technical Advice of Project Planning
- ° Technical Advice on Architectural Plans Specifications

° Survey Activities.....300
- ° Identification and Evaluation of Properties
- ° Inventory Documentation

Secretary WATT. I respond with comments of favoritism toward the program, as I did with regard to the Land and Water Conservation Fund. I think it is a great program. I do not want that to be misinterpreted by the committee as the old-fashioned wink that I used to know how to give this committee—yes, OMB made me make those cuts but I really don't want them.

I am fully committed to the recommendations that will be coming to this committee on March 10. I believe the economic situation of the country is as critical as the President has described it. I have been involved in those sessions. I think we have to cut taxes and expenditures.

In that light you look at the department for which I have responsibility, and you know you have to have limited dollars. The question is: Are you going to invest in the resource base that is yielding to you over time or can you place a moratorium on grant programs for recreation and preservation?

In most instances if the building has been there for a historic period of time, it can wait another year. I am sure there is some place that is going to fall down on you.

Mr. DICKS. We almost forgot Union Station.

Secretary WATT. We tried to. I am recommending strongly that we do make these cuts that are being recommended and I am not asking for any sleight of hand.

I am determined that we make substantial cuts. If we have to cut back and make further recommendations on areas that can be cut even more, we will be back to do that. We are determined to make this effort.

Mr. DICKS. I think most members want to see cuts but we are going to share in the process. It is a shared process.

Secretary WATT. I am not sure it is even shared. The ultimate responsibility is with Congress. We have made our recommendation.

Mr. DICKS. What I am suggesting to you is that in the entire framework of the budget there might be a way to keep that infrastructure going because it does produce jobs and renewal in the community of the budget without the grant program. If the infrastructure of expertise is disbanded, he will go back to his private practice in Philadelphia, and he will not come back at some later point in his life in an effort to educate local governments about the availability.

Secretary WATT. Those are the value judgments that we have gone through in the Executive Branch, and that the Congress will go through.

But concerning the question that you just asked about the $500 million going to the states, a good question must be asked with regard to one of my favorite projects, historic preservation. A question must be asked there, too: Is it a Federal responsibility to keep that cadre of small talented people going?

My recommendation is that we can have the moratorium.

HISTORIC PRESERVATION PROGRAM

Mr. LOEFFLER. Following on what the gentleman from Pennsylvania has been pursuing, I heard from a number of persons interested in the historic preservation program.

I am sympathetic to establishing priorities, and this has been a program that has proven itself quite well, primarily by tax incentives. It is to be commended. However, what about the group that designates a building to be restored that is listed on the national register?

If we don't have some mechanism, may we not have many buildings being restored and qualifying for tax credits when in fact they are not of historic value and therefore should not be preserved?

Where will we be able to maintain that national thrust so Texas isn't here and Pennsylvania here and Illinois in between?

Secretary WATT. We are maintaining that program for the very reasons you have outlined, and the program has been placed back in the Park Service where it probably should have been all along. That is where it used to be when I was in government before, and we will continue with the registry program.

Mr. DICKS. You haven't requested any staff or any people or money for the Park Service to handle this program. This is what dismays those of us who have a concern about historic preservation.

It is the states that have the responsibility to make the tax program work because they are the ones who determine which projects are qualified to get the tax treatment that you say—and I agree with you—is a very important thing.

That tax part of it is more important than the Federal or state program, in my judgment, but if you don't have the states involved in the certification process, then you are going to have more people at the National Park Service to deal with it or you are just going to swamp the Federal agency and you are not going to be in a position to handle these applications and you are going to kill the tax program as well.

Secretary WATT. Congressman, your assumption is, that by failing to give that small bit of money, the states are going to ban the program, that it is not worthy of public support. I am not willing to make that assumption.

Mr. DICKS. States are cutting their budgets as well. I know the State of Washington is under tremendous pressure to reduce expenditures. I am not sure they are going to be able to preserve this program.

Secretary WATT. Then it is a balancing of priorities on the national level and state level. I have not come to the conclusion—that your question indicates you may have—that the states will walk off and leave the program. If they are willing to do that, then we better get back to Congressman McDade's question and see if this really is serving the national interest. If voluntary groups and the public are not willing to finance it, then for whose benefit is the program?

Mr. DICKS. In your conversations with the Governors, you told us earlier you had a long discussion with them about USGS in this spirit of new federalism. Are they willing to keep the responsibility for historic preservation? Have you written them a letter? Have you any basis to say they will maintain this program?

Secretary WATT. I do not have any basis either way.

The interesting point you bring to mind is that the Governors came; they were given the agenda; they brought up issues they

wanted to discuss; and they did not put this on their agenda. I don't think it is fair to draw conclusions one way or the other.

Mr. DICKS. We will leave it as an open issue, but are you willing to ask for the resources that are necessary to have the National Park Service do this job?

Secretary WATT. The National Park Service will provide the resources to do that job.

Mr. DICKS. Will you see that these projects are reviewed and the tax certifications are accomplished, so we don't kill the tax side? I think we agree that is where the real action has occurred economically. It is very important to the cities around the country, and in rural areas as well, that that tax program be kept going.

Secretary WATT. That is correct, and it will be.

BUREAU OF LAND MANAGEMENT CONVEYANCES

Mr. YATES. Let's go to BLM again.

The department has furnished the committee with summaries of acres conveyed by previous administrations. For example, in fiscal year 1975, there were 39 patents granted for recreation and public purposes, totaling 16,755.42 acres. In 1976, there were 20 granted for 3,597 acres.

On October 21, 1976, FLMPA was passed, and in 1977 there were 16 granted for 5,012.33 acres; and in 1978, six, for 850 acres; and in 1979, nine, for 205.7 acres; and in 1980, seven, for a total of 33,659 acres.

The amount between 1970 and 1980 totaled 180,872 acres.

Do you contemplate you will be passing out more acreage than that?

Secretary WATT. We hope to meet whatever the needs are, and I would hope we would have a greater exchange program as we seek to round out the recreational stake; and that it will be responsive to Governors and community leaders throughout the country to see that lands are transferred to them as they need them in the public interest.

Mr. YATES. In five years, 218,637 acres were exchanged, which is a pretty good sum.

Secretary WATT. How many?

Mr. YATES. 218,637 acres, according to department figures. That is the total. 52,000 in 1975; 58,000 in 1976; 67,000 in 1977; 11,000 in 1978; 22,000 in 1979; 5,000 in 1980.

Now, on the basis of those figures wouldn't you say your predecessor was a good neighbor?

Secretary WATT. I am unfamiliar with those figures. I don't know what lands those were. He wasn't a very good neighbor in Tonopah, Nevada.

Mr. YATES. Where is that?

Secretary WATT. In North Central Nevada.

Mr. YATES. Who told you about the town? You don't live there, do you?

Secretary WATT. No, I don't live there. It was an example a leader in Nevada told me about.

Mr. YATES. You don't mean Santini?

Secretary WATT. No.

Mr. YATES. The reason I ask you is, Santini was talking to somebody about a place called Alamo, in Nevada.

Secretary WATT. I have read the story you are referring to. I had never before heard about Alamo.

Mr. YATES. After reading the story about Alamo, a question comes to my mind as to yours, I am sure, as to whether or not the reason for the delay in the case of Tonopah was the failure of the town to get the necessary requirements and consent over a period of time, as was the case with Alamo, or whether it was entirely due to the bureaucratic disabilities of BLM.

Secretary WATT. I have asked that question of the present BLM management. Everybody shakes their head and says they have no idea. They don't know whether it got lost in the cracks.

Mr. YATES. Let's go back to my question. 218,000 acres exchanged in five years would indicate, at least to me, that Secretary Andrus wasn't a bad neighbor in terms of what you consider to be good neighboring.

Secretary WATT. If you could measure good-neighbor attitudes by that acreage, it looks pretty good.

Mr. YATES. What about Rogers Morton? Was he a good neighbor?

Secretary WATT. He was a better neighbor than we have had in the last few years.

Mr. YATES. In what respect?

Secretary WATT. You didn't draw upon him the wrath we now see emanating from the western states.

Mr. YATES. Do you mean from the sagebrush rebels?

Secretary WATT. Yes.

Mr. YATES. Maybe they were not organized then.

Secretary WATT. Well, what organized them?

Mr. YATES. Okay, tell us. What organized them?

Secretary WATT. The attitudes of the Bureau of Land Management.

Mr. YATES. None of the other bureaus?

Secretary WATT. They are not on the cutting edge.

Mr. YATES. Not the Forest Service?

Secretary WATT. One of our objectives will be to make the Bureau of Land Management successful in building community relationships by adopting the management techniques they use in the Forest Service.

Mr. YATES. I hate to think of what will be given away under that.

I can really appreciate what a joyful reception you will get from communities you propose to give lands to.

Secretary WATT. Let's back up right now: Giving the land is not the key to the solution of the sagebrush rebellion. I am not advocating that; I have not, and I will not.

Mr. YATES. Some of your brother rebels did, did they not?

Secretary WATT. Some of them do. I do not. This Administration is not pushing that. We are pushing for management skills and attitudes that will enforce the law that this Congress passed, particularly in section 8, that says you will consult with them. In past years there has been no consultation with state and local governments with regard to decisions on Federal lands.

BUREAU OF LAND MANAGEMENT REGULATIONS

Mr. YATES [reading]:

Department of the Interior, dated January 13. Local governments should have important veto powers over Federal actions under BLM proposed regulation. The consistency rights will require BLM plans to be consistent with State and local resource plans. Local officials are annoyed at the delay in proposing the regs. If BLM put out these regs in time, said one county official, I don't think local government in the West would have supported the sagebrush rebellion.

Tell us about the regs, then. Where are the regs?

Secretary WATT. I have no idea which regs you are referring to.

Mr. YATES. This is put out by your Office of Public Affairs dated January 13.

Secretary WATT. I was sworn in January 23. It is a splendid idea. The county official is espousing to you the spirit I tried to portray to you.

Mr. YATES. Those regs are required by FLMPA for consultation with local people, and that is what you were talking about. Those are the ones you approve of.

Secretary WATT. Those regs, if we are talking about the same ones, are the result of a lawsuit which I personally handled in my previous life, when I represented 33 Spanish-Americans in the State of New Mexico who were permittees of BLM land. The Washington people came down and told those users how they had to manage the Federal lands, their state-leased land and their privately owned fee lands. There was no consultation with the state, with regard to the state land; there was no consultation with anybody, not even the Spanish-American people who were my clients. I took them to court and whipped the BLM in the 10th Circuit, and that is the result of it.

Mr. YATES. Incidentally, are the proposed regulations the kind of regulations the Administration wants to get off the backs of the local people?

Secretary WATT. We want to consult with the local people, not hamstring the local people.

Mr. YATES. You won't call those regulations, then?

Secretary WATT. There will always be need for regulations because the purpose of government is to regulate. That is why government exists.

Mr. YATES. I must say I heard President Reagan say he wanted to get rid of regulations.

Secretary WATT. Too many regulations can be bad. The President never proposed to eliminate government.

Mr. YATES. He wants to get government off the backs of the people.

Secretary WATT. A splendid idea, and we are going to try to do it.

Mr. YATES. I didn't know the government was on the backs of the people, but let's go on.

Secretary WATT. Those Spanish-American people in New Mexico had government on their back so oppressively they couldn't even manage their own fee land.

Mr. YATES. That is understandable. Government has been like that.

Secretary WATT. So they know about the government being on your back, and it took an expensive lawsuit—which they did not have to finance—to deal with the problem.

Mr. YATES. Bureaucracy can be very bad. Bureaucracy at its worst is very bad. There are some good bureaucrats, too.

Secretary WATT. We are identifying them, and there are a lot of them in the Department of the Interior.

INDIAN BLOCK GRANTS

Mr. DICKS. I noticed in your very thorough and well-prepared statement here that you discuss the Indian programs within the jurisdiction of the Department of the Interior. You are considering a new block grant approach.

This committee has been very concerned about the administration of the Indian programs within the BIA, and the former Assistant Secretary for Indian Affairs worked with this committee to try and get into place—again, back to the computers—the kind of a cost-accounting system that would make it possible to know how we are spending money in this very expensive program. I think it is approximately $2 billion handled by that particular department.

I am concerned whether you have had the chance to determine whether those programs are being implemented properly so we can get a good cost-accounting system operating so we know how we are spending the taxpayers' money as it relates to these particular programs.

Secretary WATT. You have identified a few management problems we have in the Bureau of Indian Affairs, and we are bringing together a team there which I think can focus on that. I hope they will report satisfactory progress to you and to this committee.

Mr. DICKS. I hope you will. We have supported a lot of these programs, but we have always worried about how that money is being spent. There is a genuine amount of concern about it.

I also think your idea of a block grant program makes some sense here, rather than having all the categorical types of programs we have had in the past. I would think the Indians would be in favor of that, too, because the discussions I have had with them indicate they would like to have a little more flexibility, and they are not particularly pleased with the way BIA has dealt with them in the past.

Secretary WATT. Congressman, I think you are "right on." There are many visits we have had from Indian leaders around the country which express that point. I am terribly impressed throughout with the matured Indian leadership. I have been visited by a great number of people, and I think they have competent leadership. I think they can be given flexibility and responsibility and really rally the Indian communities.

I might comment on this block grant concept. I am excited about it. I would like to be able to take credit for it. It is not my idea.

We have found, in coming to the Department of Interior, that the career employee is an innovative and creative person if given good leadership. In every bureau, including the Bureau of Land Management, we have been impressed with the talent that is there, and the commitment that is there. They are rallying, and I think we are going to bring about the changes we want because we

are turning to them. I think we will marry the political leadership I bring to the department with the career employees and make this a successful management team to take on the BIA problems you have identified, and the BLM problems I have been talking about. I am extremely optimistic about that commitment and the block grant concept. It wasn't a Republican initiative, but it came from career employees.

Mr. DICKS. I remember while in a class in public administration at the University of Washington, they talked about the career-type people within the bureaucracy who were asked to come forward with ideas they had never been able to get anyone to pay attention to. They made some progress, I think, by doing just that.
progress, I think, by doing just that.

ALASKA NATIVE CLAIMS SETTLEMENT ACT

One other question I am interested in is the Alaska Native Claims Settlement. You know, it has been since 1973, when that historic legislation was enacted under the bill where the natives are to receive something like 40 million acres of land and only 12 million acres have reached the natives. What do you foresee in this area? Will we be able to get the legislation implemented?

Secretary WATT. When you see the budget come up on March 10, you will see we protected the funds for that program. I think it is important that the adjudication process of those lands be completed and transferred to those Native Americans as quickly as possible.

I have talked to Governor Hammond about the related problems. I think we can move forward, and we are recommending to this committee and the Congress that the necessary funds be appropriated.

REDWOODS LITIGATION

Mr. DICKS. What about the Redwoods? That is another issue this committee has been drawn into. As you know, we passed the legislation and now it is time to pay the bill.

Is the Administration going to try to come forward in the kind of spirit we have talked about here today and pay up for what we have taken from the private sector so these people can go out and acquire other timberlands? You know, we are way behind.

Mr. BETTENBERG. We have $300 million on deposit with the courts in that case, but otherwise, at this point, it is in litigation, and we will eventually have a court settlement that will decide the value, at which time the money will have to be appropriated.

Mr. DICKS. We know it is well over $300 million. Is that right?

Mr. BETTENBERG. I think most people concede it will be a fair amount more than $300 million.

Mr. YATES. At least twice that, isn't it?

Mr. DICKS. There was $25 million in last year's bill to be put on deposit. Are you going to preserve that in the budget?

Mr. BETTENBERG. It is not likely.

Mr. DICKS. I think that is something you ought to look at between now and March 10.

Mr. YATES. What would happen to the $25 million? Would that be placed on deposit with the court, too?

Mr. BETTENBERG. There were several things it could have been used for, including being placed on deposit with the court, and also for settling small landowner cases.

Mr. YATES. Can any of the $300 million be used for small landowners?

Mr. BETTENBERG. That is on deposit with the court.

Mr. YATES. Could the amount on deposit be used?

Mr. BETTENBERG. No.

Mr. YATES. That is for the bigger companies?

Mr. BETTENBERG. That is on deposit with the court and drawn down by the major companies that are involved.

Mr. DICKS. I think that is one we ought to talk to the companies about. They really feel under substantial duress. They feel they have been hassled by the Federal Government. You know, we took their lands, and we have not paid upon them yet, and it seems to me it is something I would hope you would take a personal look at.

Secretary WATT. We will do that.

Mr. DICKS. I would like them to look at the $25 million we put in last year.

Mr. YATES. Mr. Bettenberg has already said they are going to seek to rescind it.

Mr. BETTENBERG. That is correct. Within the balance remaining, you could conceivably have some money for small settlements.

ENVIRONMENTAL IMPACT STATEMENTS

Mr. DICKS. I notice in your statement, also, your public statement particularly, you talk a lot about trying to move ahead on the energy issue. As Secretary of the Interior, you will be a supply-side individual.

Now, realistically, in order to do that, you are going to have to have enough people within the department who specialize in writing environmental impact statements. It seems to me this is one area with which you should concern yourself as well, because you can't get these projects moving unless you get these impact statements written. There are a lot of people in the industry who are concerned that if we don't have enough people within the agency who can process these statements on a timely basis the projects and leasing program will be delayed, and everything else you are trying to accomplish. There might be a conflict trying to hold down personnel and having enough people to process these statements.

Secretary WATT. In redoing the budget, we took care of the concern you just expressed, and we are implementing new management directives to accelerate that. We are also shifting money that way. You will see in the March 10 budget that this was a total budget effort. We collapsed into three or four weeks what would normally take eight or nine months.

We have examined the point that you raise, and I think you will find it has been taken care of adequately.

Mr. DICKS. Thank you, Mr. Chairman.

PAYMENTS IN LIEU OF TAXES

Mr. YATES. Let's talk about PILT, payments in lieu of taxes, for a few minutes. As I remember, the purpose is, after considering sums

paid under 11 shared revenue acts, paying at least 75 cents per acre to counties with land administered by seven specified national agencies, and for 1981 this committee appropriated $103 million compared to a budget request of $111 million. In fiscal year 1982, President Carter's budget recommended no payments, and as I understand your testimony, you are recommending $45 million.

Secretary WATT. That is correct.

Mr. YATES. Suppose the payments that have been received by the counties and the states under the other shared programs equal or exceed the amount that they would have received, had the lands been available for taxation would you then favor the payments?

Secretary WATT. No, if I am following your question correctly. We would be asking Congress to amend the present act to basically achieve a minimum payment which was 10 cents an acre plus the shared revenues or the remainder of that formula in the present act, whichever is the greater.

Mr. YATES. What if the shared revenues of the other acts exceed the amount that would have been available under taxation and those funds went to the states, and the state decided they would not pass them on to the county?

Secretary WATT. That is the problem with the act.

Mr. YATES. My question would be, would you then favor PILT payments? Suppose the state that should have passed them on to the counties didn't do so? Why should they receive additional funds from the Federal Government?

Secretary WATT. The responsibility of ownership should go to the local government. We ought the see that that payment goes to the local government, and we ought to write that Federal statute to see that it does, so the states can't siphon that off.

Mr. YATES. Is that a recommendation you will make to the Congress?

Secretary WATT. Yes. I did not make that clear. The appropriations request is contingent upon that amendment. If you folks want to take the initiative on it as you have on other things, it might facilitate it. I am not supposed to urge that, am I?

Mr. YATES. But we took the initiative of not putting funds in when we got the GAO study, which said the states were receiving much more than they would have received if they put the land on the tax rolls.

Obviously, you know what the PILT payments have been to the States. Do you also have records which indicate what the rate of pass-through has been from each of the states receiving PILT payments.

Mr. BETTENBERG. The Bureau of Land Management has that information furnished by the states involved.

Mr. YATES. When they come before us, will we be able to get all that information?

Mr. BETTENBERG. Yes.

Secretary WATT. We have seen their computer run on it.

Mr. BETTENBERG. The Bureau does not have data on what a tax equivalency system would be. Some of the lands are probably even hard to develop such information on because they are in areas where there are no private lands, but they do not have a data base that explains what the amounts might be.

Secretary WATT. Philosophically, that should be the objective. We shouldn't be initiating a Federal program to bring riches to the counties greater than what they would have gotten had the lands been on the tax roll.

Mr. YATES. In the year 1979, the states and local governments received approximately $460 million, or about $1 an acre from the other shared programs. Those receipts are going up because there is much more activity in your leases, isn't that right?

Secretary WATT. In some counties in my home state there is tremendous wealth because of these shared revenues, and a few of the counties in my home state get nothing. It is the lumpiness of the program which brings about the inequities and the failure of the government to face up to its responsibilities of ownership.

Mr. YATES. That is a subject this committee will be glad to look into.

OFFSHORE LEASING

Let's talk about the leasing program for a moment. What is the status of your proposal to place the offshore California land out for lease?

Secretary WATT. The proposal is, if those leases on the Outer Continental Shelf are to be made on the 5-year schedule adopted in 1980, a decision needs to be made in April as to which acreages will be submitted for lease. There are five tracts that have been subject to an environmental impact statement.

My predecessor asked for comment on one of those tracts. A few weeks ago, I wrote the Governors of California and Oregon and asked them to comment on the other four tracts. Once those comments are received, I will sit down and evaluate their comments, plus the other input the department has, and make a decision in April with regard to that leasing program.

Mr. YATES. The Governor of California has already stated his feelings on the proposal hasn't he?

Secretary WATT. I don't know if we have received that yet, but if we haven't it is due in.

Mr. YATES. Are you aware of his opposition?

Secretary WATT. I am aware of it through the press.

Mr. YATES. Do you mean the Governor hasn't written or called you on that?

Secretary WATT. I did get a telegram after I wrote him and asked for it. I know the tenor of that telegram. It is too hot to hold.

Mr. YATES. Did you gather the impression, then, that he is opposed to it?

Secretary WATT. He sure was at that moment.

Mr. YATES. Do you doubt his ongoing opposition?

Secretary WATT. I presume it will be consistent. The OCS Act amendments in recent years have an elaborate process that must be followed with exact precision, and we are trying to fulfill that formal requirement before the leases are made. We are in that process now.

Mr. YATES. Is the Oregon program subject to the same kind of Department of the Interior intention of being a good neighbor?

Secretary WATT. Yes. We will be balancing, as in every other land management decision, the local concerns and attitudes with

the national interest and will be making decisions that are consistent with the overall national interest and objectives.

That gives me a point to make with regard to our earlier question. While I am eager to share with local and state government decision-makers on how to deal with the Tonopah, or whatever the issue may be, that is not a shared decision-making responsibility. The Constitution vests that in the Federal Government, so it is not a partnership. It is consultation that is needed, and we will address that on-land and off-shore as well.

Mr. McDade. I don't know the specific details of these leases, but I can recollect the opposition of the Governor of California to the pipeline that would have gone down the middle and permitted Alaskan crude to reach the heartland of the country and the East Coast and I recall his activities, through the use of permit processing, to frustrate that and, I think, subordinate the national interests to his own parochial interests.

I hope he is a good neighbor to us as well.

Secretary Watt. There is a balance that is sometimes difficult to find, but we will be searching for it.

OIL SHALE LEASING PROGRAM

Mr. Yates. Is the department considering an oil shale leasing program?

Secretary Watt. Yes, we are. That is under continuing review and has been discussed by the committee in years gone by. We have taken a hard look at that. If we get our people on board, we will be able to make faster decisions.

Mr. Yates. What does that mean? You are thinking of leasing lands that contain oil shale?

Secretary Watt. That is correct.

Mr. Yates. When do you think you will be ready to go on that?

Secretary Watt. I am hoping to focus on it in the next several months. The prior Under Secretary, Mr. Joseph, proposed that before new leases of oil shale land are issued, the environmental impact statement should be completed. We hope to address that in the next couple of months.

Mr. Yates. Are legislative changes required for that?

Secretary Watt. There needs to be a legislative change with regard to offsite disposal of spent shale before that industry can really move along. I think it was killed on the Senate side. I think it passed the House side.

Mr. Yates. What is the status of the two active leases in Colorado?

Secretary Watt. Those two leases have undergone change because of technical reasons. We are not getting the variety of knowledge we probably wanted from the initial design of the program. There are frustrations caused by the offsite disposal issue as well.

Mr. Yates. How close to any kind of production are any of the leases?

Secretary Watt. Production in the sense of economical contribution?

Mr. Yates. They are part of the program. I wondered whether any of the leases would result in a successful completion of a pilot program.

Secretary WATT. I can answer that with regard to a pilot program. I think we are very near to acceptance. I think both leases are coming along with their technology.

Mr. YATES. But they are both modified in-situ programs?

Secretary WATT. Yes.

Mr. YATES. Occidental is in situ, too?

Secretary WATT. I am looking over your shoulder for coaching from your staff. They are coaching me on how to answer you. So far, they have been doing quite well.

Maybe we can put your staff people together with my staff people and we can work this out.

Mr. YATES. My staff tells me one of them is the Occidental, but are they both the same processes if both are modified in situ? I understand they are.

Secretary WATT. They did not start out that way, but they have grown that way.

Mr. YATES. I have learned, Mr. Secretary, that they have extreme difficulty in disposing of the spent shale on site.

Secretary WATT. That is why we need the legislation. If that legislation is passed, we may then move one of those leases back to an open-pit-type mining operation, but until we get that—

Mr. YATES. What about water? Is that involved at all?

Secretary WATT. Water will be a limiting factor in the years ahead. The more limiting factor is air. We will be able to produce up to one million barrels of oil per day from those oil shales before we start bumping the limits of airshed requirements.

THE NATION'S WATER NEEDS

Mr. YATES. Let's talk about water for a while. It is a big problem, isn't it, the question of water needs for the present as well as for the future?

Secretary WATT. Yes.

Mr. YATES. Is it your responsibility to provide the Nation with its water supplies?

Secretary WATT. No.

Mr. YATES. What is your responsibility in the field of water?

Secretary WATT. We have a responsibility to assist in water planning activities and to assist in the coordination of a policy for the Federal Government in dealing with water resource projects and to assist the reclamation states in storage and delivery of water for their multiple uses.

Mr. YATES. Do you have any responsibility respecting the provision of adequate water supplies for the future?

Secretary WATT. The Department of the Interior does not have a responsibility outside of the reclamation states, and it is a shared responsibility in those states.

Mr. YATES. What do you do in states like Florida or New Jersey, or other states where water tables are threatened with pollution? Do you have any responsibility for the water in those states, or is that strictly a state responsibility?

Secretary WATT. It has been considered a state and interstate responsibility, with scientific input from USGS and some planning activities from the Water Resource Council. The Department of the Interior in the past has had a water institute program where they

made money available to states and universities for research and planning activities.

TERMINATION OF OFFICE OF WATER RESEARCH AND TECHNOLOGY

Mr. YATES. Do you propose to terminate the Office of Water Research and Technology?

Secretary WATT. Yes, we do.

Mr. YATES. Tell us why.

Secretary WATT. That office has had several programs. One has been a desalting program. They have made grants to universities for research. The desalting program is one that I had a chance to work with in my previous years in the Department of Interior, and it long ago passed the point of doing basic research and has moved into applied desalination efforts.

I don't think that is the proper role for the Federal Government, and, in fact, the private market has been a competitor in the world marketplace and has been doing very well. We do not need to use taxpayer dollars to perfect a competitive product that is now available on the marketplace, so we are recommending that the desalination program be terminated, and that was a major function of the OWRT.

That office also has a grant program to the universities, which has had mixed results. Some of the state universities had matching programs where they put in a substantial investment of their own. They have done very well with their water programs and put in more money. Other states did nothing but take the money to assist in the payment of a professor or so, and did not supplement that in any way. So the states have mixed reviews in their handling of water resource planning and research activities. It is questionable whether that is worth the dollars, and we will be recommending that this be zeroed out.

WATER RESOURCES PLANNING

Mr. YATES. I note your answer respecting the obligations of the states, but what happens in the case of a regional aquifer being seriously depleted? Aquifers do not always recognize state boundary lines. Does the Federal Government have a role to try to stop this?

Secretary WATT. The Federal Government has a role to assist those states and has met it in areas like the Susquehanna River Basin Commission, the Delaware River Basin Commission. In the West, we have played an active part in the water planning. Where the states are willing to come together and there is a Federal responsibility, it should be met, and we propose that it will be.

Mr. YATES. Doesn't the government have any obligation to try to provide water for an energy experiment like oil shale to see that water is provided for those companies?

Secretary WATT. It is not providing it for those companies. It is providing it for the development of a Federal resource base, and if the Federal Government owns the resource, and it is of little value to the public interest if there is not water, then I think you have a responsibility to maximize the use of that resource. Some water

development responsibilities would be inherent in that responsibility of ownership.

Mr. YATES. Suppose the states don't worry about their water? Do we have to worry about it? I keep thinking of the way the salt is coming into the Florida water table in ocean peninsulas. What responsibility does the Federal Government have in that instance?

Secretary WATT. The Federal Government has carried out the responsibility of alerting them. We have spent hundreds of millions of dollars in water resource planning in the last year, and you kind of wonder, has it been of any value, when the Federal Government has poured out hundreds of millions of dollars to water resource councils, and grants to institutions and universities.

It is inconceivable that the states would say they are not aware of a water problem. Yet some states have turned their backs on it, have walked away from it, and do not have an adequate program. And their people are going to be hurt, first in commercial industrial job-creating opportunities and, if it gets very severe, in human terms.

Some of the states have been very responsive and very aggressive on this, but no one is hurting because of a lack of direction and attention given by the Federal Government; but it hasn't been worthwhile. I think our recommendation to the Congress is that many of these things have not been worthwhile and therefore we are asking that they be terminated.

Mr. HODEL. I served as a Federal member of the river basin commission in the Northwest. I could not document it by chapter and verse, but I have a perception that upon occasion the availability of Federal money promoting concern over a particular project had the effect of dampening state interest. It was almost as if: Well, thank goodness, I don't have to worry about that, which means that the state commitments are not made for that issue because the Federal Government is going to worry about it. The implication is that we will also come along with the dollars necessary to carry out the program.

Mr. YATES. We have been hearing from the various state institutes, from people and universities saying that this will sound the end of their programs. We will see how important their programs are.

Secretary WATT. I like the way you phrase that. If their program isn't a significant factor for them to sell to their state legislature and university presidents, I suggest maybe they don't have a very good program. Maybe we ought to kill it before it dies.

WILD HORSES AND BURROS

Mr. YATES. Let's talk about the wild horses and burros. They are assuming a role as predators, I believe. Am I wrong?

Secretary WATT. We have not used that phrase before.

Mr. YATES. Didn't you say they have to be treated as predators, or didn't you say they are taking up too much of the range?

Secretary WATT. We find that in the horse ranges.

Mr. YATES. They have to be managed like other game?

Secretary WATT. To be of value any resource needs to be managed. We have these wild horses in particular ranges that are literally destroying the public lands as well as the private lands on

which they are roaming. We are going to see that they are properly managed.

Mr. YATES. Are you going to propose amending the existing legislation?

Secretary WATT. I am not yet satisfied it needs to be amended.

Mr. YATES. You can manage it under present circumstances?

Secretary WATT. There is a question in my mind, and I am awaiting a memorandum on that. My first thought is that it can be done within existing statutory direction. If it needs to be amended, we will come back.

ENDANGERED SPECIES PROGRAM

Mr. YATES. Moving from game to birds, one of our outside witnesses, a professor from Cornell, came in to testify about the peregrine falcons. He was keeping the falcon alive under the Endangered Species Program, and he thought his funds were going to be eliminated. Is that true? I understand they were eliminated under the Carter budget.

Then there isn't a chance of getting it back under this budget?

Secretary WATT. I thought you were going to have me feeding the peregrine falcon with the horses.

Mr. YATES. The falcon is an endangered species. You said you thought you could manage the programs under existing legislation. I will leave that to you, without any amendments to the legislation.

Now, we move to the peregrine falcon, and from the peregrine falcon we will move to the California condor. Will there be funds to protect these species?

This is not a state matter or a local matter, is it? This is a matter of endangered species, which I take is a national problem.

Secretary WATT. We believe that we have adequate funds to carry out those programs in a respectable manner.

Mr. YATES. In the existing budget do you have enough funds for both of them? Let's talk about peregrine falcons, first.

Secretary WATT. We feel there are adequate funds within the Fish and Wildlife Service to meet its responsibilities for endangered species. Now, I have not had that broken down to me on each species and what funds are going for that particular program. I was interested in reading in the press a story about the changes that I had brought with regard to shifting the emphasis.

Yes, Mr. Chairman, that is the article.

Mr. YATES. It didn't clearly define what you had said.

Secretary WATT. I think maybe it should have. I called the Acting Director and asked when that happened and was it a good idea. It happened before I came on board. He said it was a good idea, and I ought to take credit for it.

The thrust of the program the Fish and Wildlife Service implements was to start taking care of the endangered species that are now listed rather than committing most of this money for enlarging the list, and he said, "Mr. Secretary, I should think you would find this interesting, to take care of what is endangered."

It makes sense to me, and the program still exists.

Mr. YATES. But the article says this—and I submit it for your consideration—it says:

Some 600 species of animals and plants are currently listed. It is said plans are definitely for only 31, and some of the listed species are slowly dying out, to revert some resources to recovering these species.

Would you take a look at this program, please, and ask the person who will be testifying on this program about it? They have already been here. They are going to come back. Who is the Assistant Secretary in charge of the program?

Secretary WATT. The President nominated a man by the name of Ray Arnett, a first-class guy.

Mr. YATES. He will have to be.

Secretary WATT. Ron Lamberton is the man who made the policy shift that is attributed to this. I have been impressed with Ron, and as that program has been explained to me, it makes good sense.

Mr. YATES. Going from the general to the specific, tell us about the peregrine falcon. You think there is enough resources to take care of that program?

Secretary WATT. I have not been briefed on that specific species.

Mr. YATES. Take a look at it, and the California condor. I guess there are only two or three of them left.

Mr. BETTENBERG. My impression is there isn't enough money in the world to save the condors. That is my impression.

Mr. YATES. On June 18, 1979, a long time ago, there was a last-ditch effort to save the California condor from extinction. It will be launched in January to attempt to get the birds to form a captive breeding group. Young produced by the flock will eventually be returned to the wild.

What has happened since June 18, 1979? Do you have more condors or less? About 100 condors existed in 1940 and only 30 of them are left in the mountainous regions near Los Angeles.

See what you can tell us about that.

Mr. BETTENBERG. I think we will have to get the Fish and Wildlife Service up here. The last I heard they were trying to capture one.

[The information follows:]

CALIFORNIA CONDOR AND PEREGRINE FALCON

During the last year, the Service, in a funding partnership with the National Audubon Society, and in cooperation with the State of California, the Forest Service, and the Bureau of Land Management, has implemented a comprehensive, innovative, and largely successful research and recovery program for the California condor. We have utilized the additional $500,000 provided by this Committee for fiscal years 1980 and 1981 to put together one of the most capable recovery teams ever assembled. It is composed of two senior scientist, five full-time staff biologists. One public educational information specialist, three part-time field observers, and two office support staff.

After less than one year in the field, this team has made notable progress, although you are no doubt aware of the loss of a condor chick which died during investigation procedures at a nest site. Let me enumerate our accomplishments. The team identified the first verified condor nesting in three years with incontrovertible proof of nesting by three pairs: one pair with a dependent young, and two pairs with hatchlings. The team successfully monitored one nest from laying through hatching and fledging: a biological first. Further studies at the two active nests suggest that pesticides, once thought to be a major cause of decline, may not a problem at present. Food availability also does not appear to be a major debilitating factor. The team is confident that successful reproduction and nesting is taking place, but in very low numbers.

The two senior scientists participated in studies with surrogate species in Africa and Peru which produced several major accomplishments. They participated in testing in trapping and handling methods and perfected adaptations to be used on

California condors. In Peru, the release of Andean condors succeeded beyond expectations with birds surviving and easily integrating with the wild population. We know now that captive-reared condors can be successfully put back in the wild. Prospects for the success of captive-breeding are now considered very good based on Andean condor studies.

The population estimate of California condors remains between 20 and 30 birds, to the best of our knowledge. Without the benefit of radio-telemetry, hard population data and several major biological questions remain unanswerable. We still do not understand the reasons for the species decline—we do not even know whether mortality or reproduction problems are the primary agents of decline. To learn about mortality it is essential to utilize radio-telemetry, and the Service is presently reapplying to the State of California for the applicable permits. Finally, all our field research reaffirms our 1979 assessment that a captive propagation program is absolutely essential to the survival of the California condor.

With the $225,000 added by the Congress in fiscal year 1981 to the existing resources ($100,000) for the peregrine falcon recovery efforts, the following is expected by the end of fiscal year 1981: Captive propagation and release efforts within the existing program will have been continued in cooperation with the participating State conservation efforts. The infusion of Service funds, used to support salaries, food for prey and falcons, and other operating costs, such as egg incubation and bird production, allows greater use of non-service funds (e.g., private contributions supporting the renovation of existing and construction of new barns for holding an increased number of breeding pairs). More than 100 young birds will have been released in each of the east coast and Rocky Mountain areas. Overall, there will be an increase in the number of birds produced, available for hacking, released through hacking, and available for retention in the captive breeding stocks. Ultimately, it is anticipated that because of the long-term effects of these additional funds, the rate of peregrine repopulation will be measurably increased.

While money for peregrine reintroduction was added by the Congress in fiscal year 1981, the extent of funding for this project in fiscal year 1982 was evaluated on an equal basis with the funding needs of other service priorities. In the context of the 1982 budget review process, it was decided that the $225,000 provided by the Congress for fiscal year 1981 would not be included in the Service's fiscal year 1982 budget request. Factors involved in this decision included past and expected future funding levels, since the peregrine has been and will continue to be a Service-funded recovery operation; availability of non-Service funds, as the peregrine continues to engender widespread public support, with resources for recovery efforts from private contributions, foundations, etc. expected to increase (in addition, other Federal agencies geographically involved with the peregrine finance recovery/release efforts); and resources needed to establish self-sustaining breeding populations in the wild. As referenced above, the additional fiscal year 1981 funds have provided the basis for successful propagation efforts, which can be continued in the future at lower funding levels. This latter point is best illustrated by the $100,000 still budgeted in fiscal year 1982 for peregrine recovery work within the existing Endangered Species Program funding levels, which was originally planned prior to the additional Congressional funds.

WILD HORSE AND BURRO MANAGEMENT

Mr. YATES. You are quoted as saying, "We must manage wild horses and burros as we manage any other game."

What is the game you are comparing them to, the coyote?

Secretary WATT. Well, we set up management programs for moose and elk, deer and antelope, and we bring about——

Mr. YATES. But you are not going to hunt these horses, are you?

Secretary WATT. I don't think we need to do that, but we will need to see that their numbers are controlled, as we control the game animals. That is just good management for the range and the horses.

Mr. YATES. You don't mean by that statement that these are game animals?

Secretary WATT. No, they are not.

NEVADA LAND EXCHANGE PROGRAM

Mr. YATES. What is the status of the Nevada Land Exchange Program with respect to Lake Tahoe?

Secretary WATT. You are referring to——

Mr. YATES. I am referring to the sale of BLM land outside of Las Vegas. This money would be used to buy lands to protect the Lake Tahoe Basin.

Secretary WATT. I am sorry I don't know the answer to that question.

Mr. YATES. Would you take a look at that and put a report in the record please?

[The information follows:]

STATUS OF NEVADA LAND EXCHANGE PROGRAM AND LAKE TAHOE

Public law 96-586 provides for the sale of up to 700 acres annually of Bureau of Land Management administered lands in the Las Vegas (Clark County) area with a percentage of the receipts from such sale to be applied toward the purchase of non-Federal lands in the Lake Tahoe area. The Bureau's Nevada Field Offices are currently working with the local governmental agencies (Clark County, Las Vegas, and North Las Vegas) to develop regulations to implement the Act and identify lands to be put up for sale. One meeting has been held with local representatives and a second is scheduled for the week of March 16. There has been a question raised as to which lands in the Las Vegas area are eligible for sale under the Act's provisions and the Solicitor's Office is now preparing an opinion on the question.

INDIANA DUNES

Mr. YATES. You are not developing a park hit list, are you?

What are you going to do about the Indiana Dunes? Is this one of your lesser parks in your mind or is this a unique natural resource that ought to be protected?

How much do you know about it, coming from the West, have you seen the Indiana Dunes?

Secretary WATT. No; I don't even know where we are in the acquisition program of Indiana Dunes.

Mr. YATES. That is well established. No question about that, but there are lots and lots of urban people who use that who can't afford to go out to Glacier Park or Yosemite or Yellowstone.

Secretary WATT. A tear sheet had been handed to me which indicates that the Reagan budget will have an increase for the operation of Indiana Dunes.

Mr. YATES. You mean it survived the first of the hits?

Secretary WATT. It must be a great park.

Mr. YATES. It is a great park.

URBAN PARKS PROGRAM

The Urban Parks Program is not one of your preferred programs, is it?

Secretary WATT. It was one that we have asked the committee to zero budget for 1982.

Mr. YATES. And 1981?

Secretary WATT. We have asked that funds be rescinded in 1981 and that the program not be funded in 1982.

Mr. YATES. Can you tell us why?

Secretary WATT. Yes. The Carter budget had requested $75 million for that program. The authorization was $150 million. It's a program that has good intentions, and has brought some good results, but from the national perspective it really doesn't contribute significantly in providing recreation or creating innovative programs for urban recreation.

The local and state governments are so far ahead of the Federal Government, spending hundreds of millions of dollars in providing opportunities. Thus, in any realistic evaluation of urban park recreation activities, this gets rounded off as almost unimportant from the national perspective even though to those few communities that have received aid it's a great program.

So you can't challenge the motive or the intention of that or the work it has done; but is it a Federal responsibility? Since it's not providing much leadership we are recommending in these austere times that it not be funded.

FREEZE ON LAND AND WATER CONSERVATION FUNDS

Mr. YATES. Can you tell us when agencies were told the 1981 land and water conservation funds were frozen?

Secretary WATT. There was an immediate freeze put on February 18 and we have then looked to see how we can give some equity to that. Because $75 million was deferred into 1981, and by that deferral some of the states have been "wounded" because they had obligated those funds, we think it would be inequitable to have those States hurt by of the deferral from 1980 to 1981 and then our deferral from 1981 to 1982.

So we have now looked at that and we are satisfied that we can commit the $19 million left of the 1980 deferral into 1981 and have all of those funds obligated, leaving us another $19 million or so before the absolute freeze goes on the land and water conservation fund. That $19 million will be used to bring into a more equitable balance the activities between those States, some which have accelerated their obligations in the first part of 1981 and some who have been not as quick.

We will bring about a better balance.

Mr. YATES. That is the State Assistance Program. What about Federal programs?

Secretary WATT. A freeze was placed on that program on February 18.

Mr. YATES. Is that when the agencies were told?

Secretary WATT. They may have had a day or two lead.

Mr. YATES. Were the rescissions and terminations you propose to the date of the freeze or to the date of rescission?

Mr. BETTENBERG. My understanding is last year the General Accounting Office concluded that the time period ran 45 days from the date the President actually sent the documents; a literal reading of the law might say it's from the time the decision takes place.

This would be a matter I presume for the General Accounting Office or Comptroller General to decide. The reason the action was taken at that time was that it was clear we would be very close to the margin in terms of the amounts being rescinded. The information trail, the paper trail, was so long that you needed to take quick action just to find out where you are.

In fact, in some of the programs we were getting that information just this past weekend as to specifically where they are. That will give us an opportunity, once they have all been digested, to figure out where to proceed from here.

Some money can be released again fairly immediately.

LAND EXCHANGES

Mr. YATES. Let's talk about the proposed land exchange program. Frequently, land exchange is a costly and time-consuming matter. Are you going to recommend additional funds for the National Park Service and BLM and Fish and Wildlife to administer the land exchange program?

Secretary WATT. The land exchange program that hopefully will be accelerated will be done within present budgetary requests.

Mr. YATES. Are land owners going to be consulted on that?

Secretary WATT. They should be.

HISTORIC PRESERVATION

Mr. YATES. What was the status of your Historic Preservation, I believe with Mr. McDade? In the confirmation hearings you said it was a fine program.

Secretary WATT. The new budget to come forward will request about $4.7 million for the Historic Preservation and——

Mr. YATES. That is only for the National Trust?

Secretary WATT. Yes.

Mr. YATES. What is proposed for termination?

Secretary WATT. We are recommending no funding.

Mr. YATES. And in your conversation with Mr. Dicks and Mr. Loeffler you said if it's so good, let the states take it up.

Secretary WATT. I think some of the states have tremendous programs and they will continue them. I wouldn't draw the conclusion if we drop Federal funds from it that it will collapse. I certainly hope that is not the case.

Mr. YATES. What if it's threatened with collapse? Would you recommend Federal funds for it then?

Secretary WATT. We would only if a clear Federal responsibility exists, and in that particular situation it's another grant program so there are state funds to carry it on. The degree of activity which will be carried out by the states will be determined by what priorities they give to it. This will help this committee, members of Congress and the Executive Branch to determine what priorities really belong to some of these programs.

PREDATOR CONTROL

Mr. YATES. You talk about a new position predator control.

Secretary WATT. Yes.

Mr. YATES. What is the new position?

Secretary WATT. We don't have one; we will be developing one.

Mr. YATES. Do you have any ideas on changing the existing program?

Secretary WATT. I do.

Mr. YATES. Can you tell us what those are?

Secretary WATT. I prefer not to mention that.

Mr. YATES. That must be tied in with the Office of Management and Budget.

Secretary WATT. We aren't that far along.

Mr. YATES. Can you tell us on March 10?

Secretary WATT. No; it's not a budgetary issue.

Mr. YATES. When do you think you will have an announcement on that program? Can you give us an idea of the time?

Secretary WATT. About July 4.

Mr. YATES. What will happen to the program in the interim? Will it go along on the same basis?

Secretary WATT. Yes.

Mr. YATES. Under the same regulations?

Secretary WATT. Yes.

Mr. YATES. If you are so concerned about the predator control program perhaps the committee shouldn't fund it for the future. Would you recommend that?

Secretary WATT. I don't think there is much funding going into the program now.

Mr. YATES. Sixteen million.

Secretary WATT. If we are changing the predator control program it will be to improve it.

Mr. YATES. Is this the kind of program you ought to leave to the States?

Secretary WATT. I think the states and users need to play a much more active role.

Mr. YATES. If, as in the case of Historic Preservation, it's decided it isn't a Federal responsibility, then it's up to the states to take it over?

Secretary WATT. I think that the beneficiaries of any program ought to pay for it.

Mr. YATES. All right; we may help you on that one.

Secretary WATT. There is also the Federal responsibility that we may need to talk to you about too.

Mr. YATES. That is just for the horses and burros, isn't it?

Secretary WATT. Some of these predators, such as prairie dogs, are on public lands. In addition, prairie dogs are taking over substantial acreages of our public lands. We need to appropriately manage those public lands and not let them be destroyed by prairie dogs.

Mr. YATES. Just prairie dogs? We don't worry about the coyotes?

Secretary WATT. We worry about them too. As you have sensed, my intention is to be a little evasive on this until I get this whole thing put together, and then I will be eager to talk to you about it. You had sensed that, I assume.

Mr. YATES. Yes. My antenna were vibrating.

PARK AND REFUGE RESTORATION

Do you propose a program to restore and renovate parks that have deteriorated?

Secretary WATT. Yes.

Mr. YATES. Do you have a similar program for refuges?

Secretary WATT. We have focused on that to some degree and have monies in the budget that will come up on March 10 for the protection and improvement of some of the refuges.

Mr. YATES. What about personnel for taking care of them? In the hearing we had on the Fish and Wildlife Service, we were shocked by the paucity of numbers of personnel who are administering the refuges; have you look at that?

Secretary WATT. I think we have too many people shuffling papers that are not given much credence in the decisionmaking process and not enough people on the land.

Mr. YATES. That is fine with us. The point I am trying to make is that it would have been impossible for the numbers of people who are responsible for taking care of those refuges to take care of them. It didn't seem right to me. Unfortunately, there were no answers when I asked these questions yesterday.

I would urge you to take a look at that program to see whether your refuges are being properly administered in view of the numbers listed. That includes outside help as well.

Secretary WATT. The concern is well justified on all these Federal lands.

YOUTH CONSERVATION CORPS

Mr. YATES. While the funds are in the Forest Service you work with them in administering the YCC program.

Secretary WATT. This year they changed that.

Mr. YATES. You will have it now; excuse me.

Secretary WATT. We now have it and we are suggesting that we drop the ball. We think it should not be funded.

Mr. YATES. Is this a fumble you really want to have?

Secretary WATT. Yes; that program does not have any real merit.

Mr. YATES. You are disagreeing with your own people. Your own people testified yesterday that the YCC young people do a most credible a job on work that has to be done in the wildlife refuges.

Secretary WATT. Who testified on that? Fish and Wildlife?

Mr. YATES. Yes; the point is I am sure if you were to ask the Forest Service that same question and the Park Service that same question they would say these young people do a good job.

Secretary WATT. They would gladly take any help they can get as long as it's outside their budget. If you give them the choice between $20 million to hire young people to handle their resource base or $20 million for a YCC program, I can guarantee what their answer is going to be.

The YCC program is not geared toward those disadvantaged teenagers. Enrollees are selected at random and by a computer printout and it's a program that aids principally middle income people, so it doesn't serve a social objective.

Mr. YATES. Would your answer be different if the program were limited to inner city young people?

Secretary WATT. This Administration is supporting summer job programs for those core teenagers. So the Administration is financing those programs; but across the board we are limiting the YCC and YACC programs because they are not targeted to a social problem and they are not a good investment in protecting the resource base.

We would rather have that money though put into the respective bureaus. It's a social program that does not realize its own objectives.

Mr. YATES. Did the amount of money saved by the elimination of YCC for the Fish and Wildlife Service go into the resource base for that agency?

I don't think it did, did it?

Secretary WATT. It was never in it and in the case of the Park Service we are asking for $105 million; so if you were to shuffle those accounts you can do it that way.

Mr. YATES. I take it you are not very enthusiastic about the program.

Secretary WATT. That is correct.

ACID RAIN PROBLEM

Mr. YATES. How much is budgeted for a study of the acid rain problem? Is there a budget item for that?

Secretary WATT. There is money in the budget of several agencies, including Fish and Wildlife Service, Park Service, and Geological Survey. I don't have that figure with me today but a study was made of that last year and a coordinated effort between those agencies and EPA and several——

Mr. YATES. Who is coordinating the program in Interior, which agency?

Secretary WATT. I believe Fish and Wildlife Service is coordinating that.

Mr. YATES. Who is coordinating it throughout the government?

Secretary WATT. The Office of Science and Technology Policy.

Mr. YATES. Public Law 96–511 authorizes the Department of Interior to spend $84 million over ten years for salmon head enhancement in Oregon and Washington.

Are you going to provide funds for that?

Secretary WATT. Congressman Dicks asked about that and I didn't have the answer for him either.

Mr. BETTENBERG. There is no money in the Interior budget for it. This mention of it is the first time I really knew it had been enacted. My original thought was that it was primarily a Commerce Department funding item.

STEEL AND LEAD SHOT

Mr. YATES. What is your feeling about the steel and lead shot controversy?

Secretary WATT. We have looked at that and now I think with the leadership of this Committee, you put the condition on that those Federal regulations will not be effective unless approved by the respective states. I think that was appropriate and should continue, as this committee has shown the leadership on that.

FISH AND WILDLIFE PERMANENT APPROPRIATIONS

Mr. YATES. What about the question of permanent appropriations for Fish and Wildlife assistance which approximates $125 million a year?

Secretary WATT. Those are continuing. There are no cuts in those at all.

Mr. YATES. Why would you want to continue those? Why wouldn't you want to save $125 million a year?

Secretary WATT. It's a permanent appropriation.

Mr. YATES. I know; how about sending legislation up?

Secretary WATT. I think they are good programs.

Mr. YATES. All right.

Secretary WATT. There you see the beneficiary pays, though it's a tax on the equipment, and the beneficiary pays for it and is eager to pay for it and eager to expand the base.

Mr. YATES. Is it a kind of user charge?

Secretary WATT. That is correct; a modified user tax charge concept.

POLICY ON CLEAN AIR ACT

Mr. YATES. What will be the attitude of the Administration with respect to the clean air over the parks? Will the Administration try to maintain the same quality of clean air that the previous Administration did?

Is that an inappropriate question?

Secretary WATT. No; I just laughed because I am not sure what the other Administrations have really done.

Mr. YATES. They established levels.

Secretary WATT. Is that the class 1 type concept?

Mr. YATES. That is what we are talking about. Are you going to continue it as a class 1 concept?

Secretary WATT. I don't know of any plans to change that situation.

Mr. YATES. Will you look inside yourself and see if you have any?

Secretary WATT. I don't at this time.

Mr. YATES. Which means that you may?

Secretary WATT. It means that I don't have lead responsibilty on the Clean Air Act.

Mr. YATES. Don't you have lead responsibility on protecting the clean air of the parks?

Secretary WATT. Absolutely.

Mr. YATES. Are you going to maintain that?

Secretary WATT. We will protect the parks, you bet.

Mr. YATES. How about the air above the parks?

Secretary WATT. You have to have clean air to have good parks.

Mr. YATES. What quality clean air? Dirty air, clean air, or clean, clean air?

Secretary WATT. It needs to be pretty clean, doesn't it?

Mr. YATES. I think so. I am trying to find out what you think because you are the boss in this.

Secretary WATT. We will see to it that the parks are properly protected. This is an issue——

Mr. YATES. Can I take for the record your answer to be that you are going to preserve clean, clean air?

Secretary WATT. We will protect clean, clean air. I am being evasive because hearings start on the 15th of this month on the Clean Air Act amendments. Every scribe in town is seeking to get some Administration spokesman to square off against another Administration spokesman and the facts are that the Administration's position has not been developed and I am trying not to create conflict within the Administration.

I would be glad to talk to you about it, but there are a lot of people behind me who I am being evasive for.

Mr. YATES. But we have to put you on the record on some of these very important decisions.

Secretary WATT. The whole thrust of this Administration is to protect the parks and not let deregulation occur.

Mr. YATES. The parks are the jewels of the Federal Government; this is to make sure that the jewels don't get dirty; right?

Secretary WATT. Good.

Mr. YATES. What happens to the proposed development like the Kaiparowits in Utah? Do you want that to go ahead?

Secretary WATT. I am not up on Kaiparowits. I was involved many years ago when the first proposal was to build it on the first plateau down near the lake. I drew the wrath of some of the proponents of building that because I ruled that out. After that decision I moved on to other responsibilities and am not up to date.

POLICY TOWARD PARKS

Mr. YATES. We know we are going to preserve the clean, clean air over the parks and we know that we are not going to permit mining or drilling for oil in the parks.

You have asserted a total devotion to the parks; that is right, isn't it?

Secretary WATT. Yes.

Mr. YATES. Particularly those in the West?

Secretary WATT. Particularly those I know because I have grown to love them. I have not been to Indiana Dunes. I might hold that near and dear if I had ever been there.

Mr. YATES. We will help you.

PARK SERVICE AND WHITE HOUSE

You have a job of taking care of the White House through the Park Service.

Mr. BETTENBERG. I don't think the Secretary has been told that yet.

Secretary WATT. I don't plan to paint it if that is your next question.

Mr. YATES. There are several agencies that take care of it. We fund it through the National Park Service in accordance with the requests that come to the Park Service from the White House and in another Appropriations Subcommittee the costs of the White House are budgeted as well.

I think we ought to put it in one agency. We ought to let the Park Service or the White House do it. Why split it up? I think what happens as a result the government spends too much money in the process. It's really duplication.

Is there anything you can do to persuade President Reagan that he can save money if he puts it all in the National Park Service? You are putting so many things in the National Park Service why don't you put the whole White House there as well?

Secretary WATT. I agree with your philosophical commitment that too many cooks in the kitchen, I can't remember that metaphor——

Mr. BETTENBERG. We tried that with OMB last fall.

Mr. YATES. What happened?

Mr. BETTENBERG. They ruled against us.
Mr. YATES. But there is Mr. Stockman now.
Secretary WATT. He may take a fresh look at it.
Mr. YATES. Until the President talks to him.

PARK CONCESSIONAIRES

Let's talk about concessionaires in the parks. If the Park Service finds a concessionaire not performing, as this committee found that they weren't in a number of parks, do you believe that you will support termination of the concession contract and possibly forfeiture of the development by the concessionaires?

Secretary WATT. Under the terms of the contract, certainly.

Mr. YATES. Would you put such a provision in the terms of the contract?

Secretary WATT. I am sure it always is and should be.

MOTOR BOATS ON COLORADO RIVER

Mr. YATES. Another source of contention that we hear about that ruffles somewhat is the use of motorized boats on the Colorado River. You are going to have the question of balancing non-motorized boats and motorized boats.

Would you prefer hand propelled or motorized boats?

Secretary WATT. You are picking on a subject that I really know. I have been evasive on so many questions.

Mr. YATES. Go ahead.

Secretary WATT. I have been there and I think people ought to have the choice. I believe in freedom of choice on going down that Colorado River. It's a great resource that ought to be made available to as many people and as many types of people as can use the base without degradation.

Mr. YATES. Are you going to allow the balance?

Secretary WATT. I am going to see that the general policy of the Department of Interior is to allow that freedom of choice for motorized rafts as well as non-motorized rafts.

Mr. YATES. If the complaint were given to us that the use of motorized rafts was permitted to an extent that almost blocked non-motorized rafts from using the River——

Secretary WATT. There is a balanced schedule for both.

Mr. YATES. And you will observe that?

Secretary WATT. I went down the River in September and had a delightful experience and it needs to be made available to other people.

JACKSON HOLE AIRPORT

Mr. YATES. I hope you don't contemplate expanding the airport at Jackson Hole.

Secretary WATT. I have studied the Jackson Hole Airport problem for years.

Mr. YATES. You were there?

Secretary WATT. I have been there. I really like the Tetons.

Mr. YATES. I like the Tetons too.

Secretary WATT. They are my favorite range.

Mr. YATES. I might be accused of propounding a leading question to you in that instance.

Secretary WATT. I have noticed that throughout the day.

Mr. YATES. Really? I wasn't aware of that.

I didn't notice any objection by the court.

Secretary WATT. If they are going my way, I like them.

Mr. YATES. I think probably most of them have been.

Secretary WATT. We have had preliminary conversations with a host of interests, and I think there is some possibility for a breakthrough on this subject.

Mr. YATES. Are there any appropriated funds that you have to do anything with the Jackson Hole Airport at this time?

Mr. BETTENBERG. Not that I am aware of.

Mr. YATES. So that if any changes were contemplated that required funding you would have to come back to this committee for funding?

Mr. BETTENBERG. Yes, sir; either funding or a reprograming.

Mr. YATES. I take it this committee would be advised of an intention to go through the airport and highway fund?

Secretary WATT. Yes, sir.

Mr. YATES. Beforehand?

Secretary WATT. Yes.

Mr. YATES. I sense, Mr. Secretary, you are an expansionist.

Secretary WATT. I hardly need to say anything to indicate that to you.

Mr. YATES. You expand and you retrench.

Secretary WATT. I go both ways.

MANAGEMENT OF OFFICE OF SURFACE MINING

Mr. YATES. What are you going to do about the Office of Surface Mining?

Secretary WATT. We are planning major management changes.

Mr. YATES. What do you propose to do?

Secretary WATT. We will honor the intent of Congress, which gives primacy to the states. We will aggressively do that. We will review all the regulations to be satisfied that they are consistent with the intent of Congress and the laws. We do not see any need to make any material change to the act, itself.

We are bringing in new management teams. The President announced earlier this week his nomination for the head of that office. We expect to make significant changes in the management of that to make it more responsive to the mission that was outlined by Congress, so that we can have proper reclamation and a balanced perspective there that I am advised by governor, after governor, after governor, has not existed in the past.

Mr. YATES. Would your determination to do this in any way change your answer at the confirmation hearings?

Secretary WATT. That is exactly what I told the Senate committee.

Mr. YATES. A reporter for the Wall Street Journal doesn't agree. He says:

> Meanwhile, Mr. Watt appears to be reneging on promises he made during his Senate confirmation hearings that he wouldn't push for basic changes in the federal strip-mining law. In the past few days, industry officials and some Senate staffers contend they have been told by Mr. Watt's aides that he is "reevaluating" his stance on whether to lobby for amendments to the law.

Secretary WATT. That is what the paper says.

Mr. YATES. Is that what Mr. Watt said?

Secretary WATT. It is not what I said, and not what I said then; and that paper is wrong. Let us not let the Wall Street Journal control our daily agenda.

Mr. YATES. When would you guess all of the eligible states will have approved state programs?

Secretary WATT. On OSM?

Mr. YATES. Yes.

Secretary WATT. I don't even have a good guess for you. We are working with them, and hopefully the atmosphere will change.

Mr. YATES. With regard to our letting the states take the lead with respect to strip mining, how active will you be in overseeing implementation of state programs?

Secretary WATT. We have a statutory responsibility of oversight, and we will be working with the states and will aggressively pursue that to see that the objectives of the statutes are adhered to.

INDIAN PROGRAM CONSOLIDATION

Mr. YATES. In view of the fact you intend to consolidate a number of programs within BIA, does this mean you will be doing away with bureaus within BIA, and possibly area offices?

Secretary WATT. We hope, if Congress buys that block grant aid concept, that we will be able to reduce significantly the employment in the different offices, and the new man that we have coming on board is from one of the successfully manned tribes of the Northwest, and he will be addressing his attention to the regional superintendent's office and the whole organizational structure.

Mr. YATES. We have reached the magic hour of four o'clock, and we do not propose to keep you any longer.

We have certain questions for the record we will ask you to reply to.

I am concerned about the question of territories. That is a very complicated matter, particularly now as we go into the period for the formulation of new governments in the territories and the funding of new governments and the question of the poor people who are dispossessed from their island homes as a result of the nuclear explosions and who have suffered ever since that time.

We will have some questions on that and a few questions respecting the Office of the Secretary, and possibly some others. We will submit those to you for your answers.

[The questions and answers follow:]

Animal Damage Control

Question: When the Agriculture Appropriation bill for fiscal year 1981 was on the floor of the Senate, Senator McClure added language which would transfer the Predator Control program to the Department of Agriculture. This language was stricken in Conference, but $500,000 was included in the Ag bill for a study of the animal damage control program to be conducted jointly by the Secretary of Agriculture and the Secretary of Interior. What is the status of that study?

Answer: The Congress indicated that the Department of Agriculture was to have the lead in this cooperative feasibility study. The Department of Agriculture has made no formal contacts to initiate this study.

Strategic and Critical Minerals

Question: The 96th Congress, in recognition of the increasing vulnerability of the United States to a cutoff of critical minerals, passed the National Materials and Minerals Policy Research and Development Act of 1980. The Act calls for improved capacity to assess international minerals supplies, increased mining and metallurgical research in critical and strategic minerals, and improvement in the availability and analysis of mineral data in Federal land use decisionmaking. Do you agree that the minerals situation in this country is a potential problem? If so, in what ways do you think the Bureau of Mines can contribute to alleviating the problem?

Answer: A disruption of foreign supplies of any of the strategic and critical minerals upon which our economy and our defense posture depend would certainly be a very serious problem. The information and analysis and research and development programs of the Bureau of Mines would be an important factor in helping the Nation deal with such a crisis. In the event of a supply disruption, the Nation would first have an urgent need for accurate and timely information on the scope of the problem.

The ongoing information and analysis programs of the Bureau of Mines would provide the best available information on the impact of a disruption of supplies from a particular area or supplies of a particular commodity in terms of the availablity of supplies, the economic impact of a disruption, and the supply/demand characteristics of the mineral commodities involved. We are improving the Bureau's capacity to assess international mineral supplies through its automated Minerals Availability System (MAS). This system will be accelerated to cover foreign sources of mineral commodities, to enhance the quality of the data collected, and the quality of supply analyses performed with the data. Secondary sources of mineral commodities will also be included in the system. MAS will provide worldwide mineral coverage for select strategic and economically important commodities in a framework of changing technological, economic, and political variables. These capabilities will provide a better understanding of the scope, extent, and impact of any emerging problem, and will enable us to develop

alternative means of dealing with the problem. MAS data will include alternative sources of supply for the disrupted commodities, and accurate information on what supplies could be brought into production to meet the Nation's needs. It will also provide information on the economic impacts in terms of the impact on commodity prices.

One possibility for alleviating or preventing a supply problem is increased production from domestic resources on Federal lands which are not presently being used. The Bureau of Mines will more thoroughly assess the resource potential of Federal lands by more intensive examination of areas showing high mineral potential. Detailed aerial and surface work will be combined with knowledge gained from ongoing regional mineral land assessement and selected core drilling. Sufficient subsurface investigations will be conducted to provide more realistic estimates of the nature and extent of the mineral resources contained on Federal lands. This data, and the analyses performed with it, will improve the land use decisionmaking process, and assure that we know what resources are available to us in the event that we need them.

Research and development alternatives are generally of a longer term nature. However, research conducted now can be a help in dealing with a future supply disruption. Existing Bureau of Mines research efforts are being expanded to provide ways of producing commodities more efficiently from existing domestic sources, to provide technology to allow the use of presently unusable domestic resources, to provide ways of stretching out the supplies of the commodities which might be available through more efficient use, and to provide substitutes for those commodities which might not be available.

The Bureau of Mines will increase its efforts dealing with increasing the supplies or developing substitutes for chromium, manganese, cobalt, and platinum-group metals, which are the commodities facing the greatest likelihood of supply disruption or market manipulation. It is working to provide enhanced methods or processes for the most efficient production and use of available mineral resources in the areas of underground mining, mineral production information systems, mining and processing materials, and equipment. Other existing and expanding efforts will address ways of recovering more minerals which are currently lost during processing, extending the life of materials used in mineral operations, and more effectively recycling scrap mineral products, as well as conserving water and energy during mineral processing. As a way of extending the use of available supplies, the Bureau is expanding its efforts to provide for improved understanding of current and new materials performance, processing, substitution, and adaptability of engineering designs.

In the longer term, Bureau basic and applied research efforts in mining and metallurgical technology will be expanded to provide the technological capability for meeting the problems that can be anticipated a decade or more in the future, when ore grades are likely to be lower, environmental constraints are likely to be more severe, and the energy required for new primary metal operations is likely to be more expensive.

State Regulatory Programs

Question: As of the end of February, 16 of the 29 States producing coal or with the potential to produce have approved State programs under the Surface Mining Control and Reclamation Act of 1977. When do you anticipate that all the eligible States will have approved State programs?

Answer: Twenty-four States which produce coal or have the potential to produce coal submitted State regulatory programs for Departmental approval by the deadline of March 3, 1980. The eight States which submitted programs that have not been approved received either partial approval or disapproval of their programs in the initial review. These States have been temporarily enjoined by State courts from resubmitting their programs. These injunctions may run up to one year before the Department of the Interior would be required to implement a Federal regulatory program in the States. The one year period will end in late July for Indiana, and will end for the other States in November and December 1981. We expect that all eight States will resubmit their programs when the injunctions terminate, and that these programs will be approved approximately 60 days after the resubmission.

The status of other States is as follows:

- Alaska: Program submission was delayed because the study of the applicability of Surface Mining Control and Reclamation Act requirements to mining in Alaska was not complete. This study was finished last fall and the State is now working with the Office of Surface Mining to develop a program for submission this Spring.

- Georgia and Washington: These States indicated that they would not develop State regulatory programs. OSM is currently working on Federal regulatory programs for these two States.

- Massachusetts, Rhode Island, Michigan, and Oregon: Although there is no coal production in these States, there is an interest in exploring for coal. OSM is developing a minimal coal exploration regulatory program for these States.

- Arizona: No State program is required, as the only mining is on Indian lands which are regulated by the Department of the Interior.

Question: Do you intend to review and change any of the already approved State plans?

Answer: The Department does not anticipate that it would rescind any approvals already given. However, those States will be given the opportunity to revise their programs if they wish to reflect new regulations now being developed. In addition, many of the States received conditional approvals which require that the State take further action to correct deficiencies. These conditions are being reviewed and some are likely to be removed as a result of the changes now being made in OSM regulations.

Abandoned Mine Reclamation Fund

Question: The FY 1982 Carter budget initiates a shift in the Abandoned Mine Reclamation Fund from Federal predominance to State predominance. Do you plan to continue this policy?

Answer: Yes. Current policy is for the States to have the predominant role, with the Federal program limited to those types of projects for which the Department has unique authority or capability. These include multi-State projects, R&D projects, emergencies, and projects in States not having a State program.

Question: Several States, particularly Tennessee and Kentucky, have in the past expressed reluctance to add this program to their State government load. How can we assure that strong reclamation programs will be operated in those States?

Answer: Within the limits of our resources, we are assisting the States in every possible way to develop and administer State reclamation programs. If States do not avail themselves of the opportunity to administer their own programs, then federally administered programs will be implemented in those States commensurate with their reclamation problems.

Trust Territory of the Pacific Islands

Question: A compact was recently initialed by the United States Government and three local governments in the Trust Territory of the Pacific Islands providing for termination of the trust and establishing a "free association" between each entity and the U.S. Does the Administration intend to honor this compact or negotiate further with the local governments?

Answer: The Interagency Group on Micronesia will convene soon to consider the new Administration's direction and policy with regard to future political status options, the Compact of Free Association, and termination of the Trusteeship Agreement.

Question: If the compact goes forward, when do you believe it will be approved by the local governments? Submitted to Congress?

Answer: Assuming the Administration accepts the compact as initialed, several subordinate executive agreements remain to be negotiated. While it is difficult to say how long the negotiations on these subsidiary agreements might take, estimates range from two months to two years. Following signature, the Compact and related documents would be presented to the Micronesian people and the U.S. Congress for their approval. Prior to the Micronesian plebiscite, a voter information program would take approximately six months.

Facility Construction and Operation Improvement

Question: Three years ago the Committee, in the appropriations bill, directed the Secretary to secure outside assistance to develop a system to straighten out severe problems in the Indian construction and maintenance programs. The Facility Construction and Operation Improvement Division was established to address the problem. A good program was developed and used extensively by the former Assistant Secretary for Indian Affairs. It has not been popular with the BIA. The Committee was concerned that the group would be shunted aside and/or buried. A separate appropriation was provided to ensure their visability and language was included in the Statement of the Managers in the 1981 Conference Report stressing the importance of this group. The 1982 budget buries them in the Secretary's appropriation again. What plans does Secretary Watt have to use this group?

Answer: We plan to fully utilize the Facility Construction and Operation Improvement Division. The importance placed upon this function by the Congress is shared by me and I intend to adhere to the intent of the language in the FY 1981 Conference Report.

For FY 1982, FCOID has been identified as a separate budget activity in the Departmental Management appropriation, which will in the Department's view continue its visibility.

As a further indication of my commitment to this program, this office now reports directly to the Principal Deputy Assistant Secretary - Policy, Budget and Administration.

QUESTIONS SUBMITTED BY THE HONORABLE CLARENCE D. LONG

Wildlife Balance

Question: The Department of Interior is entrusted with the responsibility of protecting wildlife. There is much concern among the public and wildlife protection groups that you view wildlife as something to eradicate, not conserve. How will you achieve an equitable balance between man and wildlife? What are your plans for wildlife recovery?

Answer: Within the Department of the Interior, the U.S. Fish and Wildlife Service is the primary organization responsible for wildlife resources. This responsibility varies from providing protection to species that are threatened with extinction to the establishment of hunting regulations for those species that have harvestable surpluses. There are also some programs within the Department that are designed to control damages caused by wildlife. Achieving an equitable balance between the concern for the species and the demands of the public is not always easy. However, professional wildlife managers are able to look at the different kinds of wildlife populations and establish an equitable balance. While some species are able to sustain substantial harvest, others must be fully protected.

For those forms of wildlife that are threatened, recovery plans are formulated on a species by species basis. These plans not only identify the factors which limit populations, but they also identify recovery actions.

CITES

Question: The United States has been a leader in international efforts to protect wildlife and endangered species. I understand that there has been discussion about withdrawing the U. S. from participation in the Convention on International Trade in Endangered Species (CITES). What are your plans for CITES?

Answer: I have no plans for withdrawing the U. S. from CITES. The U. S. will try to continue to be a leader in international wildlife conservation, but we would like to lead in a somewhat different direction.

At the third CITES conference, just concluded in New Delhi, there was a continuation of the trend to list species in an impractical manner. I am seriously concerned that too many countries are being led down the road of believing that listing equals conservation. The real work of CITES in controlling trade that adversely affects plants and wildlife is the hard, day-to-day routine of issuing meaningful permits, based on scientific judgments, and backed up by effective law enforcement and data gathering and analysis. Listings of species that are not necessary for biological or practical enforcement reasons drain money and manpower resources from these essential jobs.

We attempted to make this point especially in regard to the listing of parrots at the New Delhi conference, but our views were rejected. I am afraid that many non-government organizations which do not have the daily responsibility of making CITES work were instrumental in leading many countries down this impractical road of dreams.

Now you must understand that I am not opposed in any way to conserving natural resources affected by trade. I recognize our responsibility as a major market for many species, and I am aware of the need for international cooperation in conserving species native to this country and found in international trade. However, I am also aware that many species are valuable, renewable resources and are traded by legitimate, responsible businesspeople.

What I will advocate is a continued effort to focus on the meaningful, practical implementation of CITES. We will review listed species that occur in the U. S., and those which are traded significantly by the U. S. Where we find, according to the criteria agreed to by the CITES parties, that there is insufficient biological or practical justification for their listing, we will propose de-listing.

We will shortly publish a Federal Register notice asking for comments, as required by our regulations, on the taking of reservations. Pending such comments, I have no independent plans to take a reservation on the listing of parrots, as some have feared. But, I will instruct our enforcement officers to be flexible, taking into account the probable difficulties legitimate traders will have in obtaining permits from other countries.

I will also introduce a more realistic and flexible attitude into our controls on species being exported from the U. S. We have been rigid and legalistic for too long, imposing heavy burdens on State governments and private individuals. We are going to have to rely more on the responsibility of individuals, and focus our enforcement efforts on those who refuse to be responsible.

Internationally, we will, within our means, continue to offer assistance to other countries in establishing scientific and management authorities, setting up permit mechanisms and training biologists, administrators and enforcement officers. We will also support the practical tools being developed through CITES, such as identification manuals and uniform permits.

Animal Damage Control

Question: In 1980, Secretary Andrus issued directives to Interior Department personnel designed to more selectively trap predators and to do this trapping in the most humane manner possible. How well has the program worked since its implementation? Do you expect to continue this program?

Answer: Former Secretary Andrus issued directives in 1979 to utilize traps in the most selective and humane manner possible. The Service recently completed extensive testing of a new trap pan tension device in the West. The results showed that the device effectively increased selectivity in arid areas and the Service this year is modifying 9,500 traps used in the Southwest to accept this device. The Service is continuing work to develop a device that will work in more humid areas of the West.

Question: I understand that you will increase the Animal Damage Control Program budget by nearly $1 million. Since this is a controversial program with support limited to those beneficiaries of the service--primarily the livestock industry--why shouldn't the industry pick up some of the expense through a fee or charge?

Answer: I have not proposed any programmatic increases for the Animal Damage Control Program for FY 1982. However, I am requesting an increase over the FY 1981 appropriation level to compensate for such inflationary increases as GSA space rental and the FY 1981 federal pay raise.

The Animal Damage Control Program is a cooperative program and the funds appropriated for it by Congress are supplemented by cooperator funds--over $7 million in FY 1981. A substantial part of these cooperator funds is provided by the livestock industry in a variety of ways--for example, a State head tax on livestock or regional predator damage control board assessments.

Question: Compound 1080 has been banned since 1972 as a predator damage management practice. Do you have any plans for reversing this ban? If so, why?

Answer: As I have indicated we are currently developing a new position on predator damage control; therefore, I prefer not to discuss changes in the program until the new position is developed.

Wild Horses and Burros

Question: Wild horses and burros are managed now under the multiple use concept. Why have you expressed a desire to make these creatures game animals?

Answer: I did not intend to imply that I will make wild horses and burros game species in my testimony before the Senate Commerce, Science, and Transportation Committee. However, I do intend to manage wild horse and burro population levels, just as the population levels for game animals are managed.

There are three consumptive users of the vegetation resource on public lands: wildlife, livestock, and wild horses and burros. Wildlife population levels are controlled through the use of hunting permits and animal predation. Livestock use is controlled by grazing permits issued by the Bureau of Land Management. On the other hand, wild horse and burro population growth is not under control. Although the current management program is beginning to reduce the size of wild horse and burro herds, we are looking at options to improve program efficiency and reduce government costs. If the deterioration of the rangeland resources in some areas is to be stopped, consideration should be given to removing excess wild horses and burros from public rangelands in order to preserve and maintain a thriving natural ecological balance and multiple use relationship.

Endangered Species

Question: I understand that the Department will continue funding only for "high priority" endangered species programs. What are "high priority" endangered species programs? What do you consider to be low priority endangered species programs?

Answer: For several years, in an effort to focus planning and budgeting on species most in need of support, the Office of Endangered Species has utilized a priority system which ranks all species, both listed and unlisted. For the recent budget reductions, this priority system was used as a guide for identifying proposed decreases in the various activities of the Endangered Species Program. Examples of high priority species are the whooping crane, Mississippi sandhill crane, and California condor. Species of lower priority are the bald eagle and brown pelican. In general, low priority species programs involve those species which face a low to moderate threat to their continued existence.

Future funding of the Recovery program will be reduced in several areas. Reductions proposed in research will be made by eliminating funds for in-house research objectives scheduled to terminate in FY 1981, reducing the level of research contracts, and eliminating lower priority research objectives. The high priority core of the program, addressing the recovery needs of such species as the California condor, whooping crane, Mississippi sandhill crane, Puerto Rican parrot, Hawaiian forest- and sea-birds, Minnesota wolves, and dusky seaside sparrow, remains intact.

Lower priority endangered species activities conducted on refuges will be phased out in FY 1981. The focus of the Recovery program will be on precluding further deterioration of species and their habitats, rather than conducting enhancement actions such as habitat manipulation. The level of recovery actions on non-Service lands will also be reduced. Funding for recovery actions scheduled for completion in FY 1981, or reduction in FY 1982, will be eliminated.

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Outer Continental Shelf Leasing

Question: What is the status of the offshore drilling program in the Baltimore Canyon? In view of the recent decision of several major oil companies to give up their leases in the Baltimore Canyon, do you have any intention to offer new leases for sale?

Answer: The Baltimore Canyon area is still a frontier area. Two oil and gas lease sales have been held with a total of 132 tracts leased. Twenty-four wells have been drilled on 18 of these tracts. Five wells on three tracts yielded discoveries or shows of hydrocarbon in 11 different zones (mostly gas with some condensate or oil). Two wells are being drilled now. At least four more wells are in various stages of planning. Eight tracts have been relinquished.

A third sale is planned for December 1981. The U.S. Geological Survey has set the conditional mean estimate of undiscovered recoverable resources at 3.4 billion barrels of oil and 14.2 trillion cubic feet of gas. Tracts not sold at the December 1981 sale would be reoffered in June 1982. A fourth Baltimore Canyon sale is scheduled for November 1983, with reoffering slated for May 1984.

The above information is based on the current leasing schedule. I am considering a revision of the OCS leasing program, including ways to provide for earlier entry into areas of high potential and to streamline the process followed by the Department in preparing for sales. I have not made any decisions concerning the acceleration of leasing in any particular OCS areas.

Trapping

Question: What is the Department of Interior's trapping policy and what is the Department doing to implement this policy?

Answer: The use of traps by the Department of Interior, through the Fish and Wildlife Service, is governed by several factors. These factors are evaluated generally at the field level and include: (1) the effectiveness and efficiency of the trap device to be used given the particular situation, e.g. topography, climate, species doing damage, (2) the safety of the trap to humans, (3) the relative humaneness of the trap (quick kill, leghold, box) and (4) the selectivity to take the offending animal. In all instances, traps are used in accordance with State and local rules and regulations.

Question: What is the definition of humane trapping that is being followed by the Department of Interior on our public lands?

Answer: Connotations related to avoiding and/or alleviating pain and suffering are implied by humaneness but are ill defined and subject to what is perceived rather than any objective measure. The anxiety associated with physically restraining an animal in a snare, trap or cage may create more "suffering" than trauma associated with bruises or cuts on an appendage. Perhaps the only acceptable yardstick of humaneness resides in compassion for the animal, despite what has to be done. Since neither biologists nor humanitarians have been able to arrive at a precise definition of humaneness, the Department feels factors such as selectivity and the reduction of injuries are measurable quantities that are important element of humaneness.

Question: How is the definition incorporated into the Department's trapping policy?

Answer: Guidelines are being incorporated into the program to insure, to the greatest extent possible, that traps take only the offending animal and reduce the potential for injury. These guidelines include (1) traps shall be placed to offer minimum exposure to nontarget species, (2) attractants and lures shall be species-specific as possible, (3) leg-hold traps shall not be used to take bears, (4) traps used to take large mammals will have smooth off-set jaws, and (5) traps shall be checked as frequently as possible and in compliance with State or local laws.

Question: What research has been conducted by the Department to support its present trapping policy from the point of view of selectivity and humane treatment?

Answer: Two areas of research address these problems. With regard to selectivity, recent studies involve trap pan tension devices which assure that only animals as large as the target species are taken. Some field tests of these devices are complete and they are being utilized in the field. Further studies are also underway.

With regard to humaneness, considerable research has been directed toward modifications of traps, such as padded or offset jaws, to reduce injury to trapped animals. No universally acceptable device has yet been found. Research has also investigated various trap tabs which are usually chewed by the trapped animal. These tabs can either contain tranquilizers or fast-acting toxicants. Both would prevent injury to captured animals, but the toxicant tab would preclude release of non-target species.

Question: What is the research policy that the Department believes would be most likely to stimulate and improve the development of a more humane and selective trapping policy on public lands?

Answer: Departmental research policy encourages research into selective and humane capture techniques. Field personnel participate in testing new methods and tools developed through research, and such cooperative efforts are currently underway.

Question: What research has been conducted by the Department on alternative trap technology?

Answer: Studies on alternative trap technology have involved modifications of the steel trap, such as padded and offset jaws, use of trap tabs to deliver tranquilizers and toxicants, and trap pan tension devices to improve selectivity. Alternatives to the steel trap such as snares have also been studied.

Question: What do the results show?

Answer: Results are mixed. Trap modifications have resulted in some reduction in trauma, as has the use of tranquilizers. However, many problems remain in developing practical and effective trap modifications that increase selectivity and reduce injury.

Question: What research is planned?

Answer: Research is planned to compare the effectiveness of various snares with standard leg-hold traps as well as to compare injuries sustained by coyotes in such devices. Suitable new central nervous system depressants and alternative delivery devices will be tested relating to "tranquilizer" tabs on steel traps, as well as studies to determine hazards of such tabs to non-target species.

Question: What are the constraints of pursuing a more humane trapping policy in terms of dollars, manpower and resources?

Answer: More humane trapping would require faster response time, more time spent on each request for assistance, more frequent trap checks, and increased research on trap pan tension devices, tranquilizers and fast acting species specific toxicants. The maximum total cost of such increased activities are estimated at $5.0 million and 55 FTP positions.

Question: What cooperative agreements exist between the Interior Department and the States relating to a humane and selective trapping policy?

Answer: There are no cooperative agreements between the Interior Department and the States specifically related to a humane and selective trapping policy. However, there is a master cooperative agreement between the Fish and Wildlife Service and each State in which the Animal Damage Control Program is conducted. These agreements reflect that the program will be conducted in the most selective manner possible.

Question: What analysis has been made of their effectiveness?

Answer: As pointed out previously there are no cooperative agreements specifically related to a humane and selective trapping policy. However, to assure that the Federal/State cooperative program is conducted as selectively as possible the Service: (1) limits control to areas where damage is occurring or has occurred in the past and is likely to reoccur, (2) uses methods and techniques which are effective and selective for the target species in lieu of traps where possible, (3) uses selective scents and placement of traps to avoid frequently used game trails and waterholes, (4) uses traps with offset jaws and incorporation of trap pan tension devices as development continues, and (5) conducts trap checks as frequently as possible.

Question: What analysis has been made of State laws relating to trapping policies regarding such matters as types of traps, frequency of checking traps and safeguards against trapping of non-target animals?

Answer: To assure that the Animal Damage Control Program complies with State and local laws and regulations on trapping, an annual examination and update of State and local laws and regulations is made.

Number of Traps

Question: What is the total number of traps now in the possession of the Fish and Wildlife Service?

Answer: Presently the Fish and Wildlife Service has about 60,000 traps in its possession, of which possibly 20% are in warehouses and 80% in the possession of trappers. Of those being held by trappers 50% or about 24,000 are in use at any one time.

Question: How many traps are: quick kill, box traps, leghold traps, other (specify)?

Answer: Safety and effectiveness allow use of quick kill (Conibear) traps primarily in water sets. Since complaints of this nature are limited, only about 500 of this type of trap are owned by the Fish and Wildlife Service.

Box traps are not effective for use on most predators. Their use is primarily limited to less wary animals such as skunks, ground hogs, and raccoons; therefore, only approximately 500 of these

types are in Service possession. The remainder, or about 59,000 traps, are offset jaw leg-hold traps of the type used primarily for coyotes.

Question: In which geographic areas are the traps used?

Answer: In excess of 95% of the traps are used in the 14 western states where the Fish and Wildlife Service conducts an operational animal damage control program.

Question: How many animals were caught in each of the past three years by: -quick kill
-box traps
-leghold traps
-other?

Please provide a breakdown of the species caught in each type of trap.

Answer: The following number of animals were caught in the past three years through the Animal Damage Control Program by :

	1978	1979	1980
quick kill trap	0	88	717
box trap	46	335	6,966
leghold trap	40,251	38,631	33,506
snare	3,976	4,091	4,375

Most of the animals taken by quick kill traps are beavers, muskrats or nutrias. Most of the animals taken by box traps are raccoons, opposums, or skunks. Most of the animals taken by leghold traps are coyotes, foxes, bobcats, or porcupines. Coyotes and some bear are taken by snares.

Question: How many traps go out of service each year?

Answer: About 5,000 traps per year are stolen, lost, worn out, damaged beyond repair, or otherwise go out of service.

Question: How many are stolen?

Answer: About 80% of the traps (4,000) which go out of service each year are stolen.

Question: How many traps does the Fish and Wildlife Service purchase each year?

Answer: The Fish and Wildlife Service purchases about 5,000 traps per year.

Question: What is the cost per trap?

Answer: The cost per trap is approximately: quick kill (#330 Conibear) $25.00; live or box trap $35.00; leghold traps (Victor #3N) $11.00.

Question: Total cost per year?

Answer: The total cost for traps per year is about $57,000.

Question: Who does the Fish and Wildlife Service purchase the traps from?

Answer: Most of the traps used by the Service are purchased from private Companies such as Woodstream Corporation, Montgomery or Herters.

Question: How much money did the Service obtain last year from the sale of pelts under cooperative agreements with the states?

Answer: The Service did not receive any money directly from the sale of furs. All the cooperative agreements specify that furs are the property of the cooperating State or county.

Question: How is the price decided upon?

Answer: Furs are sold by several methods which influence the price. Some are sold in the round, that is before the animal is skinned; others are sold in small lots to private buyers; while some are saved until a large quantity can be sent to a fur exchange.

Question: Who received the proceeds from the sale of the pelts?

Answer: All furs are the property of the cooperator; therefore, they retain the proceeds from the sale.

Question: How is that money spent?

Answer: Most cooperators use the proceeds from the sale of furs as a part of their animal damage control budget the following year. However, in some instances the proceeds are deposited into a general fund, for example a State or county general fund, from which disbursements for several programs are made.

Trappers

Question: How many trappers does the Fish and Wildlife Service employ full time?

Answer: The Fish and Wildlife Service employs 62 full time permanent trappers. In addition 234 trappers are employed by various States or counties, but supervised by Federal employees as part of the Federal Animal Damage Control Program.

Question: Part time?

Answer: The Fish and Wildlife Service employs 187 part time trappers.

Question: In what geographic regions?

Answer: All of these trappers are employed in the 14 western states where the Fish and Wildlife Service conducts operational animal damage control programs.

Question: What kind of training do they receive?

Answer: Training for the trappers consists of: on-the-job training by District Supervisors or Field Supervisors; annual or semi-annual training sessions within the districts for specialized or improved damage control techniques, equipment, or projects; annual or bi-annual state-wide training sessions for new program directions, policy changes, safety and first aid, and new reporting procedures.

Question: Does the Fish and Wildlife Service loan government traps out through its extension services? If so, how many and how often?

Answer: Occasionally the Service loans traps. These are usually box or cage type traps used to resolve urban nuisance problems in areas where the available manpower is limited. Requests of this nature are limited and highly variable probably involving less than 100 traps annually.

Less Painful Methods

Question: How much is the Service planning to spend in FY 82 to develop less painful methods of capturing animals?

Answer: The Service plans to spend $49,500 in research on modifications of the steel trap and potential use of the leg snare.

Question: How much money was spent last year on this type research?

Answer: The Service spent $59,500 on such research in FY 1980.

Question: How much has been spent to date?

Answer: The Service has spent approximately $141,900 on steel trap modification research and about $45,500 on studies of leg snare.

Question: What progress has been made?

Answer: Research on tranquilizer trap tabs has been conducted using several central nervous system depressants. Field tests have shown considerable reduction in foot damage -- the most effective formulation resulting in a 61 percent reduction. Additional work is needed on this approach. The Service has also developed trap pan tension devices which increase the selectivity of the leg-hold trap. These devices are presently ineffective in wet or muddy soil conditions, and additonal modifications are being tested. In addition, a sheer pin trap pan device has been tested and shows a great deal of promise to increase trap selectivity. Studies of padded traps using adhesive foam rubber have not reduced foot damage. Considerable further research is needed. Some additional steel trap modifications have been tested, none of which reduced foot damage. Research on lethal trap tabs to quickly kill trapped species is underway. Results are thus far inconclusive. To date, tests with a variety of foot snares have been unsuccessful. New approaches to this technology will continue to be investigated.

Aldrich Snare

Question: What has been the Service's experience with the Aldrich snare?

Answer: The Service completed research and incorporated the use of the Aldrich snare for taking bears in 1965. Considerable research has been done on the use of this snare for taking smaller mammals; however, it has not proven to be effective.

Question: How many of this type of trap does the Service use?

Answer: The Service has approximately 500 Aldrich snares with about 25% in use at any one time.

Question: What is the cost differential between the Aldrich snare and the leg-hold trap?

Answer: The improved Aldrich snare costs about $20.00 the bear leghold trap it replaces costs about $150.00.

Question: What cooperative agreements exist between the Service and Canadian government relating to trapping and animal damage control?

Answer: No cooperative agreements exist between the U.S. and Canada relative to trapping and animal damage control.

QUESTIONS SUBMITTED BY THE HONORABLE LES AU COIN

Land and Water Conservation Fund

Question: In your statement at your confirmation hearings before the Energy and Natural Resources Committee on January 7, 1981, you stated that the Bureau of Outdoor Recreation "managed the Land and Water Conservation Fund which was, and is, one of the most effective preservation and conservation programs in America." Can you explain why the Administration's recommendation is to virtually eliminate this program? Why is it being singled out for $700 million in reductions?

Answer: The Administration has not recommended elimination of the Land and Water Conservation Fund, but rather a moratorium in the program which will permit an evaluation of past accomplishments and future direction. It is anticipated that the $45 million requested for FY 1982 will meet the need for emergency land acquisition and a land exchange program for high priority lands on the Federal side of the fund. Although the State side has been reduced to zero, a significant number of States have funding mechanisms in place which can help to meet outdoor recreation needs.

Question: You also stated in your testimony that through your testimony in 1975 before the House Interior Committee you "successfully laid the groundwork for legislation which enlarged the Fund from $300 million to its present level of $900 million." With an even larger backlog on the Federal side of the Fund and greater needs on the State side now than when you testified in 1975, why are you now proposing to basically end this program and divert funds from its originally intended purposes?

Answer: The Administration does not see an end to the Land and Water Conservation Fund at this time. Rather than continuing an active land acquisition program which will increase the Federal presence during these times of economic uncertainty, we must look at our ability to protect what has been acquired and at the alternative methods of preserving those lands that are necessary for outdoor recreation, natural resources, and wildlife purposes.

Although the State side of the Fund is recommended for reduction to zero, a significant number of States have funding mechanisms in place which can help to meet outdoor recreation needs.

Question: In the President's Program for Economic Recovery it states that you propose that "aggressive exchange programs will be initiated to round out the Federal conservation estate." What proof do you have that land exchanges will work? What is their track record? Specifically, how many acres has the Department preserved through land exchanges? How are you going to arrange land exchanges with the hundreds of private landowners within authorized boundaries of many units in the National Park System? For example, where will you find land to exchange with owners along the Appalachian Trail, in the Cuyahoga Valley, the Delaware Water Gap National Recreation Area, the New River Gorge or at Manassas National Battlefield?

Answer: The Department has preserved, through land exchanges, the following acres, by agency:

Agency	Acres
National Park Service	600,000
Fish and Wildlife Service	44,688
Bureau of Land Management	14,950
Subtotal, Dept. of Interior	659,638
Forest Service	8,710,634
Subtotal, Dept. of Agricul.	8,710,634
Total	9,370,272

During the moratorium on the purchase of land, the Department will conduct a thoughtful review of existing park and recreation legislation to determine future land acquisition needs. At this time, all sources of excess Federal land and all exchange authorities have not been explored. Upon completion of this review an exchange policy will be established and owners willing to exchange lands will be negotiated with on a case by case basis.

Question: You are proposing to rely more extensively on State and local efforts to achieve conservation goals. You are also proposing to cut out Federal support for governments. How can State and local governments become more involved when you are ending the State side of the LWCF?

Answer: It should be noted that many States and some local park districts maintain programs which allow them to become more involved in providing for their recreation and natural resource needs. These programs would, for the most part, be expected to continue and thereby moderate the impact that a discontinuation of Federal assistance would have. A description of just a few of these programs are illustrative:

The Michigan Land Trust Fund expends approximately $3 million annually to acquire critical natural areas, specified State forest parcels and park and recreation property near large urban centers. Funding is derived from the sale of, and royalties accrued from, oil and gas leases on State lands.

Idaho authorized up to $600,000 annually through two programs which provide funding to counties to promote and protect waterway improvements and acquire and develop boating areas and to establish bike and snowmobile recreation facilities. Revenues for these programs are derived from a 1% fuel tax and vehicle registration fees.

The State of California provides grants to its political subdivisions for recreation projects under four separate programs. To date the 1974 Park Bond Act has provided $86,343,234; the 1976 Park Bond Act has provided $81,367,586; the Urban Open Space and Recreation Program has provided $68,724,000; and, the Chappe-Z'berg Off-Highway Vehicle Law of

1971 has provided $15,440,891. Funding for these programs has been used for acquisition and development.

The State of New Jersey established its Green Acres Program to provide open space acquisition for recreation and open space purposes across a broad range of land uses. The program has two main objectives: (1) to assist counties and municipalities in New Jersey to obtain local community recreation land; and (2) to enable the State to acquire significant areas for recreation and conservation. The initial bond issues of $60,000,000 in 1961 and $80,000,000 in 1971 were used exclusively for land acquisition. The 1979 and 1978 bond issues of $200,000,000 each have been used for both acquisition and development purposes. The program covers 100% for State projects and provides a 50% match on local and county projects.

The State of North Dakota established a Snowmobile Trail Tax Fund in 1979 which receives four out of every six dollars received by the snowmobile registration fee. These funds are allocated to local snowmobile clubs for trail construction, land leasing, trail grooming equipment purchases, signing of trails and similar purposes.

The Commonwealth of Pennsylvania established the Rural Parks program in 1975 to provide financial aid and technical assistance to the Commonwealth's counties for the construction of basic recreation facilities. The program focuses on communities with populations of under 5,000 and median family incomes below $10,000.

In the State of Nevada, $10 million in State bond funds is dedicated to the acquisition of wildlife habitat, bikepath development, historic preservation, State park acquisition and development and the development of outdoor recreation lands by cities and counties.

The State of Louisiana created a $100 million dollar Trust Fund to disburse income generated by the extraction of oil and gas resources on lands acquired with L&WCF assistance. The Trust Fund, established by the Louisiana legislature in response to the leasing of mineral rights at the Port Hudson State Park, allocates the revenue derived from these activities to recreation acquisition, development and planning and provides for additional disposition of funds for recreation once the anticipated ceiling has been reached. The model of a Trust Fund financed by compatible mineral extraction on 6(f) lands was also used by Livingston Parish, Louisiana to handle similar revenue from an oil lease at the Denham Springs park operated by Recreation District #3. In this case, anticipated revenue will be excess of $500,000.

The Arizona State Lake Improvement Fund, established several years ago, provides between $1 and $1.5 million dollars annually to assist State, County and local applicants in developing boat-related capital improvements such as docks, ramps and reservoirs. The Fund is made up of revenue from a fixed percentage of the State's fuel taxes and user tax for

boat registration.

National Park Restoration and Improvement

Question: Do you agree that a transfer of Land and Water Conservation Fund money to national park restoration and improvement requires an amendment to the Land and Water Conservation Fund Act?

Answer: Yes. The Administration will transmit proposed amendatory legislation to the authorizing committees shortly.

Policy on Urban Parks

Question: Mr. Secretary, do you intend to propose that Congress de-authorize any national parks in urban areas? If so, which national park areas? Are you concerned that such a policy will drastically reduce the ability of our lower income citizens to use and enjoy our national park system?

Answer: There are no areas proposed at this time for de-authorization. To date, no specific criteria have been developed. Further, if and when a review process gets underway, we will consult fully with the Congress, the state and local governments, and the public.

Concessions Policy

Question: What is your opinion about the concessions operations in our national parks? What types of reforms or changes in policy would you recommend?

Answer: Concessions in the national parks are operated under the policies of Public Law 89-249. This act was designed to encourage investment in "appropriate" facilities and provide security of those investments, while allowing the National Park Service the ability to maximize the service to the visitor. There have been breakdowns in the past of the use of this law. However, we believe that proper administration of the law can achieve the desired results. In the past 5 years, we have applied various safeguards which make the law very valid. We have established a performance appraisal system based on industry operation standards; we have put into effect a comprehensive program for rate and price approval; we have developed a standard contract language; we have put into effect a set of contract regulations; and we have prepared and distributed a complete manual on the proper administration of concessions. All of these things together can increase our effectiveness in concessions management.

The law, as it now exists, gives an absolute right of renewal to existing satisfactory concessioners. This renewal right is necessary for continuity of operators and operations. However, in newly authorized areas, we are not always sure of the level of service necessary to meet the needs of the public and the resource. We need the ability to authorize operators on an interim basis without having to assure a right of renewal, particularly in newly authorized areas.

Mr. YATES. Mr. McDade, do you have a question?

Mr. MCDADE. I want to compliment the Secretary and his staff. They have covered a wide range of subjects, as has the Chairman, and I think it has been a very interesting and enlightening day.

Secretary WATT. I have enjoyed the day.

Mr. YATES. This has been a long day. I think it is kind of productive, and I might even use the word constructive, but I don't know whether that would apply to the Union Station as well.

WEDNESDAY, FEBRUARY 25, 1981.

UNITED STATES GEOLOGICAL SURVEY

WITNESSES

DOYLE FREDERICK, ACTING DIRECTOR, U.S. GEOLOGICAL SURVEY
DALE BAJEMA, ASSISTANT DIRECTOR FOR PROGRAMS
ROBERT L. WESSON, ASSISTANT DIRECTOR FOR RESEARCH
HILLARY A. ODEN, ACTING ASSISTANT DIRECTOR FOR RESOURCE PROGRAMS
JAMES F. DEVINE, ASSISTANT DIRECTOR FOR ENGINEERING GEOLOGY
EDMUND J. GRANT, ASSISTANT DIRECTOR FOR ADMINISTRATION
BETTY M. MILLER, ASSISTANT DIRECTOR, EASTERN REGION
PHILIP COHEN, CHIEF HYDROLOGIST
RUPERT SOUTHARD, CHIEF, NATIONAL MAPPING DIVISION
DALLAS PECK, CHIEF GEOLOGIST
DON E. KASH, CHIEF, CONSERVATION DIVISION
GENE THORLEY, CHIEF, OFFICE OF EARTH SCIENCES APPLICATIONS
GEORGE GRYC, CHIEF, OFFICE OF NATIONAL PETROLEUM RESERVE IN ALASKA
WILLIAM BETTENBERG, BUDGET OFFICER, DEPARTMENT OF THE INTERIOR

Mr. DICKS. The committee will come to order.

We have this morning the Department of the Interior, U.S. Geological Survey. We have Mr. Doyle Frederick, Acting Director, U.S. Geological Survey.

We shall insert in the record the biographical sketches of the various witnesses and their statements.

[Statement and biographical sketches follow:]

77-383 O—81——16

STATEMENT OF DOYLE FREDERICK, ACTING DIRECTOR
U.S. GEOLOGICAL SURVEY
FOR THE HOUSE SUBCOMMITTEE ON APPROPRIATIONS
FOR THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

Mr. Chairman and Members of the Committee:

It is a privilege to appear before you today on behalf of the U.S. Geological Survey. The new Administration is presently reviewing and modifying the FY 1982 budget that has been previously submitted to you. That review is still underway and I understand the results will be announced on March 10. We are not yet aware of the final decisions that are being made in that process. However, I am prepared to discuss the U.S. Geological Survey's programs in general, with particular emphasis on two challenging program areas--geologic hazards, or what we call "real-time geology" and our role in the Department of the Interior's energy initiatives specifically, our coal program. I am also prepared to discuss the pending deferral of budget authority for the Exploration of the National Petroleum Reserve in Alaska.

Challenge for Real-Time Geology

Preceded by a week of premonitory earthquake activity, Mt. St. Helens, in southwestern Washington, began to erupt on March 27, 1980. The reawakening of this Cascade volcano from more than a century of slumber focused the National interest on one of the most challenging problems facing the U.S. Geological Survey. Specifically, how do scientists and managers with a geologic time perspective respond to national needs for real-time Earth science information necessary for public decisionmakers to address emergency preparedness? The list of scientific problems ahead for real-time geology in the Survey is immensely challenging. What does the future hold for other potentially explosive volcanoes of the Cascade Range and Alaska? When and where will the next major earthquake strike California? When will the Ogallala aquifer supplying water to the High Plains be exhausted? These challenges are not limited to the prediction of volcanic eruptions, but have wide applicability for trying to forecast the future behavior of the Earth and the processes which shape it--for the prediction of earthquakes, glacial surges or retreats, exhaustion or contamination of ground water supplies, rapid changes in the flow of rivers and streams using measurements relayed via satellite, critical mineral assessment, and the impact of future climactic changes. These are but a few of the real-time geologic problems the Survey is addressing. Responsiveness will require the highest quality of geologic and hydrologic research to measure or estimate both natural and man-made dynamic forces and their ultimate effects on our earth.

However, scientific competence and methodology alone are inadequate to combat the realities of geologic hazards and diminishing resources. The solutions to these problems must be addressed at all legislative and administrative levels--Federal, State, and local. Public officials must be aware of the issues, the scientific data which are in some cases highly inconclusive, and the options available to address the issues effectively. The Survey's planning efforts will reflect more aggressive programmatic involvement in the areas of hazard assessment, prediction, and mitigation, including necessary interagency coordination both within and outside the Survey with other organizations who share responsibility for dealing with real-time geologic phenomena which pose substantial hazards to life and property.

Involvement in the Nation's Energy Program

Continuing increases in world energy prices mandate national initiatives on many fronts to augment use of domestic energy resources and the Survey is proud of its involvement in this important area. For instance, coal use is expanding as a major substitute for oil and gas and is being projected as a major potential source of hydrocarbons for synfuel development. Proven domestic coal reserves are more than ample to support these initiatives. However, coal production will have to almost double current levels if these goals are to be realized. In recognition of the necessity to increase coal production, a new Federal Coal Management Program was established by the Department of the Interior on June 1, 1979, aimed at accelerating leasing and development of Federal and Indian coal lands. This program represents a resumption of competitive leasing which had been under an informal moratorium since 1971. The first successful coal lease sale under the new program took place in January, 1981; all six tracts scheduled for competitive leasing in the Green River-Hams Fork Region of Colorado and Wyoming were sold.

To insure the success of future lease sales, the Survey has initiated efforts to implement efficiencies into its integrated coal program to provide more timely economic, geologic, and water resources information used for leasing decisions and supervision of post-lease mining operations on Federal and Indian lands. These efforts include developing a new more cost-effective drilling methodology, and expanding the capability and public accessibility of the National Coal Resources Data System (NCRDS).

National Petroleum Reserve in Alaska

I am prepared to discuss the pending deferral of budget authority for exploration of the National Petroleum Reserve in Alaska. Of the $105.5 million appropriated for 1981 by the Public Law 96-985, $10.7 million was provided to prepare for a FY 1982 drilling program. The deferral pending before this committee would use this $10.7 million to cover the costs of terminating the Exploration Program after completion of the two wells begun in FY 1980, and the four wells to be drilled in FY 1981. This deferral action is predicated on holding the first competitive lease sale early in FY 1982. This deferral action will permit the orderly termination of the government drilling program in FY 1981 with funds currently appropriated.

Conclusion:

In conclusion, Mr. Chairman, let me say that the U.S. Geological Survey has as its future emphasis an increased responsiveness to the needs of our Nation. Public awareness of the necessity of real-time Earth science information has been galvanized in the recent past by domestic energy shortages, the Mt. St. Helens eruptions, and by localized floods and droughts. These events clearly necessitate a redirection of the Survey's efforts. This new emphasis is exemplified in our geologic hazards program and our reevaluation of the integrated coal program. In addition, the Survey is actively studying methodologies for streamlining its required regulatory functions pertaining to coal and oil and gas resources.

This Nation faces serious challenges in meeting future needs for energy, minerals, and water. We take pride in the Geological Survey's capability to help this Nation meet those needs, now and in the future. The essential challenge facing the Geological Survey management is how to meet today's demands, and at the same time, build a base of knowledge and expertise which can provide the answers to tomorrow's questions--indeed answers to the questions of the next century.

Perhaps the words of our late Director, Bill Pecora, regarding the discovery of natural resources needed by man, best illustrate the Survey's intent--"The pace must be accelerated and no part of the earth can be overlooked."

Mr. Chairman, I again thank you for this opportunity to appear before you today and am now prepared to answer your questions.

Biographical Sketch

Doyle G. Frederick, Acting Director
U.S. Geological Survey, Mail Stop 102
National Center, Reston, Virginia 22092

Educational and Professional Experience

Bethel College, McKenzie, Tennessee, B.S. Mathematics, 1957. University of Cincinnati Graduate School, Dynamical Astronomy 1960-61. Federal Executive Institute, 1974.

As Associate Director of the Geological Survey, from March 1980 to January 1981, he shared fully with the Director in all phases of the broad overall planning, directing, and controlling of the varied scientific and technical programs of the Geological Survey.

Was Associate Chief, National Mapping Division since November 1979. Was responsible for the direction of scientific, technical, and administrative activities of the National Mapping Division in the conduct of the National Mapping Progrm. The program involves: the preparation of a series of general purpose maps of the United States; the preparation, use and dissemination of digital cartographic data; the operation of a National Cartographic Information Center; the participation in surveying and mapping technology; and the assistance of Federal, State, and local groups in the effective use, analysis and display of maps and related data.

From 1957-1965 served as a research and staff officer in the areas of cartography, mathematics and geodesy at the Aeronautical Chart and Information Center, St. Louis, Missouri. Served as a Program Manager in the Mapping Charting and Geodesy Directorate, Department of Defense, from 1965-1971, with responsibilities in the fields of geodesy, gravity, hydrography, airborne electronic and photographic surveys and photogrammetry. During 1972-1973, was the Department of Defense member on the Federal Mapping Task Force which conducted a broad study of civilian mapping, charting, geodesy and surveying activities in the Federal Government to determine how best to use available resources to meet overall national needs. From 1973-1979, served as the Chief, Office of Plans and Program Development, Topographic Division, U.S. Geological Survey. Responsible for the identification of requirements, formulation of plans, development of programs, allocation of funds, and staff management of the program. Also responsible for Federal mapping coordination, international activities and the National Cartographic Information Center.

Extra Curricular Activities

Has prepared and presented speeches and papers on many occasions for various technical societies and meetings relating to surveying and mapping technology programs. Capt. Bethel College Basketball, 1956-1957, Who's Who in American Colleges and Universities, 1957; Suggestion Award, ACIC, 1960; Superior Performance and Cash Award, ACIC, 1960; Outstanding Performance Award, DIA, 1967 and 1970; Meritorious Award/Outstanding, DMA, 1973; Meritorious Service Award, Department of the Interior, 1976; Superior Performance Award, USGS, 1979; Senior Executive Service Bonus Award, USGS, FY 1980.

Biographical Sketch

Hillary A. Oden, Acting Assistant Director for Resource Programs
Office of the Director, U.S. Geological Survey

Born:

Lyons, Kansas

Educational and Professional Experience:

Attended school in Lyons and Sterling, Kansas. He received a Bachelor of Science degree in petroleum engineering in 1956 from the University of Kansas at Lawrence.

Has held a number of responsible positions with the Conservation Division since joining the U.S. Geological Survey in 1956. In 1959 was placed in charge of the District Office in Billings, Montana, supervising lessee drilling and producing operations on public domain, acquired and Indian oil and gas leases. In 1969 was reassigned to the Gulf Coast OCS Regional Office in Metairie, Louisiana, as Senior Staff Engineer responsible for three district operational areas and the Regional Office Unitization Section. Two years later, was reassigned to Division Headquarters in Washington, D.C., as Chief, Offshore Operations Section, in the Branch of Oil and Gas Operations. In 1973 he was appointed Assistant Regional Conservation Manager, Western Region and in 1977 was named the Regional Conservation Manager, Western Region. In May 1978 was named Associate Chief, Conservation Division.

In January 1981 was named by the Director to be Acting Assistant Director for Resource Programs, Office of the Director.

Awards:

Department of the Interior Meritorious Service Award (1972)

Department of the Interior Distinguished Service Award (1979)

Senior Executive Service Meritorious Executive Award and Bonus (1980)

Professional Affiliations:

Member, Society of Petroleum Engineers of the American Institute of Mining, Metallurgical, and Petroleum Engineers

Mr. DICKS. We will ask Mr. Frederick to proceed as he wishes.

Mr. FREDERICK. Thank you, Mr. Chairman.

It is a privilege to appear.

Mr. DICKS. One moment first, please. I will ask unanimous consent to place in the record at this point the three supplemental appropriations budget presentations of today as well.

[Supplemental appropriations requests follow:]

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Appropriation	FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Surveys, Investigations, and Research ----------	$486,392,000	$492,592,000	$+6,200,000

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Surveys, Investigations, and Research
FY 1981

For an additional amount for "Surveys, Investigations, and Research," $6,200,000.

Justification of Program and Performance

Activity: National Mapping, Geography, and Surveys
Subactivity: Map Revision and Orthophotoquads

(Dollar Amounts in Thousands)

		FY 1981 Presently Available	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Orthophotoquads	$	4,890	5,845	+955
	(FTP)	(110)	(116)	(+6)
All other Programs	$	9,650	9,650	...
	(FTP)	(260)	(260)	...
Total Requirements	$	14,540	15,495	+955
	(FTP)	(370)	(376)	(+6)

Orthophotoquads

Authorization: 43 U.S.C. 31(a)

Objectives: To provide scale-accurate, photoimage map products in response to specific, identified requirements of State and Federal agencies such as the Bureau of Indian Affairs, Bureau of Land Management, Soil Conservation Service, U.S. Forest Service, U.S. Customs Service, and the Fish and Wildlife Service.

Base Program: Orthophotoquads are scale-accurate photoimage maps produced directly from aerial photographs. The U.S. Geological Survey prepares and prints orthophotoquads in the 7.5-minute quadrangle format in response to specific requests submitted by many other government agencies. BLM has a requirement for orthophoto products over selected areas in Alaska to support their work under the Alaska Native Claims Settlement Act. Production to support this requirement will continue into FY 1981. The U.S. Customs Service has an immediate need for color orthophotoquads along the Mexican border and long-range plans are for all border coverage between Mexico and Canada. In FY 1980 aerial photography was flown over approximately 800 miles of the border, between El Paso and the Pacific Ocean. Other examples of orthophoto product requirements include the Bureau of Land Management for land and resource management, the Bureau of Indian Affairs for management of Indian lands, the Soil Conservation Service, Department of Agriculture, for soil classification, the Forest Service for land and timber management, the Fish and Wildlife Service for the National Wetlands Inventory. State governments also require these map products to aid in coastal zone programs and local government planning and management activities. Color orthophotoquads are being produced for the State of North Carolina along the coast to assist in their coastal zone and wetlands management programs.

The following workload factors are indicated in the orthophotoquad program:

	1979	1980	1981
Orthophotoquads	3,200	3,200	3,390

Unit cost averages $25 a square mile for the preparation of orthophotoquads. Orthophotoquads in the conterminous U.S. are prepared on a 7.5-minute quadrangle format. Orthophotoquads in Alaska are prepared on a 15-minute quadrangle format and consequently cover approximately four times as much area.

Need for Supplemental:

This increase is requested to provide for the production of orthophoto products to support the Bureau of Land Management's land transfer requirements resulting from the recent Alaska National Interest Lands Conservation Act.

Title IX of the Alaska National Interest Lands Conservation Act (P.L. 96-487), Dec. 2, 1980) contains provisions to expedite the conveyance of public land to Alaska Native organizations and individuals. In transferring these lands, the Bureau of Land Management (BLM) must exclude the acreage of navigable water bodies. Orthophoto products provide the least expensive yet accurate base of information on which water bodies can be identified and measured and on which protraction surveys can be plotted. BLM needs the equivalent of 190 additional orthophotoquads in Alaska each year. Most of this requirement will be met by the production of scaled orthophoto products prepared for BLM's operational use and not necessarily delivered in a publishable format.

Alaska natives are more frequently challenging water and other boundary data. In the Calista Region alone, over 50 native villages will not accept conveyances of land unless the Bureau of Land Management can provide current data such as that shown on orthophoto products. Unless this deficiency is corrected, the Department of the Interior will face an increase in court actions initiated by Alaska natives.

Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Cartographer	GS-4	1	$22,486
Cartographer	GS-9	1	18,585
Cartographer	GS-7	3	45,579
Cartographer	GS-5	1	12,266
Permanent Positions		6	98,916
Less Lapse		-2	-38,916
Permanent Staff Years		4	60,000

Object Classification	Staff Years	Cost
Permanent positions	4	$ 60,000
Positions other than permanent	1	15,000
Total personnel compensation		75,000
Personnel benefits		30,000
Travel and transportation of persons		110,000
Transportation of things		3,000
Other services		577,000
Supplies and materials		100,000
Equipment		60,000
TOTAL		$955,000

Justification of Program and Performance

Activity: National Mapping, Geography, and Surveys
Subactivity: Small-Scale, Intermediate-Scale, and Special Mapping

(Dollar Amounts in Thousands)

		FY 1981 Presently Available	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Small-Scale and other Special Mapping	$	1,590	2,490	+900
	(FTP)	(18)	(30)	(+12)
All other Programs	$	12,593	12,593	...
	(FTP)	(162)	(162)	...
Total Requirements	$	14,183	15,083	+900
	(FTP)	(180)	(192)	(+12)

Small-Scale and Other Special Mapping

Authorization: 43 U.S.C. 31(a)

Objectives: The objectives of the small-scale and other special mapping program are: 1) to prepare a variety of multipurpose base maps at various scales to meet the demands of resources planners and managers, research analysts, and educators for maps that show large geographic areas on a single map; and 2) to prepare special map products to meet unique requirements of Federal and State agencies.

Base Program:

1:250,000-Scale Maps: There are 627 published maps in the series providing complete coverage of the conterminous United States, Hawaii, and Alaska. Activity in this program includes the revision of about 30 maps a year. Program planning is coordinated with the Defense Mapping Agency to support their 1:250,000-scale joint air and ground operations graphic products. Also, the preparation of topographic/bathymetric 1:250,000-scale maps of coastal areas, as a joint mapping effort with the National Ocean Survey of NOAA, provides necessary support for the management of the coastal zone, and the administration of the Outer Continental Shelf (OCS) under the OCS Lands Act Amendment of 1978.

National Park Maps: The Geological Survey in coordination with the National Park Service, prepares new maps of park areas and revises existing maps. These maps are for sale to park visitors and the general public.

U.S. and State Base Maps: These maps are used by the Federal, State, and local agencies, educational institutions, and the general public. Federal and State agencies are pressing for revision of these bases prior to digitizing so they can accurately depict information unique to their programs and needs.

Special Maps: Special map products are produced from existing map bases and information collected from various sources, some of which is provided by the requesting organization. Special maps produced for government programs often meet the need for commercial firms, public utility companies, and the general public.

Request for special map products and services are numerous within any one fiscal year.

The following are workload factors in the Small-Scale and Other Special Mapping subactivity:

	1979	1980	1981
1:250,000-Scale Maps----------	34	30	60
National Park Maps----------	3	3	3
U.S. and State Base Maps----------	4	4	4
Special Maps----------	260	260	260

Need for Supplemental:

This increase will fund the revision of 30 1:250,000-scale topographic maps in Alaska each year. These 30 up-to-date accurate base maps are needed each year to support the administration and management of new and expanded national parks, wildlife refuges, conservation areas, recreation areas, national forests, wild and scenic rivers, and wilderness preservation areas resulting from the enactment of the Alaska National Interest Lands Conservation Act.

The Act requires that within 5 years the Secretary shall develop and transmit to the appropriate Committees of the Congress a Conservation and Management Plan for each of the units of the National Park System. Each plan shall include maps indicating areas of particular importance as to wilderness, natural, historical, wildlife, cultural, archeological, paleontological, geological, recreational, and similar resources and also indicating the areas to be divided for administrative purposes. The Act also requires the Secretary to prepare management plans for the Wildlife Refuge System on a schedule of: 1) not less than five refuges within 3 years; 2) not less than ten refuges within 5 years; and 3) all refuges within 7 years.

Revised 1:250,000-scale topographic maps will provide a necessary planning framework for these Federal requirements while also meeting the important need to inform an interested public on the location and boundaries of these newly designated lands.

Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Cartographer	GS-12	1	$26,951
Cartographer	GS- 9	2	37,170
Cartographer	GS- 7	6	91,158
Cartographer	GS- 5	3	36,798
Permanent Positions		12	192,077
Less Lapse		-5	-92,077
Permanent Staff Years		7	100,000

Object Classification	Staff Years	Cost
Permanent positions	7	$100,000
Positions other than permanent	3	35,000
Total personnel compensation		135,000
Personnel benefits		60,000
Travel and transportation of persons		115,000
Transportation of things		7,000
Other services		493,000
Supplies and materials		50,000
Equipment		40,000
TOTAL		$900,000

Justification of Program and Performance

Activity: Geologic and Mineral Resource Surveys and Mapping

Subactivity: Mineral Resource Surveys

(Dollar Amounts in Thousands)

	FY 1981 Presently Available	FY 1981 Revised Request	FY 1981 Proposed Supplement
Alaska	$ 4,382	8,002	+3,620
	(FTP) (70)	(94)	(24)
All Other Programs	28,858	28,858	---
	(FTP) (469)	(469)	---
Total Requirements	$33,240	36,860	+3,620
	(FTP) (539)	(563)	(24)

Authorization: 43 U.S.C. 31(a)
P.L. 96-487 The Alaska National Interest Lands Conservation Act of 1980

Objectives: To evaluate Alaska's mineral resources, to identify areas where new resources are likely to occur, and to provide systematic mineral resource information for planning the use of Alaska lands and for assessing the Nation's total resource base.

Base Program: The systematic assessment of Alaska's mineral potential is based on currently available geoscience and resource data supplemented by reconnaissance geologic, geochemical, and geophysical mapping and remote sensing interpretations. These data are synthesized into assessments of resource potential including, where the data permit, probabilistic estimates of the numbers of deposits that might occur within a given area and their probable tonnage and grade. The assessments are published as 1:250,000-scale (1 inch equals approximately 4 miles) quadrangle folios that include geologic, geochemical, geophysical, and interpretive mineral resource maps accompanied by a written text. Where more detailed or specific types of information of a specialized nature are needed, geologic and mineral resource maps at larger scales are prepared for specific mineral-bearing regions or of individual deposits.

Under the base program, nineteen folios will have been published or scheduled for publication by the end of FY 1981. Each folio consists of twelve or more maps accompanied by an explanatory text. In FY 1982, 4 additional folios will be completed. Certain of the folios cover more than a single 1:250,000 quadrangle and by the end of FY 1981, twenty-three of the one hundred quadrangles in Alaska with mineral potential will have been completed. There are no new program starts scheduled for either FY 1981 or FY 1982 under the base program.

Need for Supplement: The Alaska National Interest Lands Conservation Act, P.L. 96-487, of December 2, 1980, requires the U.S. Geological Survey to:

1. Accelerate assessments of the oil, gas, coal, and nonfuel mineral potential of all Federal lands in Alaska south of 68° north latitude.

2. Review the wilderness characteristics of all Federal land north of 68° north latitude and east of the Petroleum Reserve which includes an assessment of the mineral and energy resource within 8 years.

3. Prepare an annual report to Congress that includes all mineral data collected by Federal agencies in Alaska.

These requirements of the Alaska Lands Act can only be accomplished by accelerating the AMRAP program by a supplemental appropriation of $3.62 million and 24 positions in FY 1981 and in FY 1982 by a budget increase of $1.03 million. These increases will raise the AMRAP program funding to a level which will enable the U.S. Geological Survey to complete the regional mineral and energy resource assessment of Alaska by the year 2000 by providing necessary funding for two new starts in both FY 1981 and FY 1982. Oil and gas assessments will be accomplished using conventional surficial mapping techniques augmented, if available, by industry-provided seismic data. The selection of the quadrangles to be started in FY 1981 and FY 1982 will be made to ensure that mineral data will be available to promptly consider the wilderness status of lands north of 68° as required by the Act.

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Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Geologist	15	2	$ 95,034
"	14	2	80,790
"	13	4	136,738
Geochemist	13	1	34,184
Geophysicist	13	1	34,184
Chemist	13	1	34,184
Geologist	12	4	114,988
"	11	4	95,944
Geophysicist	11	1	23,986
Geochemist	11	1	23,986
Chemist	11	1	23,986
PST	9	1	19,825
PST	7	1	16,205
Permanent Positions		24	$734,034
Less Lapse		-10	- 300,034
Permanent Staff Years		14	$434,000

Object Classification	Staff Years	Cost
Permanent positions	14	$ 434,000
Positions other than permanent	3	41,000
Total personnel compensation		$ 475,000
Personnel benefits		107,000
Travel and transportation of persons		225,000
Transportation of things		65,000
Communication, utilities and other rents		150,000
Printing and reproduction		50,000
Other services		1,888,000
Supplies and materials		195,000
Equipment		290,000
Grants		175,000
Total		$3,620,000

Justification of Program and Performance

Activity: Conservation of Lands and Minerals

Subactivity: Federal and Indian Lands

		(Dollar Amounts in Thousands) FY 1981 Presently Available	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Oil and Gas Program	$	20,845	21,570	+725
	(FTP)	(415)	(423)	(+8)
All Other Programs	$	18,668	18,668	-
	(FTP)	(422)	(422)	-
Total Requirements	$	39,513	40,238	+725
	(FTP)	(837)	(845)	(+8)

Authorization: 43 U.S.C. 31(a)

Objectives: To classify Federal lands for potential oil and gas values for future leasing and for retention of title to such resources to the Government in cases of proposed land sales or exchange; to evaluate Federal land oil and gas lease tracts offered for sale by competitive bidding; and to supervise operations on Federal and Indian oil and gas leases.

Base Program: The resource evaluation and classification program stems primarily from responsibilities as cited in the Survey's Organic Act of 1879, the Mineral Leasing Act of 1920, as amended, the Acquired Lands Leasing Act of 1947, and the Federal Lands Policy and Management Act of 1976. These responsibilities are accomplished by the collection and analysis of geologic, geophysical, engineering and economic data acquired from Federal lessees through Geological Survey initiative; by the evaluation of Federal lands subject to competitive leasing; and by the classification for surface management agencies of oil and gas potential of Federal lands for retention of mineral rights, future leasing and for proper land use planning.

Responsibilities under the regulatory program include the review and approval, or disapproval, of proposed industry operations relative to exploration and development. These include drilling, production, storage, and measurement and marketing of oil and gas from Federal and Indian lands. Special emphasis is placed: (1) on environmental protection; and (2) conservation of reserves through maximum ultimate recovery of the resources leased.

Need for Supplemental

In passing the Alaska National Interest Lands Conservation Act, the Congress settled numerous long-disputed issues regarding the management of Federal

lands in Alaska. An important collateral mandate which, while equally significant though not as publicly prominant, is the Congress' desire for prompt action by the Executive Branch to expedite programs which would assist in mitigating the Nation's dependence on foreign sources of energy and other minerals. This request for supplemental appropriations will initiate programs to expedite the public decision process regarding the development of the vast natural resources of Alaska.

Several sections of the Act will require the immediate implementation of new program initiatives to generate the required information and analyses. Accordingly, the Geological Survey is requesting $725,000 and 8 full-time permanent positions for the Conservation of Lands and Minerals budget activity to begin programs in FY 1981 which are principally associated with the requirements of Sections 1001, 1002, and 1008, under Title X of the Act.

These sections address several studies of Federal North Slope lands, the development of an oil and gas leasing program, and the conduct of mineral assessments. Following is a brief discussion of the principal considerations within each section which require immediate attention during FY 1981:

Section 1001 Overall Study Program: A portion of this section calls for an assessment of potential oil and gas resources of all lands north of 68° north latitude, excluding NPRA. The overall report is to include recommendations concerning future use and management of oil and gas resources in this area.

The Geological Survey, is to provide technical support to BLM in developing recommendations on the future use and management of Federal lands and in the development of leasing systems. These analyses are necessary to determine whether leasing for oil and gas is warranted, and if so, the scale of leasing activity and the leasing system which is most appropriate. The funds requested will provide a staff capability for conducting these essential analyses.

Section 1002: Arctic National Wildlife Refuge Coastal Plain Resource Assessment: This section mandates the promulgation of guidelines by regulations governing the conduct of exploration activities in the William O. Douglas National Wildlife Refuge.

The deadlines specified in the Act will require that most of the effort regarding the study and promulgation of regulations will occur during FY 1981 and FY 1982 with shifts in emphasis occurring in FY 1983 in direct response to the nature and scale of industry's response to the opportunity to conduct exploration activities.

The Geological Survey's requirements under the Conservation of Lands and Minerals budget activity will be to provide engineering, economic, and infrastructure information and analyses to the study efforts to be conducted by the Fish and Wildlife Service. Also,

the Geological Survey will be required to support the preparation of guidelines and an EIS covering exploration in the Coastal Areas.

While the Act provides for the possible submission of an exploration plan by the U.S. Geological Survey should industry proposals be unacceptable, no funds are requested at this time pending the completion of the program discussed above and the opportunity to call for and review industry proposals. A report on the results of the program is scheduled for 1985.

Section 1008: Oil and Gas Leasing Program for Non-North Slope Federal Lands: The purpose of this section of the Act is that the Secretary of the Interior establish an oil and gas leasing program in areas south of the Brooks Range. To respond to this requirement, the Geological Survey must begin immediately to promulgate regulations governing exploration and development while simultaneously assisting in the determination of areas which are favorable for the recovery of oil and gas based on analysis of geologic information. Following an initial year of studies to be conducted in conjunction with surface management agencies and the native corporations, the Secretary will designate areas favorable for competitive leasing.

The goal of this activity is the implementation of a competitive onshore oil and gas leasing program in one or more of the 23 areas south of the Brooks Range which are currently designated for leasing suitability analysis. Following the Secretary's determinations, the Geological Survey will be required to provide resource and infrastructure information to BLM. The data and information provided by the Survey to the leasing process must be tailored to the unique characteristics of the individual areas and must consider the technologies that industry would employ in the exploration for and development of oil and gas. This requirement is as important in the Survey's efforts to promulgate regulations governing industry activity as it is in the support of BLM's leasing process.

OBJECT CLASS DISTRIBUTION

Position Title	GS Grade	Number	Annual Salary
Supervisory Physical Scientist	14	1	40,395
Supervisory Geologist	13	1	34,148
Petroleum Engineer	13	1	34,148
Geologists	12	2	57,494
Environmental Scientist	12	1	28,747
Petroleum Engineer	12	2	57,494
Permanent Positions		8	252,498
Less Lapse		-4	-100,498
Permanent Staff Years		4	152,000

Object Class	Staff Years	Cost
Permanent positions	4	152,000
Positions other than permanent	3	45,000
Total personnel compensation		197,000
Personnel benefits		90,000
Travel and transportation of persons		75,000
Transportation of things		15,000
Other services		333,000
Supplies and materials		5,000
Equipment		10,000
TOTAL		725,000

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500-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PROGRAM AND FINANCING (Dollars in thousands)

Identification code 14-0804-1-1-306	19 81 [illegible]	19 81 [illegible]	19 81 [illegible]
	Presently Available	Revised Estimate	Proposed Supplemental
Program by activities:			
Direct program:			
1. National mapping, geography and surveys	72,683	74,538	1,855
2. Geologic and mineral resource surveys and mapping	153,415	157,035	3,620
4. Conservation of lands and minerals	114,311	115,036	725
All other activities - No change	145,983	145,983	--
Total, Direct Program	486,392	492,592	6,200
Reimbursable Program	160,424	160,424	--
10.00 Total program costs, funded, obligations	646,816	653,016	6,200
Financing:			
Offsetting collections from:			
11.00 Federal funds	-90,979	-90,979	--
14.00 Non-Federal sources	-69,445	-69,445	--
39.00 Budget authority	486,392	492,592	6,200
40.00 Appropriation	486,537	492,737	6,200
41.00 Transfered to other accounts	-145	-145	--
43.00 Appropriation (adjusted)	486,392	492,592	6,200
Relation of obligations to outlays:			
71.00 Obligations incurred, net	486,392	492,592	6,200
Obligated balance, start of year			
72.40 Appropriation	68,017	68,017	--
72.98 Fund balance	13,387	13,387	--
Obligated balance, end of year			
74.40 Appropriation	-79,409	-80,609	-1,200
74.98 Fund balance	-13,387	-13,387	--
90.00 Outlays	475,000	480,000	5,000

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 14-0804-1-1-306		19 81 actual	19 81 estimate	19 81 estimate
		Presently Available	Revised Estimate	Proposed Supplemental
	Personnel compensation:			
11.1	Permanent positions	195,858	196,627	769
11.3	Positions other than permanent	38,768	38,904	136
11.5	Other personnel compensation	4,948	4,948	--
	Total personnel compensation	239,574	240,479	905
	Personnel benefits:			
12.1	Civilian	24,405	24,692	287
13.0	Benefits for former personnel	20	20	--
21.0	Travel and transportation of personnel	16,925	17,425	525
22.0	Transportation of things	5,201	5,291	90
23.1	Standard level user charges	27,077	27,077	--
23.2	Comm., util., & other rent	22,136	22,286	150
24.0	Printing and reproduction	4,570	4,620	50
25.0	Other services	100,441	103,734	3,268
26.0	Supplies and materials	21,471	21,821	350
31.0	Equipment	21,041	21,441	400
41.0	Grants, subsidies, and contributions	3,416	3,591	175
42.0	Insurance claims and indemnities	115	115	--
99.0	Total obligations	486,392	492,592	6,200

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PERSONNEL SUMMARY

Identification code 14-0804-1-1-306	19 81 actual	19 81 estimate	19 81 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Direct Program			
Total number of permanent positions --	7,974	8,024	50
Total compensable workyears:			
Full-time equivalent employment ----	11,185	11,224	(39)
Full-time equivalent of overtime and holiday hours ----------	289	289	--
Average ES salary ----------	$49,754	$49,754	--
Average GS grade ----------	10.10	10.11	11.44
Average GS salary ----------	$27,622	$27,621	$27,413
Average salary of ungraded positions -	$23,883	$23,883	--

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204-103

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

GRADE	19 81 actual	19 81 estimate	19 81 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Executive Level V	1	1	--
Subtotal	1	1	--
ES-6	1	1	--
ES-5	2	2	--
ES-4	36	36	--
ES-3	3	3	--
ES-2	12	12	--
ES-1	3	3	--
Subtotal	57	57	--
GS-18	--	--	--
GS-17	2	2	--
GS-16	11	11	--
GS/GM-15	503	505	2
GS/GM-14	705	712	7
GS/GM-13	1,196	1,208	12
GS-12	1,425	1,438	13
GS-11	1,390	1,395	5
GS-10	198	198	--
GS-9	1,230	1,234	4
GS-8	267	267	--
GS-7	690	693	3
GS-6	516	517	1
GS-5	687	689	2
GS-4	366	367	1
GS-3	100	100	--
GS-2	19	19	--
GS-1	1	1	--
Subtotal	9,306	9,356	50

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July 1968, Bureau of the Budget
Circular No. A-11, Revised.
306-109

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

	19 81 actual	19 81 estimate	19 81 estimate
Grades established by the Administrator, Agency for International Development: (75 Stat. 450)	Presently Available	Revised Estimate	Proposed Supplemental
FC-13, $50,112	1	1	--
FC-12, $44,547 to $50,112	8	8	--
FC-11, $38,163 to $49,967	8	8	--
FC-10, $31,961 to $41,702	9	9	--
FC-9, $26,676 to $34,925	5	5	--
FC-8, $22,539 to $29,149	7	7	--
Subtotal	38	38	--
Ungraded	276	276	--
Total permanent positions	9,678	9,728	50
Unfilled positions, end of year	-20	-20	--
Total permanent employment, end of year	9,658	9,708	50

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Appropriation	FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Surveys, Investigations, and Research ---------	$486,392,000	$490,392,000	$+4,000,000

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Surveys, Investigations, and Research
FY 1981

For an additional amount for "Surveys, Investigations, and Research," $4,000,000.

Justification of Program and Performance

Activity: Geologic and Mineral Resource Surveys and Mapping

Subactivity: Energy Resource Surveys

(Dollar Amounts in Thousands)

	FY 1981 Appropriation Enacted To Date	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Oil Shale Resource Investigations	$ 760	2,360	1,600
	(FTP) (11)	(27)	(16)
All Other Programs	33,770	33,770	---
	(FTP) (493)	(493)	---
Total Requirements	$34,530	36,130	+1,600
	(FTP) (504)	(520)	(16)

Oil Shale Resource Investigations

Authorization: 43 U.S.C. 31(a)

Objective: To assess the Nation's principal oil shale deposits as an integral part of the Department of Interior oil-shale leasing program and to improve the Nation's estimate of energy supply.

Base Program: The Geological Survey's oil shale resource investigations are limited in scope and conducted primarily in Colorado, Utah, and Wyoming, where the Green River Formation contains the Nation's richest deposits of oil shale.

The geological and resource information that has been produced by these investigations has been useful to the Department of the Interior's prototype oil shale leasing program and has been useful to the oil shale industry. Industry has adopted and incorporated in their detailed oil-shale development plans the terminology, stratigraphic correlations, oil-shale zonation, and other concepts developed by the Geological Survey. Mineralogical studies to determine the amount and distribution of associated sodium-aluminum minerals that potentially are economic byproducts of oil shale processing and of trace elements that may be harmful either to a shale-retorting process or the environment have been useful as well.

Need for Supplement: In order to implement a permanent oil shale leasing program in Utah and in Colorado in FY 1984 and by the end of FY 1985 for Wyoming as a follow on to the Secretary's decision for additional oil shale leasing under the prototype program, it will be necessary to accelerate oil shale activities in FY 1981 to assure that necessary regional data and reports for leasing decisions are available by the end of FY 1984 for Utah and Colorado and by the end of FY 1985 for Wyoming.

Because the extraction and recovery of shale oil involves complex technological and environmental problems, a large resource base is needed to permit the selection of specific deposits for development that will meet established environmental standards and technological requirements of industry.

The checkerboard pattern of Federal and private ownership throughout the oil shale region requires many detailed land evaluations, including resource studies, to protect Federal ownership rights and to facilitate equal value exchanges that allow industry to assemble blocks of land that are logical exploitation units. The program provides basic data for the Department of Energy's effort to foster oil shale technology and development.

Of immediate economic interest is the in-place shale oil resources in shale averaging 30 gallons per ton. The total of these resources is estimated to be in excess of 418 billion barrels. The areas underlain by 30 gallon-per-ton oil shale in Colorado, Utah, and Wyoming can be shown on eight 1:100,000 scale geologic folios. Two in the Uinta Basin, Utah, three in the Piceance Creek, Colorado, two in the Green River Basin, and one in the Washakie Basin, Wyoming. These folios will contain surficial and bedrock geologic maps, resource maps, and tabular data on oil shale geochemical analyses, engineering-geologic information, and economic or deleterious minerals associated with the oil shale.

Regional-scale bedrock geologic maps exist for all these 1/2 x 1° quadrangles; surficial geologic maps exist for the Douglas Pass, Rangely, Glenwood Springs, Seep Ridge, and Vernal quadrangles. Detailed structural and engineering geologic studies are presently in progress in the Piceance Creek Basin (Douglas Pass quadrangle). Climatic constraints to reclamation of mined lands in all the listed areas have been enumerated and mapped. Regional geochemical studies, showing baseline trace-element contents of rocks, soils, plants, and water in all areas are in hand. Resource investigations and geologic mapping are partially completed in the Colorado and Utah areas, and geologic hazards have been mapped in the Colorado areas.

Information still necessary for safe, orderly exploitation of resources includes additional detailed geologic mapping; stratigraphic and mineralogic studies; extensive core drilling, shale oil assays, and mineral and trace element analyses; evaluation of ground-failure hazards; transportation networks, waste disposal problems, and man-induced hazards; thickness and physical properties of overburden; nature and pattern of fractures in rock surrounding the oil shale beds; mineralogical studies to identify useful or potentially harmful minerals; and studies of erosion potential of wind and running water. These subjects will be presented in formats designed so as to be of use to people untrained in geology.

With the present budget and staff, the program will require another 20 years for completion. It is proposed to augment our base so that this can be completed in 5 years. The program will entail initial expansion of the budget by $1.6 million in FY 1981 and an increase of $1.5 million in FY 1982. The first 2-1/2 to 3-1/2 years will constitute a data acquistion phase involving various on-site geologic studies, core drilling, and laboratory analyses. The last 1-1/2 to 2-1/2 years will be used for data synthesis and folio compilation.

Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Geologist	GS-13	2	$ 68,368
Chemist	GS-13	1	34,184
Geologist	GS-12	2	57,494
Chemist	GS-12	1	28,747
Geologist	GS-11	4	95,944
Geochemist	GS-11	1	23,986
Chemist	GS-7	2	32,410
Chemist	GS-5	2	26,168
PST	GS-5	1	13,084
Permanent Positions		16	$380,385
Less Lapse		-8	- 180,385
Permanent Staff Years		8	$200,000

Object Classification	Staff Years	Cost
Permanent positions	8	$ 200,000
Positions other than permanent	1	20,000
Other personnel compensation		1,000
Total personnel compensation		$ 221,000
Personnel benefits		20,000
Travel and transportation of persons		50,000
Transportation of things		25,000
Communication, utilities and other rents		35,000
Printing and reproduction		160,000
Other services		984,000
Supplies and materials		35,000
Equipment		70,000
Total		$1,600,000

Justification of Program and Performance

Activity: Water Resources Investigations
Subactivity: Energy Hydrology

(Dollar Amounts in Thousands)

	FY 1981 Approp. Enacted to date	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Oil Shale Hydrology	$ 2,749	3,749	+1,000
	(FTP) (41)	(46)	(5)
All Other Programs	$ 19,057	19,057	---
	(FTP) (171)	(171)	---
Total Requirements	$ 21,806	22,806	+1,000
	(FTP) (212)	(217)	(+5)

Oil Shale Hydrology

Authorization: 43 U.S.C. 31(a)

Objectives: To help assure the most efficient and environmentally sound development of the Nation's oil shale resources by determining the quality and quantity of the water available and by developing the capability to predict the potential impacts of both surface mining and in-situ mining on water resources.

Base Program: Baseline data on the quantity and quality of surface and ground waters in oil shale areas of Colorado, Utah, and Wyoming are being collected. Studies of the hydrology of oil shale areas are being conducted in the Piceance, Parachute-Roan Creek, Green River, and Uinta Basins. These activities include aquifer tests; the development of a digital model of the ground-water system in proximity to the in-situ retorting test site near Rock Springs, Wyoming; modeling of the aquifer systems in the Piceance Basin; and studies of the behavior of wastes originating from piles of retorted oil shale and their impact on water quality.

Need for Supplemental: Major emphasis on energy independence has focused attention on the extensive oil shale deposits in the structural basins of Colorado and Utah. Administration plans are to produce at least 400,000 barrels of crude oil from these deposits by 1990. Proposed extraction methods involve a combination of surface and subsurface mining and include both surface and in situ retorting of the oil shale. The specific techniques will depend on the location, depth, thickness and oil content of the deposits,

and on water availability for extraction, processing and waste disposal in an environmentally safe manner. Each process will potentially impact the environment, and the degree and seriousness of the impact can be mitigated via appropriate remedial measures based on a thorough scientific understanding of the interaction between the various phases of the environment.

The base program is not adequate to support the Secretary of Interior's decisions for new prototype leases and the planning for permanent oil shale leasing. The increase requested will be used to further the program in two principal areas: (1) make analytical and interpretive studies and conduct research, principally on the geochemistry of waters, to be able to evaluate potential impacts of oil-shale developments on the water environment, and (2) collect data and conduct investigations of surface and ground water occurrence in oil shale areas to determine quantity, quality and availability of water for oil shale production and to model the water system to predict the impacts of water extraction and use on the system.

Specific activities to be accomplished under this supplemental include

1. Expanded assessment of potential environmental impacts.
   - o Studies of organic and inorganic geochemistry of spent shales, both in-situ and surface residuals.
   - o Determine and assess changes in precipitation chemistry.
   - o Improved laboratory techniques, capabilities, and capacity to handle increased support requirements.
2. Assessment of possible ground water supplies available for oil shale development.
   - o Drilling, testing, and modeling of the Douglas Creek aquifer in Utah.
3. Baseline monitoring of hydrologic conditions in potential new lease tract areas in Colorado and Utah.
   - o Surface water quantity, quality, biology and sediment.
   - o Ground water quality and quantity.

Outputs

Results of investigations, data compilations for site specific work, areal appraisals of ground-water systems, and assessments of baseline hydrologic conditions needed for determination of environmental impacts of oil shale development will be reported in basic data, technical, and scientific reports.

Short Title	Number of Reports	Date of Final Products
Hydrology of oil shale areas in Colorado and Utah	2	1984
Organics in oil shale residues	2	1983
Oil shale organics on sediment	1	1984
Soluable organics in waters	1	1984
Organics solute transport	2	1983
Sediment/soil chemistry in oil shale areas	1	1983
Ground-water model, Douglas Creek Aquifer	3	1984
Quality of waters in oil shale areas	3	1984
Basic data reports, Colorado and Utah	2	1984

Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Hydrologist	GS-14	1	$ 40,395
Chemist	GS-13	1	34,184
Hydrologist	GS-13	1	34,184
Hydrologist	GS-12	2	57,494
Permanent Positions		5	166,257
Less Lapse		- 3	-66,257
Permanent Staff Years		2	100,000

Object Classification	Staff Years	Cost
Permanent positions	2	$ 100,000
Positions other than permanent	8	83,000
Total personnel compensation		183,000
Personnel benefits		18,000
Travel and transportion of persons		50,000
Transportation of things		20,000
Standard level user charges		52,000
Communications, utilities, and other rents		30,000
Printing and reproduction		15,000
Other services		535,000
Supplies and materials		12,000
Equipment		85,000
TOTAL		$1,000,000

Justification of Program and Performance

Activity: Conservation of Lands and Minerals

Subactivity: Federal and Indian Lands

		(Dollar Amounts in Thousands) FY 1981 Approp. Enacted to Date	FY 1981 Revised Request	FY 1981 Proposed Supplemental
Other Energy Programs		$ 3,049	4,449	+1,400
	(FTP)	(87)	(103)	(+16)
(Oil Shale)		$ (757)	(2,157)	(+1,400)
	(FTP)	(16)	(32)	(+16)
All Other		$ 36,464	36,464	-
	(FTP)	(750)	(750)	-
Total Requirements		$ 39,513	40,913	+1,400
	(FTP)	(837)	(853)	(+16)

Oil Shale

Authorization: 43 U.S.C. 31(a)

Objective: To evaluate energy resources on oil shale tracts offered for competitive leasing; to determine overall economic feasibility and acceptability of industry proposals to develop oil shale on Federal lands; and to supervise industry operations on oil shale leases to simultaneously ensure conservation of the resource, environmental protection, and fair return to the public.

Base Program: The classification and resource evaluation program for oil shale is accomplished by developing geologic, engineering, and economic information from data submitted by the lessees, acquired through field examination, or obtained from other sources. Such information assists the Bureau of Land Management in selecting tracts on Federal lands for lease and is needed by the Geological Survey for determining the fair market value of tracts offered for lease by competitive bidding and the feasibility and acceptability of industry proposals to develop oil shale on Federal lands.

The Geological Survey has the responsibility to supervise operations on oil shale leases. This responsibility currently includes engineering, environmental, and economic studies of operations on the existing prototype oil shale leases as required by the lease terms; review and approval of all industry plans to ensure that operational safety and environmental protection standards are adequate; inspection of all operations to ensure that safety and environmental standards are met; actions to ensure that sufficient data are being collected by operators to validate findings for the various technologies employed under the prototype program; accounting for production, collection of all royalties and audit of royalty accounts; and determining allowable bonus offset credits.

The Geological Survey oil shale program consists of the supervision of industry operations on existing prototype oil shale leases in Colorado and Utah and is prepared to expand to provide engineering and management support for any future oil shale leasing programs. The present oil shale program consists almost entirely of the regulation and supervision of industry oil shale development operations on Federal lease Tracts C-a and C-b. The future workload of the Geological Survey will be dictated by industry activity, potential oil shale development, and the Secretary's leasing program. The number of industry submissions and actions is expected to increase dramatically as the existing leases are developed for commercialization by the mid-1980's and as new leasing and development initiatives are set in motion.

Need for Supplemental: Federal lands in Colorado, Utah, and Wyoming contain about 80 percent of the Nation's over 600 billion barrels of recoverable shale oil. Accordingly, oil shale development represents a key element in the Nation's synfuel program. Since the goal of the National Energy Plan is to achieve shale oil production of 400,000 barrels a day by 1990, development activity on Federal lands is expected to increase dramatically. Production of shale oil from Tract C-a has occurred during 1980 on a test scale amounting to 2,000 bbls. while production from Tract C-b is expected in 1984. Tracts C-a and C-b are expected to reach 75,000 bbl/day by 1985 and as much as 135,000 to 200,000 bbl/day by 1990.

In response to the National needs to accelerate the development of a synthetic fuels industry, the Department of the Interior announced on May 27, 1980, that the current prototype leasing program would be expanded by leasing up to four additional tracts, while planning would also begin for a permanent oil shale leasing program. As a result of the decision, the Geological Survey will need an additional $1.4 million to implement the expanded oil shale program including land classification, evaluation of development proposals, and regulation of operations.

Development of a new permanent program to be initiated during FY 1981 will include:

1. a review of the Prototype Program;
2. an extensive program of consultation with the affected States and local governments, industry, the environmental community, and other interested members of the public;
3. consideration of a full range of leasing alternatives;
4. compliance with the National Environmental Policy Act of 1969, including support in the preparation of a programmatic environmental impact statement;
5. a major emphasis on production and maximum resource recovery balanced against environmental concerns;

The proposal related to the expansion of the leasing program is formulated on the assumptions that all basic data required to support planning, NEPA compliance and tract delineation and evaluation in FY 1981 and FY 1982 will be available from industry or other sources.

The Geological Survey will conduct activities in FY 1981 to support planning and NEPA-compliance activities by BLM and to delineate tracts for the additional prototype leases scheduled for sale in FY 1983. Within the research, development, test and evaluation framework of the leasing program, each industry proposal will need to be reviewed from a "total systems" approach which considers:

- the physical characteristics of the resource base, the expected yield from employing a given technology, and the range of environmental impacts that would derive from a given system at various scales of operation.

- the extent to which the new program actually tests new technologies rather than extrapolations from previous experiments.

- the implications of planned and ongoing experiments on the design of the permanent leasing program to include the definition of objectives, planning, NEPA compliance, conduct of leasing and development of regulations and procedures governing resource recovery, and fair market return to the public.

Accordingly, the Geological Survey will place considerable emphasis during FY 1981 on the assessment of technological proposals and lease sites which will ultimately contribute to the implementation of the leasing program.

The constantly changing national and international outlook for liquid hydrocarbons requires that an expanded leasing program be developed and put in place within the next two years. Failure to immediately initiate development of a permanent program including additional prototype leasing poses the distinct risk that an emergency situation in the future would require the quick development and implementation of a poorly designed, emergency leasing program without adequate safeguards.

Object Class Distribution

The object class detail for the increase is:

Position Title	GS Grade	Number	Annual Salary
Expanded Leasing			
Technical Assessment Chief	14	1	$ 37,871
Chemical Engineer	13	1	32,048
Mining Engineer	13	3	96,144
Geologist	13	2	64,096
Mineral Economist	13	1	32,048
Hydrologist	13	1	32,048
Geologist	12	2	53,902
Mining Engineer	12	2	53,902
Industrial Engineer	12	1	26,951
Secretary	5	1	12,266
Clerk	4	1	10,963
Permanent Positions		16	$452,239
Less Lapse		- 7	-171,239
Permanent Staff Years		9	$281,000

Object Classification	Staff Years	Cost
Permanent positions	9	$ 281,000
Personnel benefits		26,000
Travel and transportation of persons		136,000
Transportation of things		6,000
Standard level user charges		46,000
Communication, utilities and other rents		62,000
Printing and reproduction		18,000
Other Services		772,000
Supplies and materials		13,000
Equipment		40,000
TOTAL		$ 1,400,000

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PROGRAM AND FINANCING (Dollars in thousands)

Identification code 14-0804-1-1-306	19 81 actual	19 81 estimate	19 81 estimate
		Presently Available	Revised Estimate	Proposed Supplemental
Program by activities:				
Direct program:				
2. Geologic and mineral resource surveys and mapping		153,415	155,015	1,600
3. Water resources investigations		111,892	112,892	1,000
4. Conservation of lands and minerals		114,311	115,711	1,400
All other activities - No change		106,774	106,774	-- 1
Total, Direct Program		486,392	490,392	4,000
Reimbursable Program		160,424	160,424	--
10.00 Total program costs, funded, obligations		646,816	650,816	4,000
Financing:				
Offsetting collections from:				
11.00 Federal funds		-90,979	-90,979	--
14.00 Non-Federal sources		-69,445	-69,445	--
39.00 Budget authority		486,392	490,392	4,000
40.00 Appropriation		486,537	490,537	4,000
41.00 Transferred to other accounts		-145	-145	--
43.00 Appropriation (adjusted)		486,392	490,392	4,000
Relation of obligations to outlays:				
71.00 Obligations incurred, net		486,392	490,392	4,000
Obligated balance, start of year				
72.40 Appropriation		68,017	--	--
72.98 Fund balance		13,387	--	--
Obligated balance, end of year				
74.40 Appropriation		-79,409	-80,696	-1,287
74.98 Fund balance		-13,387	-13,387	--
90.00 Outlays		475,000	477,713	2,713

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 14-0804-1-1-306		19 81 actual	19 81 estimate	19 81 estimate
			Presently Available	Revised Estimate	Proposed Supplemental
	Personnel compensation:			
11.1	Permanent positions	195,858	196,439	581
11.3	Positions other than permanent	38,768	38,871	103
11.5	Other personnel compensation	4,948	4,949	1
	Total personnel compensation	239,574	240,259	685
	Personnel benefits:			
12.1	Civilian	24,405	24,469	64
13.0	Benefits for former personnel	20	20	--
21.0	Travel & transportation of persons	16,925	17,161	236
22.0	Transportation of things	5,201	5,252	51
23.1	Standard level user charges	27,077	27,175	98
23.2	Comm., util., & other rent	22,136	22,263	127
24.0	Printing and reproduction	4,570	4,763	193
25.0	Other services	100,441	102,732	2,291
26.0	Supplies and materials	21,471	21,531	60
31.0	Equipment	21,041	21,236	195
41.0	Grants, subsidies, & contributions	3,416	3,416	--
42.0	Insurance claims & indemnities	115	115	--
99.00	Total obligations	486,392	490,392	4,000

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PERSONNEL SUMMARY

Identification code 14-0804-1-1-306	19 81 actual	19 81 estimate	19 81 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Direct Program			
Total number of permanent positions ---	7,924	8,011	37
Total compensable workyears:			
Full-time equivalent employment ---	11,185	11,213	28
Full-time equivalent of overtime and holiday hours ----------	289	289	--
Average ES salary ----------	$49,754	$49,754	--
Average GS grade ----------	10.10	10.11	11.31
Average GS salary ----------	$27,622	$27,619	$27,542
Average salary of ungraded positions --	$23,883	$23,883	--

STANDARD FORM 306
July 1968, Bureau of the Budget
Circular No. A-11, Revised.
306-103

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

GRADE	1981 actual	1981 estimate	1981 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Executive Level V	1	1	--
Subtotal	1	1	--
ES-6	1	1	--
ES-5	2	2	--
ES-4	36	36	--
ES-3	3	3	--
ES-2	12	12	--
ES-1	3	3	--
Subtotal	57	57	--
GS-18	--	--	--
GS-17	2	2	--
GS-16	11	11	--
GS/GM-15	503	503	--
GS/GM-14	705	707	2
GS/GM-13	1,196	1,209	13
GS-12	1,425	1,435	10
GS-11	1,390	1,395	5
GS-10	198	198	--
GS-9	1,230	1,230	--
GS-8	267	267	--
GS-7	690	692	2
GS-6	516	516	--
GS-5	687	691	4
GS-4	366	367	1
GS-3	100	100	--
GS-2	19	19	--
GS-1	1	1	--
Subtotal	9,306	9,343	37

STANDARD FORM 306
July 1968, Bureau of the Budget
Circular No. A-11, Revised.
306-103

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

	19 81 actual	19 81 estimate	19 81 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Grades established by the Administrator, Agency for International Development: (75 Stat. 450)			
FC-13, $50,112	1	1	--
FC-12, $44,547 to $50,112	8	8	--
FC-11, $38,163 to $49,967	8	8	--
FC-10, $31,961 to $41,702	9	9	--
FC-9, $26,676 to $34,925	5	5	--
FC-8, $22,539 to $29,149	7	7	--
Subtotal	38	38	--
Ungraded	276	276	--
Total permanent positions	9,678	9,715	37
Unfilled positions, end of year	-20	-20	--
Total permanent employment, end of year	9,658	9,695	37

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Appropriation	FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Surveys, Investigations, and Research ---------	$486,392,000	$493,792,000	$+7,400,000

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Surveys, Investigations, and Research
FY 1981

For an additional amount for "Surveys, Investigations, and Research," $7,400,000.

Justification of Program and Performance

Activity: Conservation of Lands and Minerals
Subactivity: Outer Continental Shelf Lands

(Dollars in thousands)

		FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Royalty Management - OCS	$	1,606	3,406	1,800
	(FTP)	(62)	(74)	(12)
Other OCS Programs	$	68,285	68,285	...
	(FTP)	(899)	(889)	(...)
Total Requirements	$	69,891	71,691	1,800
	(FTP)	(961)	(973)	(12)

Activity: Conservation of Lands and Minerals
Subactivity: Federal and Indian Lands

(Dollars in thousands)

		FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Royalty Management - Federal and Indian Lands	$	4,907	10,507	5,600
	(FTP)	(165)	(193)	(28)
Other Federal and Indian Lands Program	$	39,658	39,658	...
	(FTP)	(837)	(837)	(...)
Total Requirements	$	44,565	50,165	5,600
	(FTP)	(1,002)	(1,030)	(28)

Total Royalty Management Program

(Dollars in thousands)

		FY 1981 Presently Available	FY 1981 Revised Estimate	FY 1981 Proposed Supplemental
Royalty Management - OCS	$	1,606	3,406	1,800
	(FTP)	(62)	(74)	(12)
Royalty Management - Federal and Indian Lands	$	4,907	10,507	5,600
	(FTP)	(165)	(193)	(28)
Total Requirements	$	6,513	13,913	7,400
	(FTP)	(227)	(267)	(40)

The Royalty Management function is being addressed as a single request in this supplemental since both subactivities (OCS and Federal and Indian Lands) will be supported by the same program. The functions of royalty management are more efficiently carried out as an integrated program, as opposed to the duplication of effort involved if there were two separate royalty management programs. During the FY 1982 budget process, royalty management funds will be requested as a separate Royalty Management Subactivity within the Conservation of Lands and Minerals Activity.

Royalty Management Program

Authorization: 43 U.S.C. 31(a)

Objectives: The Royalty Management Program is responsible for the collection of rentals and royalties due the Federal Government and Indians in exchange for energy and mineral production on Federal and Indian Lands.

Specifically, this responsibility requires that the Geological Survey:

- ensure that product value and sale by private operators are accurately measured and reported to ensure that a fair value is received for resources removed from Federal and Indian leases;
- determine amounts due the Federal Government and Indian tribes and provide effective control over revenue collections and refunds; and
- ensure that revenue collections are deposited in the U.S. Treasury or paid to Indian lessors at the earliest possible time through the maintenance of a royalty management system and associated accounting and reporting systems.

The objectives associated with this proposed budget supplemental are to implement an improved Royalty Management Program during a 2-year transition period (FY 1981 and 1982) while simultaneously operating portions of the current system.

Base Program: The Geological Survey's present royalty accounting program is managed in 14 Conservation Division accounting offices which are, in part, centrally serviced by a computer-based accounting system. The current program is fundamentally a continuation of practices which prevailed:

- o when the numbers of active leases on Federal and Indian lands, including the OCS, and royalty collections were relatively modest compared with current and projected activity;

- o prior to the employment of complex pricing mechanisms and tax incentives to encourage production on existing leases; and

- o prior to the use of alternative bidding systems for competitive leasing to ensure that competitive advantage would not accrue to segments within the energy industry.

The Survey collected over $1.9 billion of royalty in 1979, while as much as $2.5 billion may accrue to the Federal Government and Indians in 1980. A chart showing the substantial growth in royalty collections between 1974 and 1978 is attached as appendix 1; collections in 1978 segregated by land type and mineral are shown in appendix 2. A state-by-state analysis of royalty collections in 1978 is shown in appendix 3, and the distribution of producing Federal and Indian leases in 1978 is shown in appendix 4.

However, by current standards, the program can be described as a labor-intensive operation which, in view of rapidly changing requirements, is inflexible and lacking resources to respond to new responsibilities. The current collection strategy relies extensively on monthly account reconciliations which tend to be time-consuming, labor-intensive, and costly procedures which frequently accomplish little more than the correction of human error. Attempts to more fully automate the existing program through "ad hoc" improvements to the computer-based accounting system have not been as successful as desired due to the diverse accounting practices which have been employed by both Geological Survey offices and lessees in the past and because of the difficulty associated with modifying the current ADP system.

In recent years, funds have been appropriated for new requirements associated with the passage of the Natural Gas Policy Act and the OCS Lands Act Amendments. These allowances would have been adequate as increments to a system which was designed at the outset to deal with the demands imposed by the laws. However, new requirements such as the cumulative impact of additional responsibilities, associated with such matters as increasing Indian awareness of royalty collection, cannot be addressed by the existing program without further substantial increases in staff or fundamental revision of the present system. The Survey proposes to follow the latter course of action to enable the introduction of efficiencies through redesign and thereby reduce the personnel intensiveness of operations. It should be noted, however, that some additional personnel resources will be required owing to growth in workload, but that in

the absence of steps to improve productivity via automation, these requirements would be much larger. Further, the prospect for increased OCS and onshore oil,gas, and coal competitive leasing and the potential further use of alternative bidding systems (including net profit sharing) require that immediate action be taken before the existing program is further inundated with additional workload and complexity.

Need for Supplemental: The Survey's Royalty Management Program has been reviewed on several recent occasions with similar findings that extraordinary managerial action should be taken to revise the program and modernize the accounting system. The most recent, GAO Report FGMSD-79-24, dated April 13, 1979, dealt exhaustively with the program and proposed both short- and long-range solutions to the shortcomings and deficiencies. Even prior to the GAO report, the Chief, Conservation Division of the Geological Survey, convened an Improved Royalty Accounting System Task Force:

> "To recommend options to Division management for an accounting system that will be effective and efficient and less manpower intensive in carrying out responsibilities for the collection of monies due the Federal Government and various Indian tribes for rentals, advanced rentals, compensatory royalty oil and royalty on production from all leasable minerals, both OCS and onshore. The task force will rank the options and submit its recommendations to Division Headquarters."

Two of the principal recommendations of the task force, which were presented on December 15, 1978, were to:

- "Cease trying to maintain the present system and switch to a modified 'IRS-type' system," and
- "Recognize royalty accounting as a Division program of equal importance with oil and gas operations, mining operations, etc."

In reviewing the alternative accounting and royalty management options that could be applied to the program, the Improved Royalty Accounting System Task Force selected an approach which would apply the philosophy of the Internal Revenue Service's Differential System (DIF). As an example, in the case of oil and gas--the largest current source of royalty revenue--under the improved Royalty Management System, the numerous lessors will utilize a new form for calculating the royalty they owe from each producing zone of the well. This information will be entered into a formal accounting system supported by interactive computer capability. Like the Internal Revenue Service's Differential System, the Improved Royalty Management System assumes that what is paid is owed, but the computer system will maintain surveillance on all reporting and paying and assist in reconciliations. Accounts with the largest deviations from expected royalty payments can be audited as can those large volume accounts where small errors in price can result in large discrepencies in payment. Royalty accounts with the largest deviation or potential for additional collections will be audited both internally and in the field.

The findings of the task force were also considered in the reorganization study of the Conservation Division, as well as in the subsequent activities of the Improved Royalty Management Program Work Group to design and implement the revised system. The reorganization of the Conservation Division, which elevated the Chief of the Royalty Management function to Deputy Division Chief status paralleling the officers responsible for onshore and offshore programs, was approved in 1979.

The work group's proposed revised program was presented on March 11 and 12, 1980, to a review panel consisting of representatives from the Office of the Inspector General, Department of the Interior; industry, including Mobil Oil; the State of Louisiana; the Ute Indian Tribal Council; the Bureau of Indian Affairs, and the Bureau of Land Management. A separate review was also conducted by the Arthur Anderson and Company accounting firm. The consensus among these representatives supported the proposed Royalty Management System.

Under the Improved Royalty Management Program, the Geological Survey proposes:

1. To periodically perform both internal reviews and analysis and onsite review and analysis as a means of assuring that the lessees/operators are complying with the governing laws and regulations and that the Federal Government and Indians are receiving their proper share of royalties from all production from Federal and Indian lands.

2. To centralize royalty accounting offices to establish better efficiency and effectiveness of operations and provide management more effective control over this important function. Maps showing the current and proposed geographic distribution of offices are attached as appendices 5 and 6.

3. To redesign the accounting system to create timely, reliable records and establish positive control over the royalty reporting and paying process.

4. To expand computer utilization to enable the Survey to better handle very large amounts of data in an efficient way, and reduce the present reliance on manual operations.

5. To establish audit control on sample leases. At the present time, only a limited number of lease accounts are audited each year.

6. To upgrade the quality and expand the quantity of the accounting staff to a point commensurate with the need to assure that the new royalty accounting system can be maintained properly.

A summary chart comparing the old system to the expected benefits of the new system is attached as appendix 7.

The reason for all of these actions is to improve the efficiency and effectiveness of royalty management so that the Survey can collect royalty which is not now being collected. The Survey estimates that up to 10 percent in additional royalty may be collected when these changes are completed and the new system is fully operational. This estimate is based on GAO report FGMSD-79-24 which stated:

> "Although we could not determine the exact amount of additional royalty the Geological Survey could collect by performing account reconciliations and audits, the examples disclosed during our review, plus the experience of a large private oil and gas company which audits oil and gas leases, led us to believe that additional royalties can be collected. Audits conducted by the private oil and gas company show that royalties due are normally understated by 7 to 10 percent."

Accomplishing these actions will require reassignment of existing personnel, the detailed design, development, and procurement of computer support activities, and development of training modules. Establishment of the Improved Royalty Management System will require additional personnel--both in the transition period and when the Improved Royalty Management System is fully operational. The existing Royalty Accounting System is not doing an adequate job of collecting Federal and Indian royalties, and it is incapable of keeping up with the ever - increasing workload. The 40 full-time permanent positions needed to implement the Improved Royalty Management System would not be sufficient to achieve adequate royalty collection if they were put into the old system. Better management, new and improved procedures, greater use of computers, and upgrading the quality of the accounting staff--these are the elements of the Improved Royalty Management System.

Following is a detailed analysis of total program costs in FY 1981 associated with the implementation of the new accounting system, centralization of offices, and maintenance of the existing system while the new system is being implemented.

FY 1981 Cost Estimates

Personnel: (Fourth quarter estimates correspond to personnel ceiling for FY 1981)

	($ in thousands)
Current Royalty Accounting Staff (32K/annum)	
1st quarter - 178 employees	$1,520
2nd quarter - 151 employees	1,304
3rd quarter - 151 employees	1,304
4th quarter - 93 employees	744
	4,872
Severance pay - 30 employees @ $12K	360
Current Staff Total	5,232
Improved Royalty Management Staff	
1st quarter - 29 employees @ $9K	261
2nd quarter - 107 employees @ $8,750	936
3rd quarter - 154 employees @ $8,500	1,309
4th quarter - 174 employees @ $8,500	1,479
	3,985
Moving cost - 100 employees @ $8K	800
TOTAL Personnel Costs	10,017

	($ in thousands)
Contracts	
ADP Services (software development)	$ 740
AID Number assignment	1,040
Management Services	275
Lease History File	100
Computer Resources	
Computer Operations	680
Supplies	108
Terminals	101
	889
Office Equipment Rentals	95
Maintenance of Metairie Office	757
Total FY 1981 Requirements	13,913
Total FY 1981 Base	6,513
TOTAL, Amendment	7,400

The above actions will establish a royalty management program which is estimated to produce the following outputs which are representative of the scale of improvement expected on the royalty management effort:

(Cumulative totals in thousands)

Projected Workload	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
Number of documents processed	28	56	90	105	107	110
Number of Class II exceptions processed (DIF)	173	338	585	600	700	750
Number of accounts reconciled	3.6	8.4	9	9	9.1	9.2
Number of checks deposited/ refunds processed	6.6	22	30	31	32	33
Number of contractor entered line items	780	2,250	3,900	6,000	7,000	7,500
Number of lease abstracted/ lease masters prepared	18.2	15.5	16	16.5	17	17.5
Number of royalty in-kind contracts maintained	--	.34	.5	.5	.5	.5
Number of production value determinations	--	20	140	30	30	31
Number of Class I exception reviews conducted (DIF)	4.3	3	6	6	7	7.5

The proposed supplemental is predicated upon the following assumptions regarding current legislation which pertains to Geological Survey's royalty management responsibilities:

1. With regard to Federal payment of the Windfall Profits Tax on royalty oil:

   A. That section 101 of the the Crude Oil Windfall Profit Tax Act of 1980, new section 4994 (a)(1)(A) of chapter 45 of subtitle D of the Internal Revenue Code of 1954 will be amended to read as follows:

      "(A) such interest is held by the Federal Government or a State or political subdivision thereof or by an agency or instrumentality of the Federal Government or a State or political subdivision thereof, and as to the State or political subdivision." or,

   B. New section 4996(a)(1)(A) of chapter 45 of subtitle D of the Internal Revenue Code of 1954 will be amended to read as follows:

      "(A) In general - Except as provided in subparagraph (B) the term producer means the holder of the economic interest with respect to the crude oil except the Federal Government or any agency or instrumentality thereof." or,

   C. That the Geological Survey's responsibility to pay the Windfall Profit Tax will be otherwise removed or limited to a 20 percent direct payment of the tax by the Federal Government.

Further assumptions are made regarding the requirement for Survey's certification of tertiary recovery projects on State and private lands that new section 4993 (d)(5)(A)(ii) will be amended to read:

> "(ii) if the Governor of such State does not submit such written notification within 180 days after the date of the enactment of the Crude Oil Windfall Profit Tax Act of 1980, an appropriate Federal Agency such as the Department of Energy will make such certification until such time as the Governor submits such notification.".

Should this proposal be approved, it is the Survey's intent to fund this integrated program through a single budgetary subactivity within the Conservation of Lands and Minerals Activity. Implementation of the Improved Royalty Management Program will require a supplemental to the FY 1981 President's Budget of $7,400,000 and 40 FTP positions.

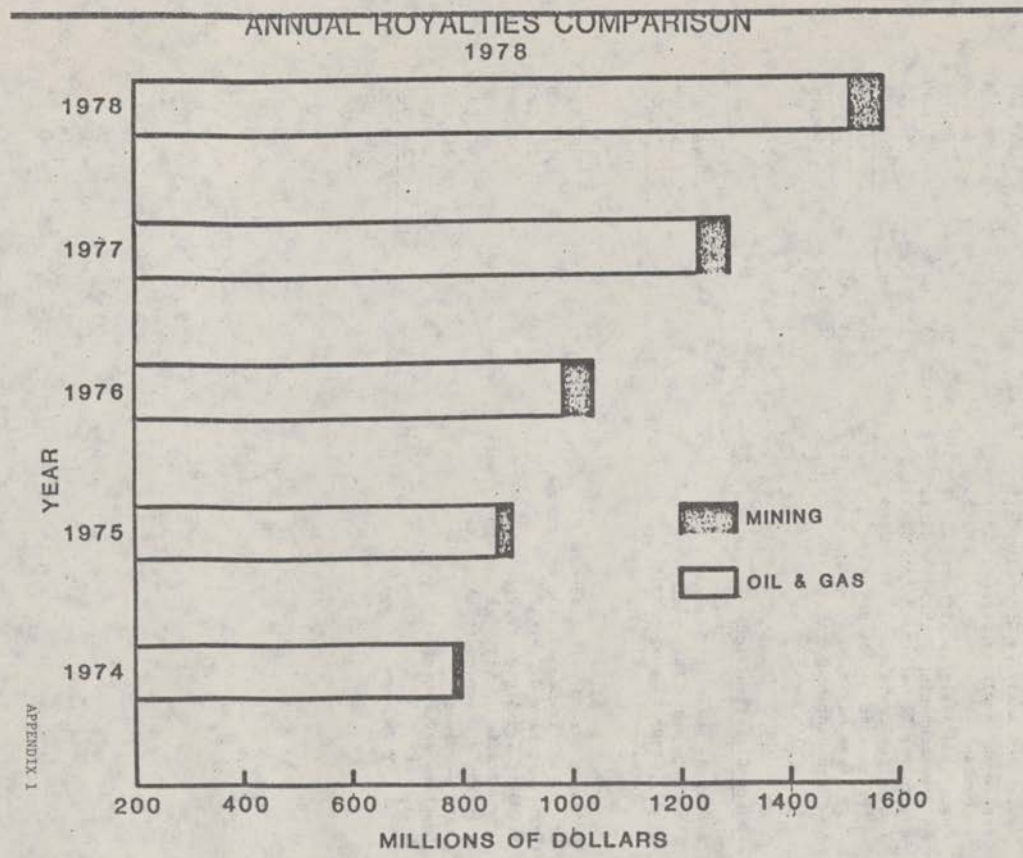
Funds for the improved Royalty Accounting System were not requested as part of the FY 1981 President's Budget because the Task Force studying the system (acting on GAO recommendations) was still in the process of developing proposals for the new system, at the time the FY 1981 Budget was being prepared and presented. The Survey feels that because of potential savings that will result from implementation of the new system (an estimated $170 to $300 million a year in increased collection), that the system change should be funded as soon as possible. Waiting until FY 1982 to fund this system change would result in a large net loss to the Federal Government.

Object Class Distribution

The object class detail for the increase is as follows:

Position Title	GS Grade	Number	Annual Salary
Review and Analysis Officer	GS-15	3	$133,641
Review and Analysis Officer	GS-14	5	189,355
Accountant	GS-13	3	96,144
Review and Analysis Officer	GS-12	10	269,510
Senior Accounting Tech.	GS-11	5	112,430
Accounting Technician	GS-9	5	92,925
Accounting Technician	GS-8	9	151,434
Permanent Positions		40	1,045,439
Less Lapse		-3	-81,439
Permanent Man Years		37	964,000

Object Classification		Cost
Permanent positions		964,000
Positions other than permanent	12	156,000
Other personnel compensation		50,000
Total personnel compensation		1,170,000
Personnel Benefits		382,000
Benefits for former personnel		360,000
Travel and transportation of persons		1,110,000
Transportation of things		260,000
Standard level user charges		300,000
Communication, utilities and other rents		40,000
Printing and reproduction		10,000
Other services		3,268,000
Supplies and materials		250,000
Equipment		250,000
TOTAL		7,400,000


ANNUAL ROYALTIES COMPARISON
1978
1978
1977
1976
1975
1974
YEAR
MINING
OIL & GAS
200
400
600
800
1000
1200
1400
1600
MILLIONS OF DOLLARS
APPENDIX 1

APPENDIX 1

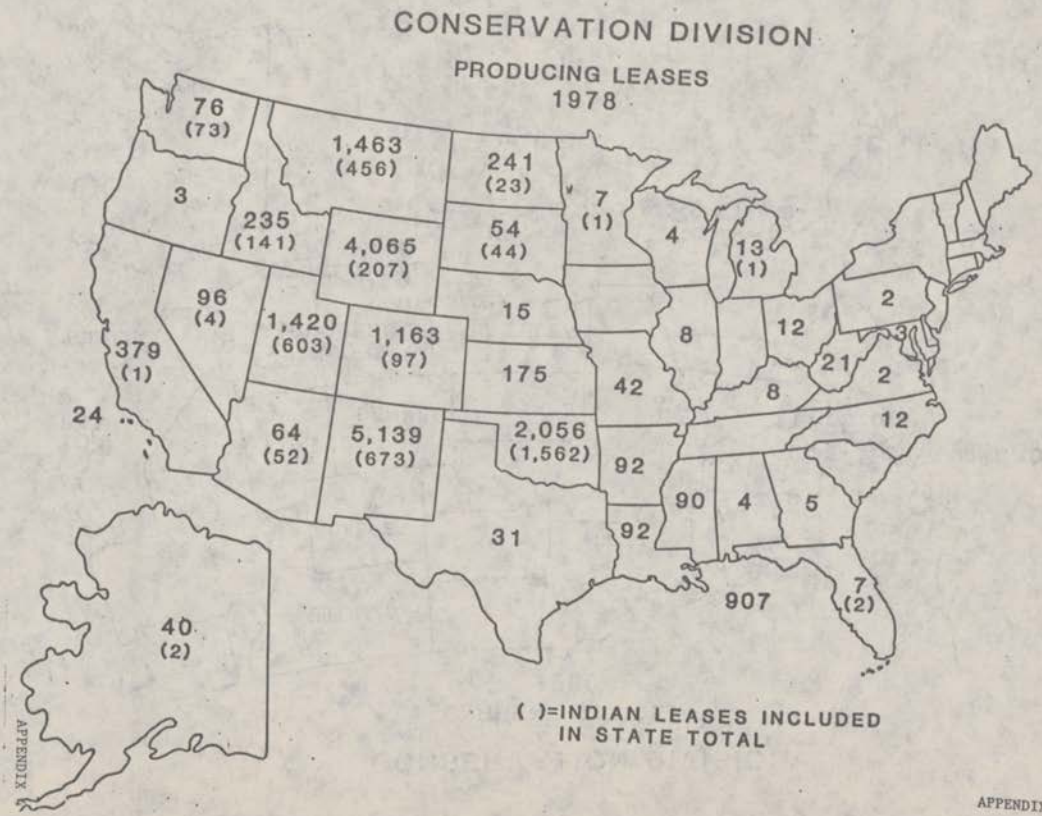
ROYALTIES BY LAND TYPE & MINERAL
1978

Mineral	Land category			
	Federal	Indian	O.C.S.	Total
Oil----------	$184	$33	$ 466	$ 683
Gas----------	127	18	684	829
Coal----------	14	6	---	20
Uranium----------	---	11	---	11
Sodium----------	11	--	---	11
Potash----------	7	--	---	7
Lead----------	6	--	---	6
Phosphate--------	3	1	---	4
Copper----------	---	2	---	2
Total---------	$352	$71	$1,150	$1,573

(Dollars in millions)


CONSERVATION DIVISION
ROYALTY REVENUE
DOLLARS IN MILLIONS
(BY LEASE LOCATION)
1978
14
4
3
133
2
25
30
1
6
12
24
5
147
14
1
1
5
1,138
7

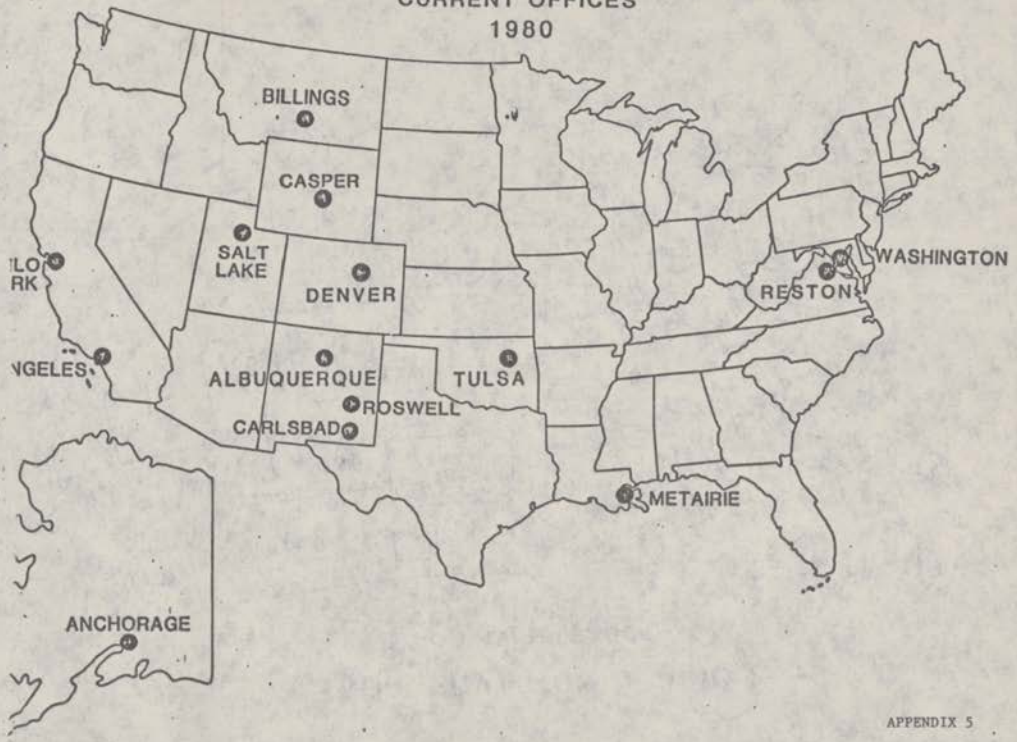
APPENDIX 3


CONSERVATION DIVISION
PRODUCING LEASES
1978
76
(73)
3
1,463
(456)
241
(23)
7
(1)
4
13
(1)
235
(141)
4,065
(207)
54
(44)
96
(4)
1,420
(603)
1,163
(97)
15
8
12
2
379
(1)
175
42
21
2
24
64
(52)
5,139
(673)
2,056
(1,562)
92
8
12
90
4
5
31
92
907
7
(2)
40
(2)
( )=INDIAN LEASES INCLUDED
IN STATE TOTAL

APPENDIX 4

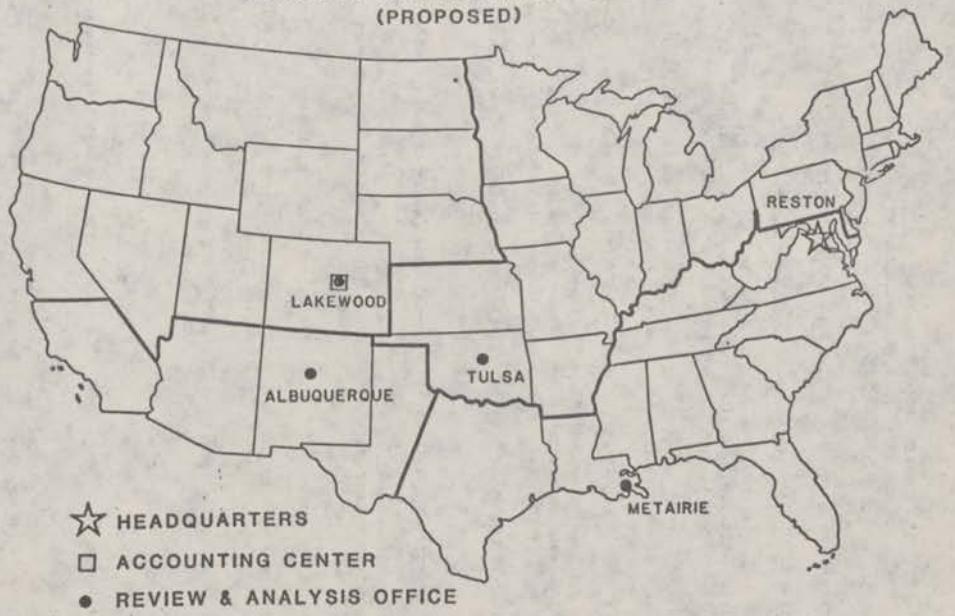
CONSERVATION DIVISION

CURRENT OFFICES
1980



APPENDIX 5

CONSERVATION DIVISION
ROYALTY MANAGEMENT OFFICES
(PROPOSED)



APPENDIX 6

APPENDIX 6

BASIC DIFFERENCES BETWEEN
EXISTING ROYALTY ACCOUNTING SYSTEM (RAS)
AND PROPOSED IMPROVED ROYALTY MANAGEMENT
SYSTEM (IRMS)

Existing System (RAS)	Proposed System (IRMS)
ORGANIZATIONAL ALIGNMENT	ORGANIZATIONAL ALIGNMENT
Accounting located under Regional Manager, Oil and Gas or Mining Supervisor. Limited emphasis on Royalty Management.	Accounting located under Deputy Division Chief for Royalty Management. Extensive emphasis on Royalty Management.
Fourteen offices collecting royalty, doing accounting, and processing reports.	One office collecting royalty, doing accounting, and processing reports.
Informal, indirect overall control.	Close overall control-central policy.
Provincialism and autonomy. Narrow scope-limited knowledge and concern for total program.	One accounting center, one system, one accounting staff. Knowledge of and concern for the overall accounting process.
Emphasis on clerical personnel.	Emphasis on professional personnel.
SYSTEM	SYSTEM
Overall philosphy of putting all incoming transactions on the books-sorting out later-limited funds and personnel to reconcile. System drives management.	Overall philosophy of collecting what is submitted-assuming what is paid is what is owed subject to audit-analyzing data, examining lease records. Management control system.
Informal memo accounting system.	Formal accounting system.
Manual surveillance on reporting and paying.	Computer surveillance on reporting and paying.
Inadequate reporting and paying instructions for lessees.	Special emphasis on reporting and paying instructions.
Low computer emphasis.	High emphasis on interactive computer capability.
Manual reconciliations.	Computer surveillance and assistance on reconciliations.
System that cannot be managed without adding a large number of personnel as workload increases	System that can be managed as workload increases without exponential additions of personnel.

APPENDIX 7

Existing System (RAS)	Proposed System (IRMS)
Accounting transactions which automatically create balances will be reviewed before posting.	Automatically computes and posts Royalty Accounting transactions into lease accounts.
Several different parties allowed to report sales and pay royalty.	Party who pays the royalty must submit the sales/remittance report.
Does not provide cost of accounting functions.	Budget and cost accounting data will be kept on every accounting function. Ability to examine costs versus benefits.
Weak internal controls.	Strong internal controls.
Undersirable cash management features-holding checks, returning checks.	Immediate deposit of checks-encourages wire transfer payments.
Lengthens correction period on input data which fails edit.	Immediate correction on input data which fails edit.
Difficulty locating documents during processing period.	Document numbers assigned for immediate location at any time.

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PROGRAM AND FINANCING (Dollars in thousands)

Identification code 14-0804-1-1-306	19 81 actual	19 81 estimate	19 81 estimate
Program by activities:	Presently Available	Revised Estimate	Proposed Supplemental
Direct program:			
4. Conservation of lands and minerals	114,311	121,711	7,400
All other activities - No change	372,081	372,081	--
Total, Direct Program	486,392	493,792	7,400
Reimbursable Program	160,424	160,424	--
10.00 Total program costs, funded, obligations	646,816	654,216	7,400
Financing:			
Offsetting collections from:			
11.00 Federal funds	-90,979	-90,979	--
14.00 Non-Federal sources	-69,445	-69,445	--
39.00 Budget authority	486,392	493,792	7,400
40.00 Appropriation	486,537	493,937	7,400
41.00 Transferred to other accounts	-145	-145	--
43.00 Appropriation (adjusted)	486,392	493,792	7,400
Relation of obligations to outlays:			
71.00 Obligations incurred, net	486,392	493,792	7,400
Obligated balance, start of year			
72.40 Appropriation	68,017	68,017	--
72.98 Fund balance	13,387	13,387	--
Obligated balance, end of year			
74.40 Appropriation	-79,409	-80,174	-765
74.98 Fund balance	-13,387	-13,387	--
90.00 Outlays	475,000	481,635	6,635

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
900-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 14-0804-1-1-306		19 81 actual	19 81 estimate	19 81 estimate
		Presently Available	Revised Estimate	Proposed Supplemental
	Personnel compensation:			
11.1	Permanent positions	195,858	196,822	964
11.3	Positions other than permanent	38,768	38,924	156
11.5	Other personnel compensation	4,948	4,998	50
	Total personnel compensation	239,574	240,744	1,170
	Personnel benefits:			
12.1	Civilian	24,405	24,787	382
13.0	Benefits for former personnel	20	380	360
21.0	Travel and transportation of persons	16,925	18,035	1,110
22.0	Transportation of things	5,201	5,461	260
23.1	Standard level user charges	27,077	27,377	300
23.2	Comm., util., & other rent	22,136	22,176	40
24.0	Printing and reproduction	4,570	4,580	10
25.0	Other services	100,441	103,709	3,268
26.0	Supplies and materials	21,471	21,721	250
31.0	Equipment	21,041	21,291	250
41.0	Grants, subsidies, & contributions	3,416	3,416	--
42.0	Insurance claims and indemnities	115	115	--
99.0	Total obligations	486,392	493,792	7,400

STANDARD FORM 300
July 1954, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
PERSONNEL SUMMARY

Identification code 14-0804-1-1-306	FY 81 actual	FY 81 estimate	FY 81 estimate
	Presently Available	Revised Estimate	Proposed Supplemental
Direct Program			
Total number of permanent positions ---	7,974	8,014	40
Total compensable workyears:			
Full-time equivalent employment -----	11,185	11,234	49
Full-time equivalent of overtime and holiday hours ----------	289	291	2
Average ES salary ----------	$49,754	$49,754	--
Average GS grade ----------	10.10	10.11	11.15
Average GS salary ----------	$27,622	$27,606	$26,136
Average salary of ungraded positions --	$23,883	$23,883	--

STANDARD FORM 306
July 1968, Bureau of the Budget
Circular No. A-11, Revised.
306-103

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

GRADE	19 81 ~~actual~~ Presently Available	19 81 ~~estimate~~ Revised Estimate	1981 ~~estimate~~ Proposed Supplemental
Executive Level V	1	1	--
Subtotal	1	1	--
ES-6	1	1	--
ES-5	2	2	--
ES-4	36	36	--
ES-3	3	3	--
ES-2	12	12	--
ES-1	3	3	--
Subtotal	57	57	--
GS-18	--	--	--
GS-17	2	2	--
GS-16	11	11	--
GS/GM-15	503	506	3
GS/GM-14	705	710	5
GS/GM-13	1,196	1,199	3
GS-12	1,425	1,435	10
GS-11	1,390	1,395	5
GS-10	198	198	--
GS-9	1,230	1,235	5
GS-8	267	276	9
GS-7	690	690	--
GS-6	516	516	--
GS-5	687	687	--
GS-4	366	366	--
GS-3	100	100	--
GS-2	19	19	--
GS-1	1	1	--
Subtotal	9,306	9,346	40

STANDARD FORM 306
July 1965, Bureau of the Budget
Circular No. A-11, Revised.
206-103

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

	19 81 actual	19 81 estimate	19 81 estimate
Grades established by the Administrator, Agency for International Development: (75 Stat. 450)	Presently Available	Revised Estimate	Proposed Supplemental
FC-13, $50,112	1	1	--
FC-12, $44,547 to $50,112	8	8	--
FC-11, $38,163 to $49,967	8	8	--
FC-10, $31,961 to $41,702	9	9	--
FC-9, $26,676 to $34,925	5	5	--
FC-8, $22,539 to $29,149	7	7	--
Subtotal	38	38	--
Ungraded	276	276	--
Total permanent positions	9,678	9,718	40
Unfilled positions, end of year	-20	-20	--
Total permanent employment, end of year	9,658	9,698	40

Mr. DICKS. Please proceed.

STATEMENT OF ACTING DIRECTOR FREDERICK

Mr. FREDERICK. Mr. Chairman and gentlemen, it is a privilege to appear before you today on behalf of the Geological Survey. With your permission I would like to submit for the record an opening statement and proceed with just a few brief remarks about the survey programs and activities.

Mr. DICKS. Your statement has been inserted.

Mr. FREDERICK. The first comment I would like to make has to do with the selection of the Director of the Geological Survey. The Secretary of the Interior has decided to use a traditional method for identifying highly qualified candidates and has asked the National Academy of Sciences to put together a list of highly qualified earth scientists he can consider for selection as the Director of the Geological Survey.

That activity is in motion at the moment and, as we understand it, the Academy will present to the Secretary of the Interior a list of names about the first of March. Subsequently, the Secretary will make the selection and hopefully we will have a new Director on board sometime fairly soon.

The criteria that the Academy is using is based on recognized scientific expertise and managerial skills. We are looking forward to the completion of that process and an identification of a Director. Probably it will be on the order of a month or perhaps six weeks before we can see a new Director on board.

In the meantime I am Acting Director and permanently the Associate Director of the Geological Survey.

INTRODUCTION OF WITNESSES

Mr. Chairman, we have with us at the table Mr. Dale Bajema, Assistant Director for Programs, and Mr. Bill Bettenberg, the Budget Officer from the Department of the Interior.

Mr. DICKS. We know Mr. Bettenberg very well.

Mr. FREDERICK. We also have division chiefs and assistant directors from the Geological Survey. With your permission I will introduce those as they are called on to testify. They are prepared to talk about specific issues as they come up.

As you know, the budget which you have before you is under review at the moment by the new administration. We do not yet know what the final decisions will be. As a matter of fact, probably all of the requested increases are under scrutiny. As I said, we do not finally know what the outcome will be. Therefore, we cannot discuss the final Reagan budget in detail with you. We will be happy to tell you as much as we can and comment as much as we know on the entire process.

NATIONAL PETROLEUM RESERVE IN ALASKA

Mr. DICKS. Why don't we go into substantive areas so we can make this a worthwhile hearing.

Please bring the committee up to date on the status of the current drilling on the National Petroleum Reserve in Alaska.

When are the wells expected to be completed? Have there been any results in this year's drilling?

Mr. FREDERICK. Mr. Chairman, the status as far as the drilling there is concerned is that we are involved in the completion of two wells which began in the last fiscal year. We are also involved in the drilling of four additional wells which began this fiscal year. We hope to be able to complete those six wells by May of this year.

When those six wells are finished that will complete a total of 28 wells on the National Petroleum Reserve. We are also involved in the completion of seismic data this year and at the finish of this year's program we will have about 13,000 line miles of seismic information.

PRIVATE DRILLING PROGRAM ON NPRA

Mr. DICKS. What is the status of the preparation for a private drilling program?

Mr. FREDERICK. We have congressional approval for a private leasing program. The Department of the Interior, namely the Geological Survey and the Bureau of Land Management, have laid out a calendar of events that need to take place between now and when a lease sale can occur.

By the way, we have an objective of December 1981 for our first lease sale.

Mr. DICKS. I understand that in December the Department issued a call for nominations and comments for tract selection. The deadline for submission of nominations was February 6. What has been the response?

Mr. FREDERICK. The response has been gratifying, Mr. Chairman. We have responses from about 16 private firms. There were nominations for almost all of the reserves. Subsequently the Bureau of Land Management and the Geological Survey have analyzed the information and have identified about six million acres in which there is a great deal of interest.

We hope to lease somewhere on the order of two million acres within the next year.

Mr. DICKS. My colleague from Pennsylvania will be interested to know we are on the National Petroleum Reserve in Alaska.

Mr. MCDADE. I am fully aware of that. Thank you, Norm.

Mr. DICKS. I wanted to point out that the work initiative of the gentleman from Pennsylvania is being carried forward on a schedule that will be 10 months ahead of the schedule which Congress had asked for, and they intend to go ahead with private leasing in December of this year, which I think is an important step in meeting the objectives of the committee in last year's process.

Mr. MCDADE. That is why we took the buildup and got the legislation written. I agree with you. That was our objective, to get it out to the private sector and not lose a lot of time.

Mr. DICKS. That is right.

Mr. FREDERICK. We think we are in pretty good shape.

I have at the table Mr. George Gryc, the Director of the program, and Jim Devine, Assistant Director for Engineering Geology. They will be able to help with the detailed questions.

Mr. DICKS. When would you expect industry drilling to begin?

Mr. FREDERICK. We cannot for sure tell you when industry will actually begin to drill. It is possible that drilling could begin in 1982 with a one-year's drilling gap. I think final determination of when industry will actually go into the reserve for drilling purposes depends on the priorities on the NPR versus the other Alaskan North Slope activities.

Mr. DICKS. Would it not be true, though, that the first two million acres to be leased would be the high priority and the best possible areas for seismic work and exploration? Is that a fair statement?

Mr. FREDERICK. We intend to identify the most promising areas as part of the initial leasing.

Mr. DICKS. Would it not also be true that once we have made that decision to go forward with leasing that it would be almost inconsistent to have a government drilling program continue? I know the drilling program you have under way now would end in May.

Mr. FREDERICK. Yes. That is correct.

Mr. DICKS. Would it not be almost inconsistent to have both of those going on? Here you have these high priority areas which are leased. Obviously you would be drilling in the lower priority areas, so in spending some $130 million of taxpayer money we would probably not be drilling in the areas where we have much of a find.

Mr. FREDERICK. There would be some conflict in a private leasing operation and continued government drilling activity.

There might be some possibilities outside the high priority areas we might like to look into and which might provide some additional information. We don't think that would measurably help the leasing program or ultimately help industry leasing that much. It would add some additional information.

Mr. DICKS. It would be nice if we had all the money in the world.

Mr. FREDERICK. That is right.

Mr. DICKS. If we do not we have to prioritize and make the tough decisions this Administration is calling on Congress to make, it probably would be one of those things that would have to be passed over in your budget priorities. Is that a fair statement?

Mr. FREDERICK. That is the conclusion of the Department of the Interior and the Administration.

Mr. DICKS. What would be the cost to drill additional wells in fiscal year 1982 if we should make that decision? On what assumptions are those costs based?

Mr. FREDERICK. On the order of $115 to $125 million. George can give you the details.

Mr. DICKS. How many wells?

Mr. FREDERICK. Four wells.

Mr. DICKS. Mr. Gryc?

Dr. GRYC. We have not selected four additional sites at this point.

Mr. DICKS. As I understand it, the Administration currently is recommending a deferral of some $11 million in order to close out the drilling program in fiscal year 1981 instead of pre-positioning supplies for fiscal year 1982; is that correct?

Dr. GRYC. That is correct.

Mr. DICKS. That is because you now have this program?

Mr. FREDERICK. Yes. That is correct.

Mr. DICKS. You are moving ahead. You will lease. The best areas will be out and available to the private sector. I think that has been the objective of this committee.

Therefore, you are moving on the schedule we agreed to last year, in fact, accelerating it by 10 months. Is that correct?

Mr. FREDERICK. Yes. That is correct.

Mr. DICKS. Does the deferral fit into that overall program?

Mr. FREDERICK. We believe it does. The most important thing, as Congressman McDade mentioned when he came in, is that we now have authority for a private leasing program and we have underway an accelerated effort.

Mr. DICKS. I would say my colleague from Pennsylvania is perhaps more responsible for that than almost anyone else I can think of in Congress. He should be commended. It will save us a lot of money to get this into the private sector.

If Congress decided to agree with the deferral would these funds be sufficient to cover closeout costs of the drilling program?

Mr. FREDERICK. Yes. That is correct.

Dr. GRYC. Yes. If the decision were made early enough so we can plan the demobilization in this fiscal year, then that fund would be adequate.

The total additional cost is about $12 million and $10.7 million would go a long way toward that.

Mr. DICKS. That is money we have already appropriated?

Dr. GRYC. Yes. That is correct.

Mr. DICKS. If we went ahead with a drilling program in 1982, what would we have to come up with then for closeout costs beyond the cost of the four wells we are talking about?

Dr. GRYC. Again, it would depend on timing. If the program were defined as a one-year program so we could plan our drilling and demobilization in that fiscal year, then perhaps another $10 or $15 million would be required to completely demobilize the program.

Mr. DICKS. It will be about $10 million whether we do it this year or next year?

Dr. GRYC. Yes. That is correct.

CONTINUING COSTS ON RESERVE

Mr. DICKS. What continuing costs will there be on the reserve for the government once the drilling program is eliminated?

Mr. FREDERICK. Mr. Chairman, our responsibilities beyond the drilling program have to do with the Barrow drilling operation. We have a commitment to provide gas to the village of Barrow and consequently operate the gas field and the delivery system to provide gas to the villagers.

Right now our estimated expenditures in fiscal year 1981 are on the order of $2.6 million.

Mr. DICKS. I think it is important for the record to show a little bit of the history.

How did this occur? Under what statutory authority are we committed to make these expenditures?

Can you give us just a brief history of this?

Mr. FREDERICK. If I may ask Mr. Gryc to provide that. He has the details.

Mr. DICKS. Mr. Gryc, would you provide this information?

PETROLEUM PRODUCTION ACT

Dr. GRYC. The field actually was discovered back in 1949 and originally the gas was used to supply the Navy camp. We were authorized then, the government was authorized then, to sell to the village. We started delivering gas to the village in 1964, I believe. We have been supplying gas to the village since that time.

Public Law 94-258, the Petroleum Production Act, stipulates that the Secretary of the Interior will continue to supply gas to the village of Barrow and surrounding government facilities at a fair and equitable rate.

Mr. DICKS. What is that fair and equitable rate?

Dr. GRYC. 32.4 cents per thousand cubic feet (MCF).

Mr. DICKS. What is the cost to the government to procure the gas?

Dr. GRYC. We produce about a billion cubic feet a year and the current cost was $2.6 million, so that gives you $2.60.

Mr. DICKS. The fair and reasonable rate is how much less than the regular price, $2.60 minus .32 is 2.28.

Dr. GRYC. That is right.

Mr. DICKS. I would say that is very fair and very reasonable and very equitable.

Mr. BETTENBERG. The $2.60 discussed is strictly operating cost. That includes no capital investment for the tens of millions that have gone into the field now and potential future tens of millions of dollars that would have to go in to maintain this field over a long period of time.

Mr. FREDERICK. It also assumes we are able to count on the Navy a great deal and work with them. Once that lab is closed down——

NAVY ARCTIC RESEARCH LAB

Mr. DICKS. When is the close down of the Navy Arctic Research Lab?

Mr. FREDERICK. That will be operated by the Navy through this fiscal year.

Mr. DEVINE. In a closeout mode until January 1 of 1982, after which it will be in a caretaker condition.

Mr. FREDERICK. You may recall that Congress asked that a study of the operation of the Navy Arctic Research Lab be undertaken. The Department of the Interior is getting itself in position to go ahead with that study. A study will look at the operation of the lab and determine whether or not the government ought to continue the operation.

The Navy has made a decision to close down their activities there.

Mr. DICKS. Is the Interior Department going to take over their activities?

Mr. FREDERICK. Study has not been completed, sir. We are not sure what the Department intends to do.

Mr. DICKS. Is one of the viable operations under consideration the Interior Department taking over the operation?

Mr. FREDERICK. The Geological Survey would not take over the operation of the laboratory. There may be other activities in Interi-

or which would suggest it be continued at a moderate level. We just don't know yet.

Mr. BETTENBERG. That has not been addressed at the Departmental level in this Administration. In the previous Administration it was covered at the Departmental level and there was a decision to let the facility be abandoned.

Mr. DICKS. What happens then? How will the Eskimos receive their gas once this research lab has gone cold?

Mr. FREDERICK. We are obligated to continue the operations.

Mr. DICKS. At USGS?

Mr. FREDERICK. Yes, specifically USGS is obligated to supplying gas to the natives. What we would have to do is to operate either part of the facility or find a different facility from which to operate.

We expect the cost in that case to be substantially higher.

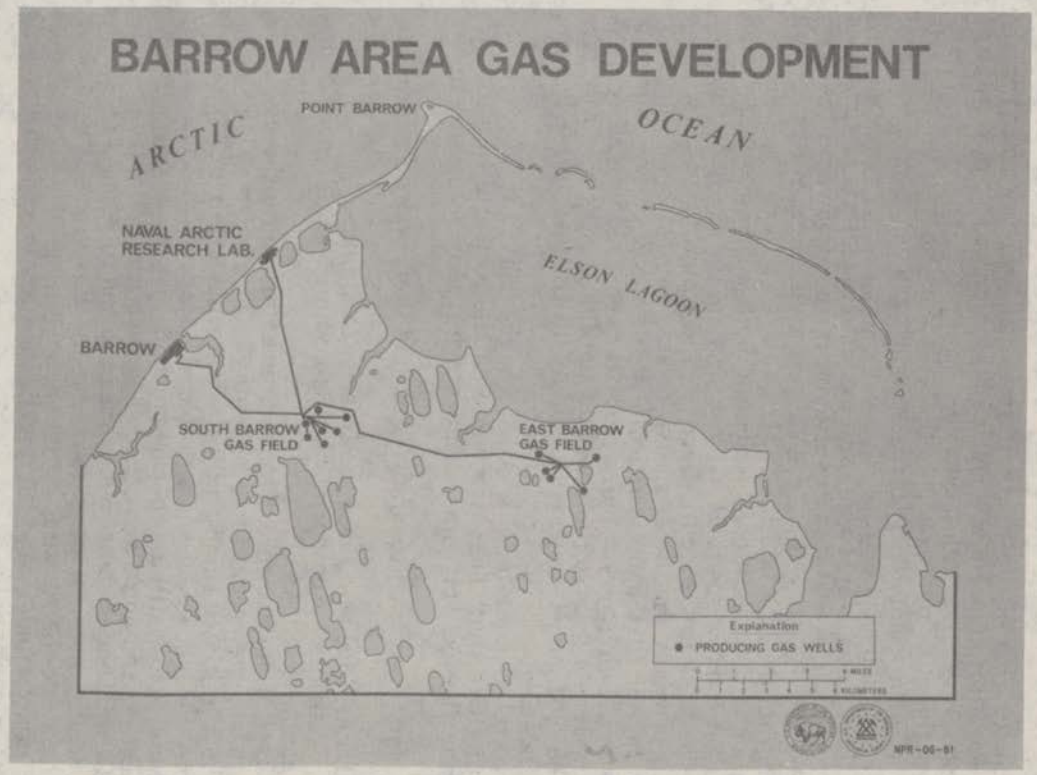
Mr. DICKS. Or change the law?

Mr. FREDERICK. Yes, sir. As long as we find a way to do it.

Mr. DICKS. I see a map. It is useful.

George, tell us a little about this.

[The information follows:]



This chart displays the current status of development of gas wells in the Barrow area and the location of producing gas wells from the South Barrow and East Barrow Gas Fields.

SOUTH BARROW GAS FIELD

Dr. GRYC. This is the South Barrow gas field discovered many years ago. It originally had about 25 billion cubic feet of reserve of which about half has been produced.

The problem is not so much that there is no further reserve. However, we also can deliver only so much gas per day, so we have a problem of deliverability.

The Navy, then, stepped out and explored a geologic feature here which has had several closures around it and discovered the East Barrow gas field. They had drilled two wells here. We picked up this program the first of June 1977.

We then drilled additional wells and built a pipeline and a road to the East Barrow gas field. We can now supply gas from the East Barrow as well as the South Barrow field which takes care of the problem probably for the next five or six years with no difficulty.

However, at that point, particularly inasmuch as the village of Barrow is growing very rapidly, we will have a deliverability problem as well as a reserve problem and additional resources will have to be found if gas is supposed to supply all the energy for Barrow.

Mr. DICKS. How is the price determined?

Dr. GRYC. Originally it was set by the Navy at 72 cents, or something like that. That was based on the cost of lifting the gas, producing the gas only, and it did not include the capital investments.

The Navy then tried to change that and there was a Congressional hearing.

Mr. DICKS. I believe it was the Interior Committee.

Mr. FREDERICK. Appropriations Subcommittee? I am not sure which committee it was.

Dr. GRYC. I am not sure. The natives entered into the discussion and got the price reduced to 32.4 cents.

We have initiated some studies to see what a fair and equitable rate may be but we are not prepared to approach that yet. We don't want to lose still another 50 percent.

Mr. DICKS. You don't want it down to 16 cents.

Dr. GRYC. That is right. We deliver the gas to what is called the "Y", one line goes to the village and the Barrow utilities take it from there and distribute it in the village.

Mr. DICKS. I understand the pipeline system itself is rather antiquated and out of date.

Dr. GRYC. The main pipelines to the village and to the laboratory are in pretty good shape. The distribution system within the village is in pretty poor shape. It was built out of bits and pieces that were readily available originally.

It is now being totally revised. BIA has that responsibility.

Mr. DICKS. This committee provided resources for the tribe to improve the condition of the pipe.

Dr. GRYC. That work is going on right now.

Mr. DICKS. What is the long-term prospect for this? Is this something we will be involved in for a long period of time? Is that the outlook?

Mr. FREDERICK. Unless we can get congressional relief, sir, I think so.

Mr. DICKS. Who would provide the gas? Nobody else is there.

Mr. FREDERICK. I suppose there are options to turn it over to the State of Alaska or to some local organization.

Mr. DICKS. Who bought it?

Mr. FREDERICK. I am not sure it would be an attractive proposition for the State of Alaska or for the natives.

Mr. BETTENBERG. There was an initiative under way in the last administration which will have to be reviewed and potentially will begin again in this administration to make a settlement on the gas production system which involves passing mineral rights in the area to the village beyond simply those oil and gas rights they are using effectively now through the Geological Survey.

Mr. DICKS. Is there any interest on the part of the Eskimos?

Mr. BETTENBERG. Quite a bit.

Mr. FREDERICK. Some, yes, sir.

Mr. BETTENBERG. It reached a stage of discussions with the Bureau on leadership and would have involved an area of some considerable size and potential as far as energy resources are concerned.

Mr. FREDERICK. We are prepared to continue that negotiation sometime very soon. I think we probably will need some reaction from this Committee in terms of how we ought to proceed, I expect, because ultimately there may be a need for legislation.

Mr. DICKS. We would appreciate being kept advised on the status of the negotiations and whatever policy this new Administration formulates in this area. Keep us advised of that.

Mr. FREDERICK. Yes, sir.

Mr. DICKS. Then I assume when we mark up this bill later on this year there will be a chance to have a further dialogue.

Mr. FREDERICK. Very well.

ROYALTY COLLECTION SYSTEM

Mr. DICKS. In 1979 the report entitled "Oil and Gas Royalty Collections—Serious Financial Management Problems Needed Congressional Attention" April 13, 1979. The General Accounting Office said the royalty collection system for oil and gas taken from federal lands "does not have adequate internal controls to provide reasonable assurance that all royalties are collected."

What actions have been taken by Geological Survey since then to provide that assurance?

Mr. FREDERICK. Mr. Chairman, I have Don Kash, the Chief of our Conservation Division, to help me out on this particular one. Let me say some things first in introducing it:

First of all, even before the GAO report was issued, the Survey had detected we were going to have fairly sizable problems in that regard. They come from many sources. One of the most obvious ones would be the tremendous increase in the price of oil, as a matter of fact, and subsequently the intense interest.

We took a fairly good look internally at our existing system and found it was just inadequate. It is mostly a manual system. The procedures are antiquated and we have trouble just reconciling the accounts as they come in. We do not have built into that system production audit or follow-on investigation which looks in terms of seeing whether or not we are getting the information accurately reported.

What we have proposed to do, in conjunction with the GAO report and based on our own investigation, is to put together a streamlined royalty management system. That proposal is included.

Mr. DICKS. In the supplemental?

Mr. FREDERICK. In the 1981 supplemental and we have initiative in 1982 to increase that a bit.

Mr. DICKS. Why don't you expand on that later. You are requesting a $7.4 million supplemental for royalty management system?

Mr. FREDERICK. Yes. That is correct.

Mr. DICKS. And an additional increase of close to $2 million in 1982?

Mr. FREDERICK. That is right.

Mr. DICKS. Please describe how this program will be initiated, what improvements the program will entail, and how long it will take to put into place.

Once it is in place, what increased royalties will accrue to the United States?

Mr. FREDERICK. Let me respond to that and then I will call on Dr. Kash.

We intend to use the money for two or three things. We intend to centralize our accounting activities in one location in Denver. We intend to build a modern computer system based primarily on the IRS approach for handling accounts, and we also——

Mr. DICKS. You will really get tough; is that right?

Mr. FREDERICK. Yes, sir. We also intend to reconcile a large number of accounts. Don, is that on the order of 30,000 plus?

Dr. KASH. Yes. That is correct.

Mr. FREDERICK. About 30 thousand-plus accounts to go into that system and initiate a program hopefully beginning sometime this summer.

Don can talk more about the system and what we are losing as a result of not having an adequate system.

Dr. KASH. In February or March of 1979 we established in the Survey a task force——

Mr. DICKS. What was the date again?

Dr. KASH. February or March.

Mr. DICKS. Of 1979?

Dr. KASH. 1979. That was following an interim study which Doyle referred to within the Geological Survey.

Mr. DICKS. The same time GAO was investigating it?

Dr. KASH. GAO's report came out in May or June, as I recall.

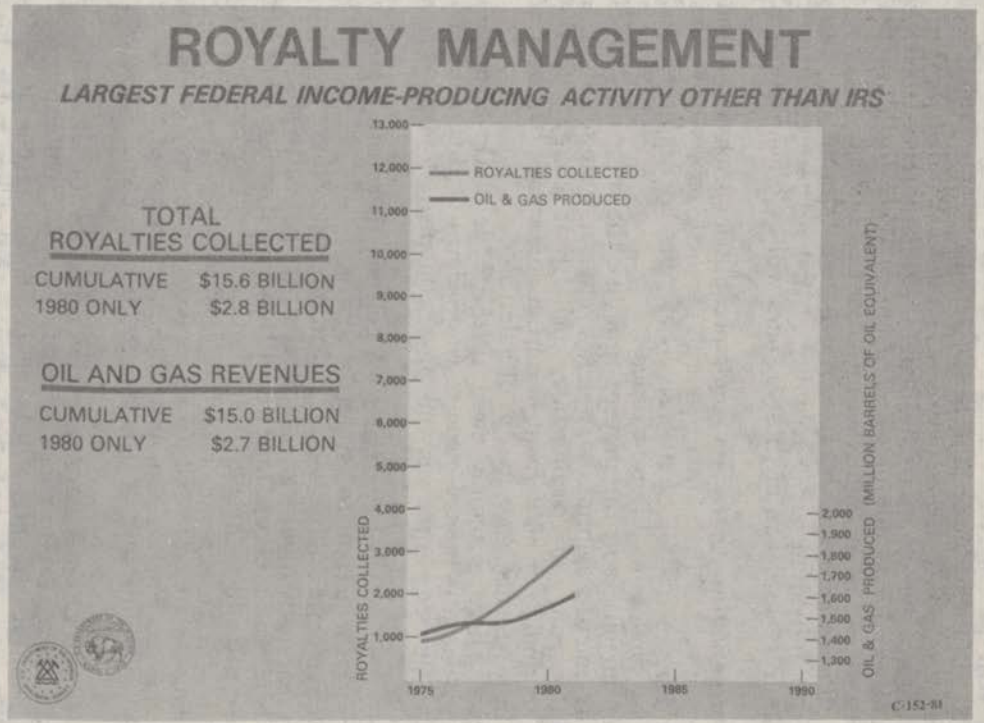
Mr. DICKS. April of 1979.

Dr. KASH. Basically what we found in our own internal study is consistent with what the GAO found. This was a system which really was established 40 years ago and basically it was an accounting system which looked a lot like your checkbook looks.

In the interim the revenues had increased and the system had become considerably more complex.

We have on the chart here just a general picture of the royalties which the Survey is collecting at the present time from oil, gas and other minerals on Federal lands.

[The chart follows:]



The Geological Survey is engaged in the conversion of its current royalty accounting system to a modernized royalty management system. The chart reflects the growth in royalty collection associated with increased leasing of Federal and Indian lands for oil and gas production coupled with the rising price of oil.

In fiscal year 1980 we collected about $2.7 billion. We anticipate that in 1981 it will be something above $4 billion. Our projections indicate that by 1985 it will be between $11 and $12 billion.

The task force which was initiated in 1979 has gone through what is really the first detailed design phase. We are now at the point where we can begin implementation of this system.

As Doyle indicated, what the system will do is to break down the accounts into individual payer accounts so that if there are five or six owners on a lease each of those owners will be an independent account.

At the present time there is a single account for each lease, and our folks spend all of their time trying to reconcile essentially sales reports and payments for each lease. They come in from different people. They come in at different times.

In one of our offices at the present time just the reconciliation is running six months behind, so we now have a system which is collecting the money and trying to reconcile that money with the sales reports and 70 or 80 percent of our accounts have balances in them, or, in my terms, they are out of balance.

Mr. DICKS. There is money owed to the Federal Government?

Dr. KASH. There is money owed to the Federal Government and the Federal Government owes the payers money. It is almost a balance at the present time.

However, the GAO believes, and we believe, those are systemic problems with the accounting system we have.

The new system would ask each of the interest owners to calculate his or her own royalties, submit a report basically similar to the 1040 form, and a check, and we will assume that account is in balance. We will run it through a pre-audit similar to what the IRS does. There will be a number of analyses carried out of the accounts during the process, and we will have four review and analysis offices close to where a majority of the payers are to do what is in practice post-audit studies where there are problems of the very large payers.

It is important to note that the payers range from those who pay us $100 million a year to those who pay us a few dollars a year.

We are using a percentage number which came from the GAO report. What the GAO report indicated is that where companies had joint activities with other companies and had implemented post-audit activities, they had increased their returns by 10 percent. If we use that 10 percent figure, based on the $2.7 billion collected in fiscal 1980, then presumably we are not collecting something like $270 million a year.

Mr. DICKS. Not collecting it at all?

Dr. KASH. Yes, sir. We have a system which is in very, very serious need of readjustment.

Mr. DICKS. How long will it take us to get this situation substantially improved?

Dr. KASH. We have a schedule at the present time in which we hope to move the accounts from three of our smallest offices into the new system on May 15.

Mr. DICKS. Why does it take this long?

Dr. KASH. It is a very, very complex accounting system. I can go into some detail in this connection.

I will start by saying that at the present time we don't even have a good record as to who all the interest owners are. We have to identify those people. We have to identify the proportion of the interest they own, a data collection activity which I might note the companies have been supporting us on in a very real way. Without exception the companies are eager to see us put the new system into place because it will simplify their activities in a very major way.

Mr. DICKS. I would like to be certain that the committee is advised and kept abreast of the record.

I have some questions I would like to submit to follow up on this subject for the record. I would like them answered for the record.

Mr. FREDERICK. We will be happy to do that.

Mr. DICKS. Mr. AuCoin will take over for a moment.

ROYALTY MANAGEMENT SYSTEM BENEFITS

Mr. AUCOIN. To follow up on the royalty discussion let me ask this question. What will the overall monetary benefit of the system be to the Government? In other words, how much money will it save in terms of personnel costs and how much will it increase the amount of royalties collected?

Mr. FREDERICK. Mr. Chairman, as Dr. Kash mentioned a few moments ago, we think the system will increase the amount of revenues returned to the Government substantially. He mentioned a 10 percent figure. We don't know exactly whether 10 percent is completely accurate or not. That is the estimate of the experts who have been involved in those fields.

That means $1 million a day additional to the Government with the kinds of revenues we are collecting at the moment. That optimistic picture in terms of the additional amount of funds we can collect is based on two or three essential things.

One simple thing is just being able to deposit the checks immediately as they come in. There is a substantial increase in the revenues as a result of that.

Also the ability to quickly identify problem areas and reconcile those very quickly would be another advantage of the system. Finally, a kind of production audit phase should be included to look at substantial problems if it appears theft or abuse of the system are happening, and target more effectively our inspectors charged with looking at those kinds of things.

As far as savings in terms of personnel in the immediate system, we don't think there will be a substantial savings. There will be a requirement for some additional people early on to get the system up but we think we can operate it with about the same number of people.

Mr. DICKS. You referred to estimates of experts. Who precisely has reviewed the establishment of this system and give us some assurance there would be an improvement?

Mr. FREDERICK. I will ask Don to respond.

Dr. KASH. We had it reviewed in several ways. Initially we had what we refer to as a blue ribbon panel—made up of industry representatives ranging across the size of industry concerned, representatives from GAO, Bureau of Land Management and the Bureau of Indian Affairs—met periodically to review the system.

Initially in the conceptual design we had a review of it done by Arthur Anderson and Company. At the present time we have working with us as contractors two concerns—Sterling Systems, which is a systems development, really computer organization, and Arthur Anderson.

We have used very heavily as a model a new system which has been put into place in the State of Louisiana. It has been basically the model for the system we put into place.

The system has, I guess, been reviewed in various ways within the Department. Clearly the Mobil Oil Company which had two representatives on our review panel carried out a major internal review. We believe there is no question about the efficacy and appropriateness of the system. No questions have been raised.

MOUNT ST. HELENS

Mr. AuCoin. Let's turn if we may to Mount St. Helens volcanos and that range of problems. It is timely that I take the Chair at this particular moment.

Review, if you would, the history of the recent activity of Mount St. Helens volcano, the extent of the damage to date and the potential for future eruption and damage.

Mr. Frederick. I would be happy to, Mr. Chairman.

I will introduce Dr. Peck, Chief of the Geologic Division.

For some years we have had a fairly moderate effort to look at the Cascade volcano. This was an outgrowth in part of the overall volcano monitoring program and supported substantially by the Geothermal Program in that particular area and our Earthquake Hazards Program.

We were looking at the Cascade volcanos. We had looked fairly closely at Mount St. Helens. A couple of our scientists had just finished a report two years earlier which suggested that out of all the Cascade volcanos Mount St. Helens was potentially the most dangerous and could be expected to erupt in the near future.

Mr. AuCoin. At that point we all started laughing, but we stopped around May of last year.

Mr. Frederick. A little bit of that. I think the response was pretty good.

Beginning early in 1980 we picked up seismic events in and around Mount St. Helens. Our people recognized the importance of those seismic events fairly quickly, and we martialed our efforts to take a look at the volcano, as a matter of fact. We got ourselves into a position to take a look and establish the relationship with the Forest Service, with the State of Washington, and we are generally and constantly monitoring the volcano.

Our people were in pretty good shape to predict most all of the events related to the catastrophic events except the intensity of the lateral explosion and perhaps the extent of the ash fall.

Let me ask Dr. Peck to start from there and give you an indication in terms of what we did, what the damage was, and ultimately what additional happened.

Then I will call on Phil Cohen, Chief of the Water Resources Division, to talk about the water-related aspects.

Dr. Peck. As Mr. Frederick mentioned, the first indication of an eruption was on March 20. We recorded the seismic activity. We

immediately moved additional seismometers in. On March 27, the initial eruption was at that time followed by a series of small ash eruptions which were just old ash. May 18 was the major lateral blast.

The poster shows imagery before and after the eruption. The red area is vegetation. The gray area shows the extent of the devastation caused by the eruption.

[The poster follows:]

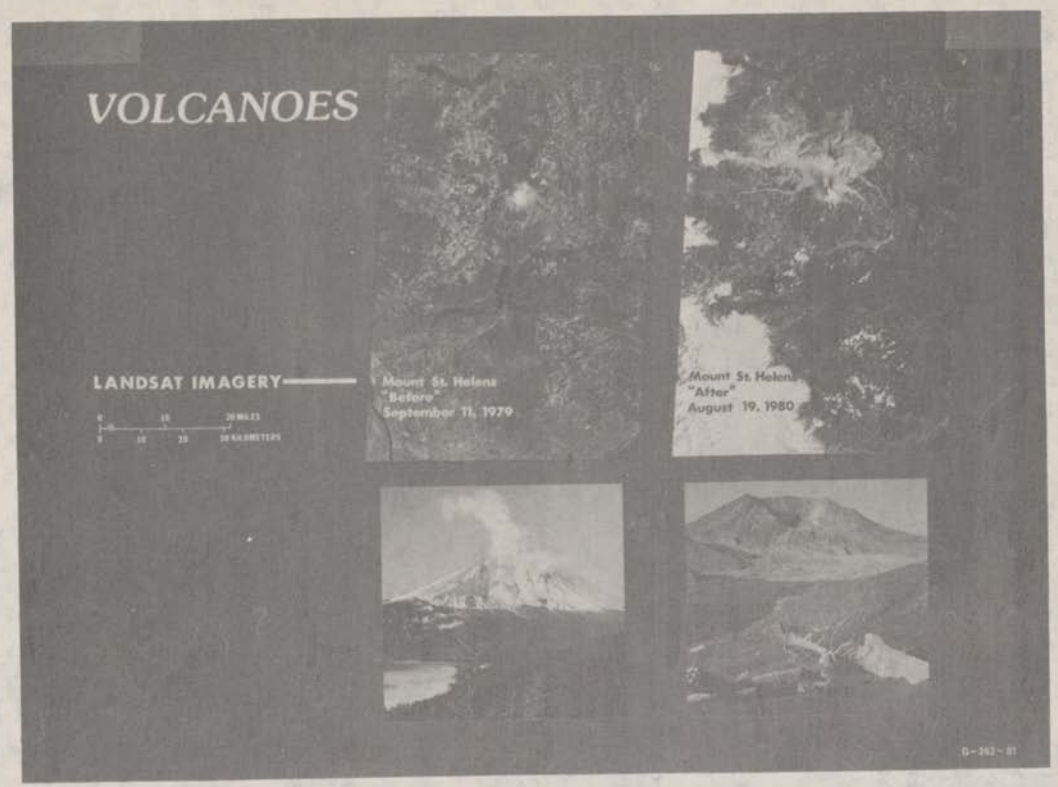


Chart showing Landsat (color infrared) imagery and ground-based photography of Mt. St. Helens, before (left) and after (right) the catastrophic eruption of May 18, 1980.

The scale shown here is 20 miles. It is an area of 20 miles across and 15 miles north and south.

The lower photograph shows the beautiful St. Helens before the eruption and the upper photograph shows the devastation and the removal of the top of the cone after the eruption.

Since that time there has been a series of smaller eruptions. The May 18 eruption was preceded by a swelling of the cone, and a sharp earthquake. Apparently the swollen area slid off, releasing the pressure.

Since that time there has been a series of smaller eruptions which the folks in Portland noticed particularly when the wind blew that way. Mostly the ash was blown straight off to the east.

What has been happening is that there has been a growth of a sort of sticky dome in the summit crater, accompanied by the eruption of some of the lava as ash to considerable elevation but not nearly as high as the May 18 ash.

We have been fairly successful in predicting the occurrence of these through either increased earthquake activity right before the eruption or through tremor, volcanic tremor, which is a seismograph report going up and down and caused by movement of lava underground.

We have had some clues from the extension of the walls of the crater due to the growth of the dome. Sometimes that is accelerated. We have had some indications of changing carbon and sulfur gases with an increase in sulfur gases before an eruption.

Therefore, most eruptions have given us a few hours' to a day's notice so they can declare a coming emergency and evacuate the hazardous areas.

Since May 18 these eruptions have numbered about a half dozen. The dome has continued to grow. The lava has been changing in composition throughout this period. It started out as dacite with about 68 percent silica. It has evolved more into an andesite with about 60 percent silica. That means it is less viscous. It does not hold the volcanic gas as tightly, so the eruptic cloud is not as dramatic, not as high, and lavas are more fluid.

Judging from the eruptive activity of other volcanos, an awfully good example is Begimianny in Kamchatka, which had a lateral blast in the early '50s, similar to the St. Helens blast, and that was active up until 1979.

Judging from its activity and the activity in the 1800s of St. Helens, it may go through this dome building and eruption phase for several years or even decades, and this trend in composition may indicate that the eruptions will be less vigorous through the next year or so and may even be followed by a period of quiescence, but there will be a continued cycle of dome-building and ash eruptions, very probably not as devastating as the first ash eruption but still continued activity which could go on for several years.

In any case we need to continue to monitor this thing because we are not dead sure what will happen.

Mr. FREDERICK. We have established already a permanent facility in Vancouver to monitor Mount St. Helens. We are looking overall at the possibility of further activities in the Cascades and perhaps we will establish an observatory, not observatory per se but a

station for operations from that area to other volcanos in the Cascades. We are also looking at Alaska volcanos.

Mr. AuCoin. Can we get with any accuracy at all or any confidence at all that the first blast, the devastating blast in May of last year, if there is a period of continued activity, would in all likelihood be the largest and most devastating?

Dr. Peck. In all likelihood.

Mr. Frederick. That is right.

Mr. AuCoin. The potential for further damage is still there?

Dr. Peck. That is right. There have been much larger eruptions in the past, pre-historic eruptions, so it is not inconceivable there could be a very large eruption.

Mr. Frederick. Our experts suggest the likelihood of another May equivalent event is pretty small.

Dr. Peck. That is right.

Mr. Frederick. We still think there are some dangers. One is the possibility of water runoff damage and that sort of thing. If you are interested we have Philip Cohen, Chief of the Water Resources Division, to talk to you generally about what we know and perhaps speculate a little bit on what we expect.

WATER RUNOFF DAMAGE AT MOUNT ST. HELENS

Mr. AuCoin. Mr. Cohen?

Mr. Cohen. I realize you are familiar with the geography. But for the benefit of the record let me mention some geographic points which I will refer to in my testimony.

As soon as the Geological Survey became aware of the first reawakening of Mount St. Helens with regard to our water resources activity we moved to upgrade and enhance the network of measuring and observation points in place. We have a network which is nationwide, and, within a radius of about 50 miles of Mount St. Helens, we had 80 stations in place prior to the initial awakening of the volcano. These stations measure stream flow, water quality, and ground water levels. That is part of the on-going effort in the State of Washington.

We immediately upgraded that network concentrating largely in the immediate vicinity of Mount St. Helens by increasing the number of stations, the parameters we were measuring, and the frequency of the parameters. At the same time we made contact with all appropriate local and State agencies with regard to the kinds of data we were collecting and the kinds of data they would expect to receive and the timeliness of that data.

In that regard, among other things, we installed additional satellite data relay stations. We are in the early process of running this program throughout the United States, but we felt this was a place where we needed real time data. If there was any place we needed it, it was here.

We also had radio telemetry at some stations where we worked together with the Weather Service.

On May 18, when the volcano did erupt, many of our stations did precisely what they should have done. They recorded events, and many were destroyed as a result of the eruptions.

The most dramatic feature in terms of the effect on the hydrology was what is referred to as a debris avalanche. A mass of

material was blown off the mountain which filled the north fork of the Toutle River for a length of 17 miles. It had a maximum thickness of 600 feet near the toe of the volcano, and then it thinned down as it went downstream.

That avalanche blocked the outflow from Spirit Lake. That caused immediate concern in terms of the potential for Spirit Lake receiving substantial amounts of runoff and that runoff overtopping the debris dam and causing massive flooding.

Before that happened there was a massive mud flow within three or four hours which originated in and around the mountain. Some of the mud flow headed southward to the reservoirs to the south where, from the standpoint of potential for damage to life and property, it was probably greatest. However, most of the effect was to the north. The mud flows of greatest concern flowed both down the North Fork, and the South Fork of the Toutle River, merged, and flowed down the river. It had such great mass and viscosity it flowed up the Cowlitz River, and also down the Cowlitz River to the Columbia. Again most of the flow entering the Columbia flowed seaward. The mass was so great some flowed upstream toward Portland.

Part of the shoal blocked sea-going traffic to and from Portland.

The total volume of the flow, combined sediment and water, was three times greater than anything that had been previously measured in the Toutle River. This gives you some idea of the magnitude of the deposit and flow.

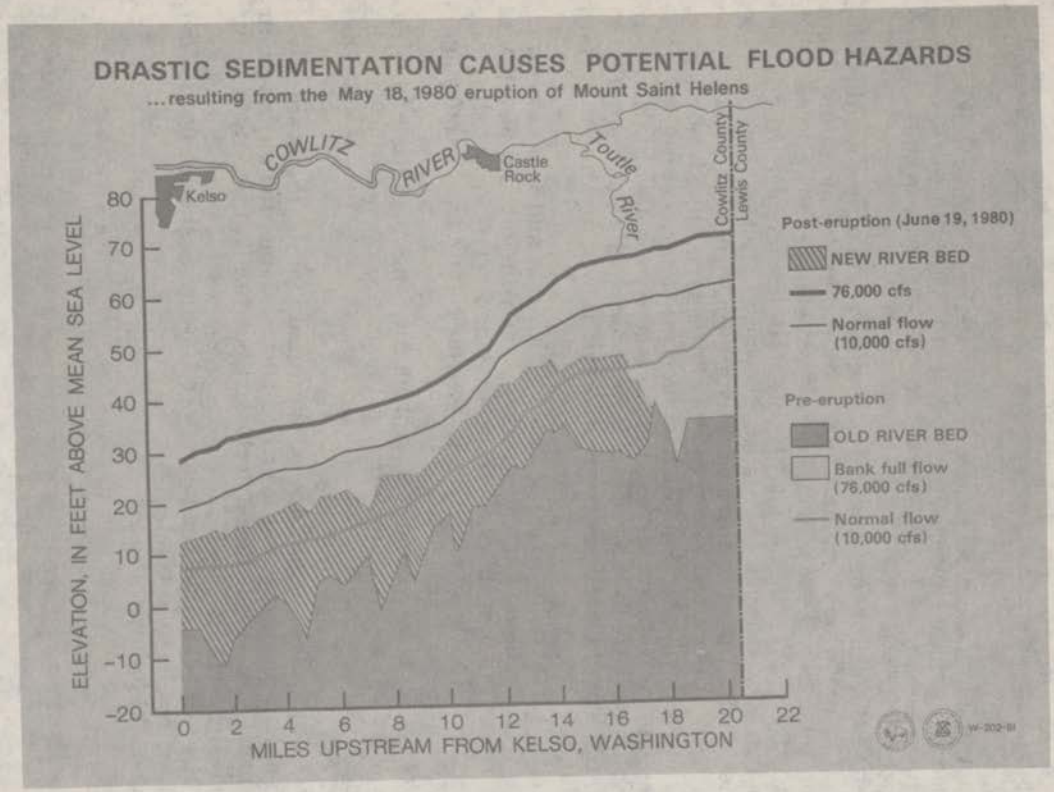
Its effect on the hydrology was dramatic. The magnitude of what we saw here was never before documented anywhere else in the world.

Mr. AuCoin. What was that?

Mr. Cohen. The magnitude of the disruption of the system was greater than anything that ever had been documented anywhere in the world. This is a little bit technical but this is the only way we can tell the story.

Prior to the eruption the bed of the Cowlitz is shown by the line atop the area in solid brown.

[The chart follows:]



The volcanic explosion of Mount St. Helens on May 18, 1980, triggered mudflows in the Toutle River system that deposited up to 15 feet of sediment in the channels of the lower Toutle and Cowlitz Rivers, reducing the within channel flow capacities by nearly 90 percent.

After eruption, when the flows came down the Toutle River, flowed down the Cowlitz and into the Columbia, the bed of the Cowlitz River was raised an average of 15 feet. Fifteen feet of sediment was deposited in the Cowlitz River.

The top of the area shown in solid blue represents the elevation of the flood plain. This is a normal flood plain existing prior to the eruption.

Under pre-eruption conditions, when the bed has a configuration as shown here, the line at the top of the ground area, a flow of 10,000 cubic feet per second, which would have been a normal flow—

Mr. AuCoin. Are you talking about water flow?

Mr. Cohen. 10,000 cubic feet per second of water which is just normal for the Cowlitz River, but it had an elevation, as shown by the solid blue line, above the bed but way below the flood plain.

Under the new conditions, the bed of the river having been raised 15 feet, that flow of 10,000 cubic feet per second would have been just about at the elevation of the flood plain and in some places above the flood plain. In other words, the flow that could have been accommodated very readily in the pre-eruption condition could not have been accommodated and would have caused flooding.

The flow which would have caused flooding would have been at this elevation prior to the eruption. It would have been 76,000 cubic feet per second. You will note the legend says in blue we would have had a bank full flow of 76,000 cubic feet per second.

Another way of saying that, we would have reached the flood plain at that flow. Under new conditions, 76,000 cubic feet per second, it would have been well above flood stage. It would have caused very serious flooding.

The actions that were taken were, first, to alert the public to the danger of possible increased flooding should Spirit Lake overtop the debris dam. In addition, there were other dams at the mouths of other tributaries. As soon as helicopters were available we made measurements trying to ascertain whether there would be further flood damage.

After about two or three days it appeared to us, and that initial assumption proved to be correct, that the danger of Spirit Lake overtopping was probably minimal, and there were other areas of concern which needed to be addressed more immediately.

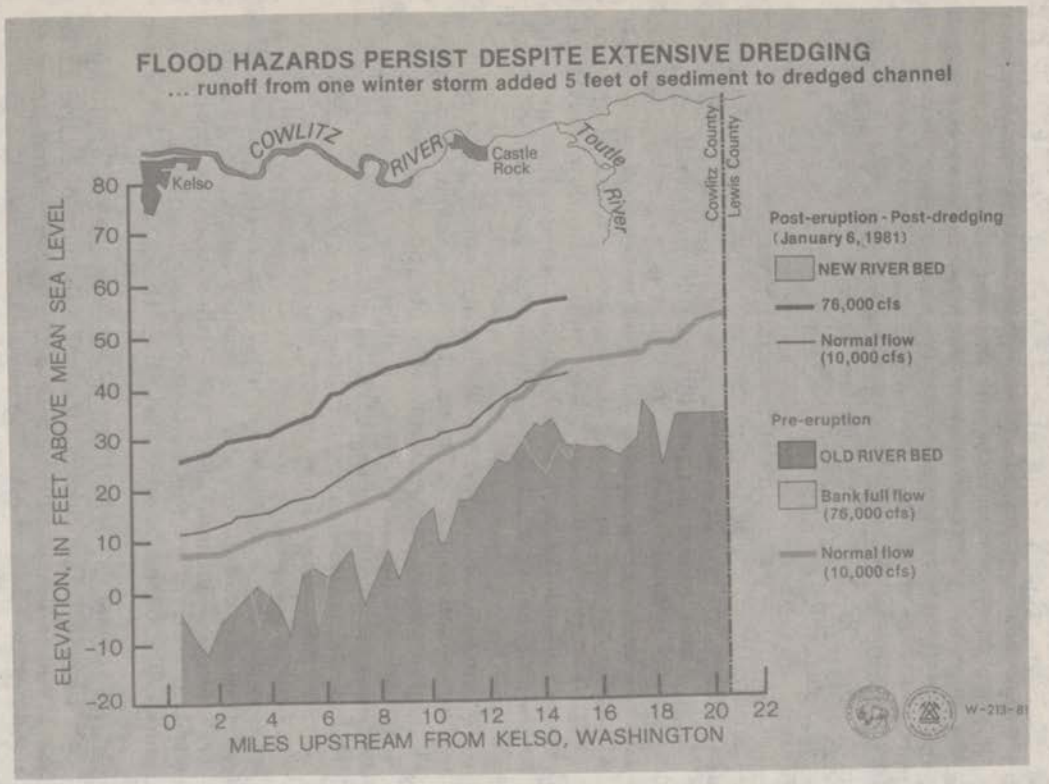
Within about a week the Corps of Army Engineers, based upon these kinds of data collected by the Geological Survey, the Corps of Army Engineers, the State, and a number of other Federal agencies, determined that the principal requirement was to move dredges into the mouth of the Columbia to open the shipping channel.

Mr. AuCoin. Where does the matter stand now, to summarize your presentation?

CURRENT HYDROLOGIC SITUATION AT MOUNT ST. HELENS

Mr. Cohen. The next chart shows what happened.

[The chart follows:]



Immediately following the eruption of Mt. St. Helens on May 18, 1980, and resulting mudflow, the Corps of Engineers mounted a dredging program on the lower Cowlitz River to lower the potential for water flooding.

What the Corps has done was open the shipping channel. They moved into the Cowlitz River and removed all of the materials shown in yellow. They dredged these materials. The dredges are still there.

That was dynamic. Sediment is still coming down. It is difficult to predict the rates at which sediment is coming down. We are working hard to do that.

The bed of the river has been lowered. These lines have all declined downward. We are now in a condition where 10,000 cubic feet per second will be well below the flood plain.

However, we are still in a condition where 76,000 cubic feet per second, which would have been at this elevation, is still above the flood plain.

The situation is well under control, as manifested by the fact that on December 25, 26 and 27 we had a significant flooding event as a result of light precipitation. If we had a heavy snowfall we would have had serious difficulty.

That flow was accommodated by the newly-dredged bed of the Cowlitz River and did not cause serious flooding based upon information put into the process.

Mr. AuCoin. Will we be left with the major risk of a substantial flooding with no further improvement on the situation given the 76,000 cubic feet factor or are steps being taken to lower the risks given the kinds of runoff of that volume?

Mr. Cohen. The risk has been lowered significantly. It does not and probably cannot take into account the most catastrophic event which conceivably could occur.

One can develop a scenario, not unreasonable, of several years of above-normal precipitation, a heavy snow pack developed along the flanks of Mount St. Helens, and another eruptive event causing almost instantaneous melting and discharging of those materials.

At the present time we cannot predict the probability of that occurrence, nor can we tell you what the magnitude of such a flow would be. We are spending a great deal of effort and time in cooperation with many universities in the State of Washington and other agencies trying to address just those questions.

Mr. AuCoin. Do you have anything to show us the areas that might be affected if you had a flooding of that magnitude and a flow of that consequence?

Mr. Cohen. Not a chart, but I know you are familiar with the geography there. The principal areas would be the flood plains of the North and South Forks of the Toutle River, and the flood plain of the Cowlitz River which involves the City of Kelso.

Mr. AuCoin. What population are we talking about? How many people would be affected potentially?

Mr. Cohen. I haven't the exact figure. We are talking about a population of thousands of people.

Again those cities are constructed and built largely on the flood plain. They are atop this blue surface. It is certainly within the realm of possibility that we can expect flows on the order of 76,000 cubic feet per second under non-catastrophic conditions.

Mr. AuCoin. That is the point I wanted you to make. That is not under catastrophic circumstances?

Mr. Cohen. That is right.

Mr. AuCoin. Further dredging will not remove that risk. Is that what you are telling us?

Mr. Cohen. To the extent to which one dredges, the extent to which one deepens and widens the channel, the risk declines, and it is a function of how deep and wide the channel is made.

Theoretically it is possible to completely remove the risk, but in matters of this sort when one cannot measure the extreme risk and one has certain financial limitations to remove all risk——

Mr. Frederick. Okay. One more thing. We think the Corps of Engineers has done a superb job in dealing with that issue.

Mr. AuCoin. I am sure of that.

Mr. Frederick. We have close cooperation with them. We are providing as much analysis as we can in terms of expected runoff, sedimentation, and that sort of thing. We think they are doing a pretty good job.

Mr. AuCoin. You have done a good job of illustrating how much the risk still persists given the situation we have right now and as it may exist in the future.

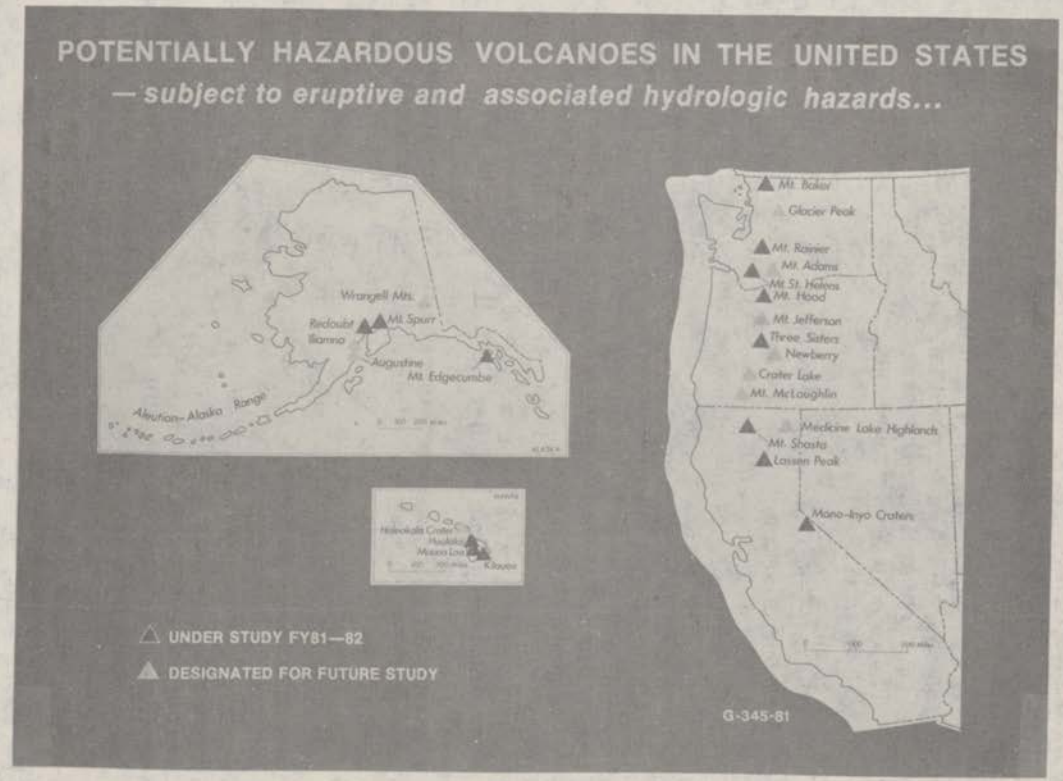
Mr. Frederick. We will continue to monitor the activity and supply information to the Corps of Engineers.

CASCADE AND ALASKA VOLCANOS

Mr. AuCoin. Based on this activity, can you give us an assessment of what the danger might be in the rest of the Cascade range and in related Alaskan volcanos?

I see you just happen to have a chart.

[The chart follows:]



Maps showing active and potentially active volcanoes in the United States and locations of current and future investigations by the Geological Survey.

Mr. FREDERICK. We just happen to have a chart.

Mr. AUCOIN. Our minds really work together.

Mr. FREDERICK. I will turn it back over to Dr. Peck in just a moment. We think there is danger in some of the other areas, and we have had, as I mentioned earlier, a fairly moderate program to look at the Cascade and Alaska volcanos. We think there is more effort required fully to evaluate the risk. Dallas?

Dr. PECK. There is an appreciable risk. We are approaching the problem in several ways.

In several of the volcanos in the past we have done reconnaissance studies identifying historic and pre-historic eruptions to get some feel for cycle of eruptions. In the last year we issued preliminary ones on Mount Hood and Shasta. We are doing additional studies in the red triangles to get some feeling on how recently they were active and how often the eruptions occurred.

At the same time we are starting to install monitoring networks on what appear to be the most hazardous volcanos, those in red. In each of the volcanos this would include a network of seismographs, tilt meters, a way of measuring the summit, and gas-monitoring equipment to look for changes in the composition of the carbon and sulfur gases.

At this stage on many of these we are acquiring the equipment and through the spring and summer we will be installing monitoring networks.

Mr. FREDERICK. The most important activities for the other volcanos will be, as Dr. Peck described, the monitoring system, and also completion of the hazards mapping activities like those we had finished on Mount St. Helens and some of the other volcanos. Those activities are under way for what we consider to be the most dangerous, potentially dangerous, areas.

Mr. AUCOIN. You don't have studies of all the volcanos but those you feel at this point represent the most likelihood of danger?

Mr. FREDERICK. We have fair coverage from a seismic standpoint. We can probably detect some seismic activity. We don't have coverage in terms of the hazards mapping or detailed monitoring that would let us make daily decisions.

Mr. AUCOIN. Can you tell the committee either now or for the record what the cost would be for full coverage of all volcanos in the chain?

Dr. PECK. We can.

Mr. FREDERICK. Let us provide that for the record.

[The information follows:]

COST OF FULL HAZARDS MAPPING OF VOLCANOS IN CASCADE CHAIN

With presntly available manpower and funding resources, we cannot cover all the volcanoes of the Cascade Range at this time, but we plan to obtain such coverage as rapidly as possible. According to our 5-year plan, assuming availability of personnel and funding, by Fiscal Year 1983 we plan to establish or improve volcano monitoring networks on the potentially most hazardous volcanoes of the Cascade Range and of the Alaska Range, and at the same time continue the intensive monitoring of Mount St. Helen's. The plan also calls for accelerated volcano hazards mapping and risk assessment activities, so that the most hazardous volcanoes of the Cascades will have been covered by the end of Fiscal Year 1988. Volcanoes monitoring activities will continue over this period and will require increased funding to accommodate anticipated economic inflationary pressures. We believe that our 5-year plan is prudent in obtaining key informaiton on the most hazardous volcanoes.

The total cost to complete volcanic hazards mapping and risk assessment of the 15 major Cascade volcanoes will be about $15 million (in 1980 dollars); present plans are to complete this mapping within the next 10–12 years. The total cost for establishment of monitoring networks (including seismic, deformation, gas and thermal arrays) will be about $12 milion, to be completed over the next 3–4 years. Once implemented about $3.5 million/year will be needed to monitor and maintain these networks. If these plans for completion of hazards mapping and of establishment of monitoring networks were to be accelerated, additional personnel would have to be hired and additional funds would be required for helicopter and other logistical services. Additional funds would also be required to accelerate production of real-time seismic monitoring equipment.

Assessment of the hydrologic hazards associated with the volcanic activity of the major Cascade volcanoes would be about $12 million (in 1980 dollars). Presently, the Geologic Survey plans to complete this effort in about 10 years.

The assessment of hydrologic hazards would include determination of ice and snow volumes, estimation of the nagnitude of floods and mudflows, the route of the water or mudflows, and the area inundated. The cultural features—roads, bridges, communities, industries—likely to be impacted will be identified. The plan would also include the analysis of potential ash fallout on lakes, reservoirs, and rivers and water-management features—water and sewage treatment plants, irrigation works, fish hatcheries, etc. Rainfall-runoff characteristics would also be determined to provide an analysis of potential stream blockage after the eruption from erosion of mudflow, ash, or other volcanic debris.

Acceleration of this program could not be accomplished without hiring additional personnel. No long-term monitoring activities of quiescent volcanoes are contemplated.

Mr. AuCoin. Based on what you have been able to determine so far, is there some rough order of potential threat of the various volcanos? If so, what is it?

Dr. Peck. Which ones?

Mr. AuCoin. Which ones are most dangerous, then the second and third. Which one worries you most, and so forth?

Dr. Peck. What we have to do is to look back at the historic pre-historic record and see how frequently the eruptions occurred. Some of the volcanos like Glacier Peak and Mount Adams haven't erupted for a long time. There are no records of historic eruptions, and pre-historic eruptions were a long time ago.

Mr. AuCoin. Do you feel safe about those?

Dr. Peck. Yes. The ones in red—Mount Baker, Rainier, St. Helens, Hood, Three Sisters, Shasta, Lassen, and Mono-Ino.

Mr. AuCoin. Do you discount the north and south?

Dr. Peck. We cannot tell which would be the most threat. Each of those I listed poses a threat. We need to monitor each one. We have portable material in the network and volcanologists stationed at St. Helens so we can move in in case we get preliminary indications. I will not name one.

IMPACTS ON ATMOSPHERE

Mr. McDade. This has been a very informative and comprehensive discussion. I know impacts on the atmosphere are not principally the responsibility of the Survey, but I am sure there have been discussions you have been privy to in terms of the impacts which have occurred in the atmosphere.

It is a fair question to ask you, should I write a letter to NOAA?

Mr. Frederick. We can speak to it a little bit.

Dr. Peck. The plume peaking from the May 18 catastrophic eruption was monitored as it crossed the country, both by airplane sampling and by monitoring from satellites. There was a fair bit of

speculation, as you may recall, that the eruption might affect the temperatures or the sunsets. Judging from the TV news, which is about what I know about the climatic effects——

Mr. McDade. We are all in trouble.

Dr. Peck. Only a tenth of a degree temperature will be changed.

Mr. McDade. In temperature?

Dr. Peck. That is right.

Mr. McDade. What was the magnitude of Krakatoa vis-a-vis St. Helens?

Dr. Peck. Maybe 50 to 100 times larger.

Mr. Frederick. It was substantially larger. We did have a chart on that.

Mr. McDade. So we are able to say reasonably we cannot detect any change in temperature across the nation west to east as a result of that?

Dr. Peck. That is right. There is another handle on this, and as part of the climate program we are looking at what causes long scale changes in climate. Are changes related to volcanic eruptions?

By looking at a core from the Atlantic Ocean we can get some feeling of the climatic changes and the abundance of eruptions. Recently we discovered there is not a close relationship, although a specific large eruption like Krakatoa may affect the climate a year or two. There is no relation to major climate changes.

Mr. McDade. What about particles and chemicals that are spewed into the air? Do they adversely affect the atmosphere?

Dr. Peck. We have been looking at the ash and the composition of the ash that blows out. Of course, the State of Washington has been doing some work on this sort of thing as well. I don't think there have been very serious effects.

IMPACTS ON ENVIRONMENT

Mr. Cohen. Shortly after the major eruption we saw some significant changes in stream chemistry.

Mr. McDade. On the order of acid rain?

Mr. Cohen. Streams became quite acid. There were fish kills but probably in large part they were related to elevated temperatures and abrasion of gills with the fine ash.

However, the chemistry of the stream flow and chemistry of the ground water has been changed. Again you had a dramatic change at the outset.

Changes now are far more subtle but nonetheless there are minor constituents, as Dr. Peck indicated, which are leached.

Mr. McDade. The jury is still out on impacts?

Mr. Cohen. We are looking closely at it because of possible health implications.

Mr. AuCoin. Can you speak to the fisheries?

Mr. Cohen. Yes. We cannot speak on agricultural implications. We are providing the raw information which we are feeding into this.

Mr. McDade. Did you confine your statement to the area in close proximity to the volcano or did you go as far as States like Idaho and others?

Mr. Cohen. Yes. I did.

Mr. McDADE. How far?

Mr. COHEN. To the Mississippi River in the initial reconnaissance. As a result of that initial reconnaissance we demonstrated we need not work in significant detail that far eastward.

Mr. McDADE. You found, in the area in close proximity and I will let you define that, that there were clear impacts which were adverse. They persist but the jury is still out about whether or not the volcano has done some kind of irreparable damage to the ecology of the water, and then it mitigates as you move west. Suppose you define the area. How far?

Mr. COHEN. It mitigates as you move east.

Mr. McDADE. How far?

Mr. COHEN. We are seeing traces in Idaho. We are not finding significant changes in Montana.

Mr. McDADE. What is the mileage?

Mr. COHEN. I can tell you now and supply accurate information for the record. It is several hundred miles.

Mr. McDADE. This occurred several hundred miles to the east and then diminished. Montana has no perceivable impact at this time?

Mr. COHEN. We have not been able to detect any significant impact. We are still looking.

Mr. McDADE. How far is that in miles?

Mr. COHEN. Probably on the order of 500 miles.

Mr. McDADE. That is a total of 1,200 miles?

Mr. COHEN. We are going east.

Mr. FREDERICK. This all went east.

Mr. COHEN. Five hundred miles from the volcano.

Mr. McDADE. Is there a point or did you just say the Mississippi River beyond which you found no impact in the streams or the aquifer?

Mr. COHEN. There were minute amounts of ash as far east as the Mississippi River states but very minute.

Mr. McDADE. Can we say they were not harmful or do we know?

Mr. COHEN. We are unaware of any impact as far eastward as the Mississippi River.

Mr. McDADE. Is there anything else besides the impact in the streams because of the deposit of chemicals and ash? You have already indicated you did not find much temperature variation with respect to climate. Are there any other aberrations as a result of the volcanos blowing at the top and filling the atmosphere with all sorts of things? Did you find unusual rainfall, lack of rainfall, any climate alteration or anything else we should know about based on what you know so far?

IMPACTS ON CROPS

Dr. PECK. There were strong effects on the crops.

Mr. McDADE. Yes, there was absolute devastation to agriculture. That was an ash fall?

Dr. PECK. That is right.

Mr. McDADE. In close proximity?

Dr. PECK. Across the State of Washington and Idaho.

Mr. McDADE. All the way into Idaho?

Dr. COHEN. There were multiple effects, leaching of the chemicals on the leaves of plants.

Mr. MCDADE. What kinds of chemicals?

Mr. COHEN. There are soluble salts associated with the ash. When these salts go into solution we have chloride, sulfate, some of the common ions in concentrations heavy enough to cause damage to the leaves.

Mr. MCDADE. Is it permanent or a one-time effect? Does it stay in the soil, leaf, or do we know?

Mr. COHEN. We are out of my area of expertise, but being familiar with the literature and keeping up with it, generally what seems to be coming out of the university and agricultural communities states these effects will not be long term.

Mr. MCDADE. They will not be?

Mr. COHEN. Not significant except in the immediate vicinity of the volcano.

Mr. MCDADE. In the proximity area you have a problem?

Mr. COHEN. In the Yakima Valley where there was heavy ash fall they are coming out of this very well.

Mr. FREDERICK. Overall in these situations there may be a positive effect over time. In short-term deleterious effect and long-term a good effect.

Dr. PECK. Where the ash was very thick in eastern Washington they are probably plowing it into the soil; I don't think it is regarded as a positive thing. If we had that same ash in our back yards here it would be a wonderful way to loosen the heavy clay. We have a loose soil in eastern Washington, anyway.

Mr. AUCOIN. Up to your ankles in ash.

Mr. DICKS. Especially the crops close to the volcano.

Mr. MCDADE. It is strange to hear it is a one-time event apparently. We are hoping it does not happen again. The question I wanted to get to is whether or not, because of the enormous eruption, there was permanent and identifiable damage outside the range of proximity.

IMPACTS OUTSIDE RANGE OF PROXIMITY

Dr. PECK. The range is 15 miles by 20 miles roughly.

Mr. FREDERICK. You can see it on this chart.

Dr. PECK. This is the area which was devastated.

Mr. AUCOIN. If you are talking about ash fall, proximity range is much broader than that.

Dr. PECK. That is right.

Mr. MCDADE. That is what I am getting at. What collateral effects are there? Would they be chemical? Would they be particulates or anything else that might have caused damage outside that range of proximity, and do we have evidence that they are of a permanent nature? Apparently evidence is to the contrary.

Dr. PECK. You are talking to two people not experts.

Mr. MCDADE. USDA is responsible for that?

Mr. FREDERICK. Yes, they're looking at the soils, plus organizations in the State of Washington.

Mr. McDade. I have one question with respect to Alaska. You can furnish the information for the record if you do not have it.

What is the energy potential of the William O. Douglas Wildlife Range in Alaska?

Mr. Frederick. I think we can answer that question, Mr. McDade, in terms of the best of our knowledge.

Mr. Dicks. The Arctic Wildlife Refuge?

Mr. Frederick. Yes. That is correct.

Mr. Dicks. It has a new name. I wanted to be sure.

Mr. Frederick. This is Dr. Betty Miller who basically coordinates our energy resource estimates for oil and gas. Betty can address the estimates.

The WODAWR is an acronym.

Mr. McDade. Welcome, Doctor. Can you respond to that question?

Dr. Miller. Yes. I can.

Mr. Dicks. It is important for the committee to understand the legislative situation which the bill puts us in, in terms of the kind of research that can be done and the kind of effort that can be allowed under the law in that area. It would be helpful if you would put the whole thing together for us.

Mr. Frederick. Would you like to start with that? James Devine can answer that one and we will go back to Dr. Miller.

Mr. McDade. You get a reprieve.

Mr. Dicks. Don't go far, though.

Mr. Devine. Under the provisions of the Alaska National Interest Lands Conservation Act there is a stipulation that exploration to include seismic exploration only is allowed in the Arctic Wildlife Range, but it does not allow any drilling or any effort toward production without additional legislation.

Mr. Dicks. We can find out quite a bit with seismic work; is that correct?

Mr. Devine. Certainly. You can always find out a lot of general information and some specific information from seismic profiling. Obviously it is better to be able to do drilling to confirm what you see on the seismic record, but you do indeed learn a lot just from the seismic records.

Mr. McDade. You say obviously it is better to do some drilling?

Mr. Devine. Yes. That is correct.

Mr. McDade. You said it was better to do drilling with seismic work.

Mr. Devine. You put more specifics on the seismic profile where you have a core hole to correlate the record. Otherwise you have to make assumptions as to the types of rock you believe you are seeing on the seismic record.

Mr. McDade. My question for you, then, which perhaps is beyond your scope or perhaps not, is whether in your judgment and in the judgment of the Survey any kind of irreparable damage would be done to the property were we to drill upon it for this purpose.

Mr. Devine. There is some disturbance of the environment any time you drill a hole.

Mr. Dicks. We are aware of that.

Mr. DEVINE. You cannot do it with zero amount. The answer is qualitative. Yes, there would be some damage.

Mr. MCDADE. That is not what I asked. Is there any kind of irreparable damage?

Mr. DICKS. Can't you fill in the hole?

Mr. DEVINE. Our experience in NPRA is that we can rehabilitate the drill sites.

Mr. MCDADE. Is it inconsistent to drill for purposes of an oil find in this area?

Mr. DEVINE. We feel our record at NPRA shows damage to the environment by drilling has been very minimal.

Mr. MCDADE. So your answer is that you could drill without doing damage to the refuge. Is that right?

Mr. DEVINE. If you do not force me to say zero damage; without significant damage.

Mr. MCDADE. Something that would not damage the general nature of the refuge.

Mr. DEVINE. There would have to be stipulations regarding Caribou which would have to be adhered to if I say there will be no significant damage.

Mr. MCDADE. Like what? What are you talking about?

Mr. DICKS. This is the mating season.

Mr. DEVINE. The coastal range is calving grounds for the Caribou. It would be inappropriate to have activity during that period of time.

Mr. MCDADE. How long does that last?

Mr. DEVINE. I am not a biologist. I don't know how long the time is.

Mr. BETTENBERG. The drilling on the reserve takes place in the wintertime when there is heavy snow cover, it is dark and cold, and so forth. The regular season is in the spring.

Mr. DICKS. They occur in different cycles?

Mr. BETTENBERG. Yes. That is correct.

Mr. FREDERICK. We would be fairly comfortable in saying with our experience we believe drilling operations and the environment can be made reasonably compatible. We think we have been able to do a fair job.

There might be some effect left, however.

Mr. DICKS. Does the Administration plan any initiatives? Are you aware of any Administration initiatives to do just that, allow some drilling to occur up there in an environmentally acceptable way to affirm the seismic work? Is there any possibility of changing the law under consideration?

Mr. FREDERICK. That is a subject being discussed in the administration at the moment, at least within the Department of Interior.

So far I believe the Secretary has not finally decided.

He is indeed interested in pursuing the Arctic Wildlife Range very vigorously but he has yet to determine what he will propose.

Mr. DICKS. But he would have to get a change in the law.

Mr. FREDERICK. To drill?

Mr. DICKS. To drill.

Mr. FREDERICK. Yes. We might want to make a point on drilling versus seismic.

Jim's answer to the question is exactly right. One would learn a great deal more from drilling, as a matter of fact, but on the other hand we probably can learn a great deal from the seismic and perhaps could also approach it almost to the point of being able to go with commercial leasing without drilling.

If you asked our scientists they will respond as Jim did, as a matter of fact, and that is a reasonable response.

Mr. DICKS. Can you go to commercial drilling?

Mr. FREDERICK. Not without legislation.

Mr. DICKS. What you are saying is we may not have to repeat the NPRA experience?

Mr. FREDERICK. Yes, sir. That is correct.

Mr. DICKS. We might be able to make a judgment based on the seismic work and in fact this is an area in which leasing is a policy which we might want to pursue because prospects are favorable for success, and as a national policy consideration the Congress could go ahead and allow leasing without having to get into a very expensive drilling program. Is that right?

Mr. FREDERICK. I am suggesting that is a distinct possibility.

Mr. DICKS. That would be within kind of a responsible business-like way of approaching this problem?

Mr. FREDERICK. We believe it would.

Mr. DICKS. It would not be irresponsible not to do the drilling?

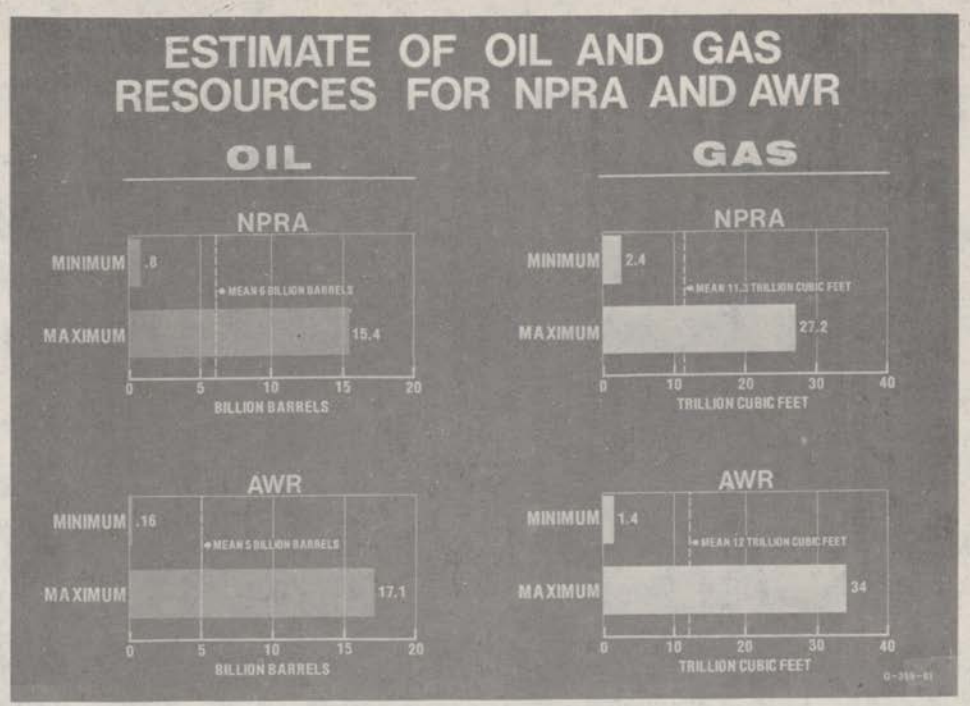
Mr. FREDERICK. That is right. One can conclude that would be a reasonable alternative.

Mr. DICKS. Mr. AuCoin had a question. Then we will go right to the question raised earlier. We will finish this out.

Mr. MCDADE. Would you enlighten us?

Mr. FREDERICK. The National Petroleum Reserve in Alaska and the Arctic Wildlife Range are shown on the charts.

[The charts follow:]



The USGS has conducted a series of oil and gas resource estimates for the NPRA during the exploration program since 1978. The latest oil and gas resource assessment was released by the Department of the Interior in the summer of 1980. In addition, the USGS has completed a preliminary assessment of the petroleum potential in Arctic National Wildlife Refuge (AWR) as requested by the U.S. Senate Committee on Energy and Natural Resources. The results of the AWR were released as an open-file report in July 1980.

When Dr. Miller talks about this she will tell you right away that there is a fairly wide range in terms of numbers. We don't have very much information in the Arctic Wildlife Range, so based on the assumption one makes with respect to the geology there could indeed be a lot or there might not be quite so much.

OIL AND GAS ESTIMATES OF NPRA AND AWR

Dr. MILLER. Based upon the understanding that there is only surface information available, geologic information on the surface and seismic information offshore, Canadian information to the east in MacKenzie Delta, and private industry information to the west of the Wildlife Refuge boundary, the best estimate that the Survey could come up with on preparing a study for the Senate Committee on Energy and National Resources was less than one billion to 17 billion barrels of oil. Our best estimate would be about five billion barrels of oil. This is represented here on this graph of less than a billion barrels to a maximum of 17 billion barrels. A best estimate is approximately 5 billion barrels on what we know today.

Mr. DICKS. That is similar to a projection from economists about inflation.

Dr. MILLER. This is a projection on the basis of minimum geologic conditions for the occurrence of oil and maximum geologic conditions for the occurrence of oil.

The same is true as to the gas. We are estimating between one trillion and 34 trillion with a best estimate of about 12 trillion cubic feet of gas.

Mr. MCDADE. As I see your figures, do they in effect say that the National Petroleum Reserve and the Wildlife Refuge, based on the fact we know we are estimating, contain roughly the same amounts? As I look at the chart that seems to be the summary. Is that correct?

Dr. MILLER. With a couple of comments. We know a lot more, we have about 28 wells, exploratory wells, in the NPRA. We have none here in the Wildlife Refuge. However, the total overall geology here versus here looks highly favorable here in the Wildlife Refuge.

Mr. MCDADE. "Here" is the Arctic region?

Dr. MILLER. Arctic Wildlife Refuge.

Mr. MCDADE. Even in the absence of wells of gas, you are estimating more on the Arctic range than you are on the petroleum reserve where we have actually had drilling occur.

Dr. MILLER. That is correct. The range of estimates is narrowed in terms of the last estimate on NPRA versus the initial estimate on the Wildlife Refuge.

Mr. MCDADE. The same is true with oil finds even though we have had a lot of drilling on the petroleum reserve and none on wildlife reserve?

Dr. MILLER. Yes. One thing to keep in mind is that this potential is estimated on approximately 1/12 of the area. This is 12 times larger (NPRA) than this (the Arctic Refuge) in terms of the petroleum area potential.

Mr. REGULA. Does your chart describe anticipated reserves or anticipated recoverable reserves?

Dr. MILLER. This is actually anticipated in place.

Mr. REGULA. What we would actually recover?

Dr. MILLER. A recovery factor of about a third of that. Let me caution again that this is based upon an evaluation of the surface geology and knowing nothing about the sub-surface.

Mr. FREDERICK. The information gives additional knowledge but it also suggests that it could go up or down based on additional information, so additional knowledge might lead you to believe the prospects are not nearly so great or it could suggest there is more.

Mr. DICKS. Let me be sure I understand this. We spend about $800 million of the taxpayers' money on the NPRA drilling program. Did the results show an increase or decrease in estimates.

Dr. MILLER. There have been four assessments made on NPRA. Between the first and second estimate the estimate went up. By the third estimate it went higher. In the fourth estimate it came back down.

Mr. DICKS. Can you give us the range? What was the range of the first estimate?

If you do not have it, supply it for the record.

[The information follows:]

Question. Please submit a record of all resource assessments by USGS of NPRA.
Answer. Resource assessment for the National Petroleum Reserve in Alaska.

HISTORY OF THE 105(B) NPRA RESOURCE ASSESSMENT

The first meetings of the two USGS Committees (the Geologic Committee and the Resource Appraisal Committee) to review all the geologic and geophysical data base necessary for an NPRA resource evaluation took place in November 1978 in Menlo Park, California, and later in Denver, Colorado. The first NPRA resource estimates were based upon the identification and evaluation of sixteen plays. At the time of the November 1978 evaluation, approximately forty-three test wells had been drilled in NPRA.

The second full-scale evaluation of the available information on NPRA took place in Menlo Park, California, in May 1979. New information for review included data from two wells that were being drilled at the time plus five wells that had been suspended or abandoned at the time of the second resource evaluation. Minor modifications were made on ten of the sixteen plays, the most significant changes involving only three of the plays. The total number of plays remained at sixteen. When the updated revisions to the plays had been added to the Monte Carlo model, a second resource evaluation was made in May 1979.

Meetings for the third update of the resource evaluation of NPRA were held in Menlo Park, California, in September 1979. New information for this update included well data, analyses, and interpretations. New data were available from one well then being drilled and from three additional wells that had been recently suspended or abandoned. In this update, as in the original resource appraisal, each play was reviewed and discussed by the full committees. Changes were enacted by team consensus on the play-appraisal data forms. The most important change was the separation of the Jurassic II play into two new and separate plays, making a total now of seventeen plays. This separation had been anticipated in the second update. Many minor revisions were made in the estimates on some of the reservoir attributes.

In May 1980, the fourth and, at the time of this report, the last review and update of the resource evaluation of NPRA was conducted by the two USGS Committees in Menlo Park, California. New information for review included data from nine wells, the most significant information affecting the resource evaluations derived from the Walakpa #1 well located fifteen miles south of Barrow. There were minor modifications on most of the seventeen plays. The most significant modifications were made in the resource appraisals for the Simpson play when the earlier extrapolations for the Jurassic reservoirs were found not to occur in the Walakpa #1 well. This resulted in a reduction of the total estimated resource potential when processed in the Monte Carlo model.

RESULTS OF NPRA RESOURCE ASSESSMENTS

The results of the four resource assessments for NPRA, as produced by the Monte Carlo model using the input from the USGS estimates of the geologic attributes, are recorded by date of the appraisal in Table 3A and 3B. The assessments from oil in place and gas in place are also reported as probability distributions in Figures 1 and 2. The latest revised resource estimates as of May 1980, published in a U.S. Department of Interior news release on July 17, 1980 (DOI, 1980a), provided an average value of total inplace resources for all of NPRA of approximately 6.40 billion barrels of oil and 10.99 trillion cubic feet of gas.

In reviewing the results of the four separate resource assessments as recorded in Table 3A and 3B, the following comments are made about some apparent relationships between the assessments.

There is a significant increase in the estimated petroleum potential between the November 1978 assessment and the May 1979 assessment. This is noted, in particular, with the assessment of the oil resources in place. This may be explained by the geologists' interpretations of new information from seven wells (two wells being drilled and five wells that were either suspended or abandoned at the time of the May 1979 assessment), which tended to emphasize a higher petroleum potential than did the November 1978 assessment.

The September 1979 assessment for oil-resource potential was not significantly different from that of May 1979. However, the resource potential for natural gas was assessed somewhat higher in September 1979. Four wells had been added at the time of the September 1979 review (one well being drilled and three wells either suspended or abandoned). The most important change was the separation of the Jurassic II Play into two new and separate plays—making a total of seventeen plays, one more than the previous assessment.

The May 1980 assessment of the petroleum-resource potential showed a significant reduction from the previous two assessments in May and September 1979. This reduction was made because information from the Walakpa #1 well indicated that the Jurassic section, thought by geologists to have high potential, was missing in the area. This information caused some major revisions in the geologic interpretations of the extent of the Jurassic plays.

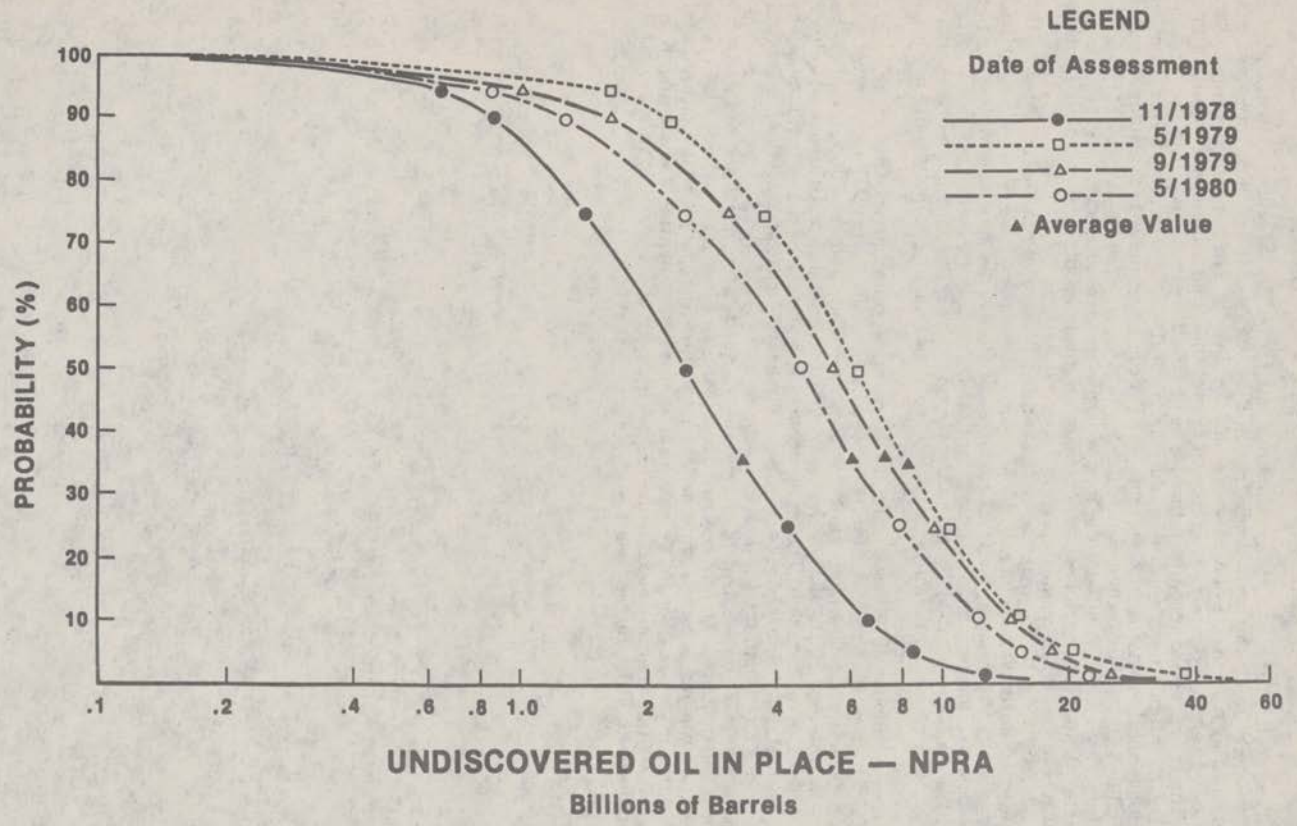

LEGEND
Date of Assessment
11/1978
5/1979
9/1979
5/1980
▲ Average Value
PROBABILITY (%)
100
90
80
70
60
50
40
30
20
10
.1
.2
.4
.6
.8
1.0
2
4
6
8
10
20
40
60
UNDISCOVERED OIL IN PLACE — NPRA
Billions of Barrels

Figure 1

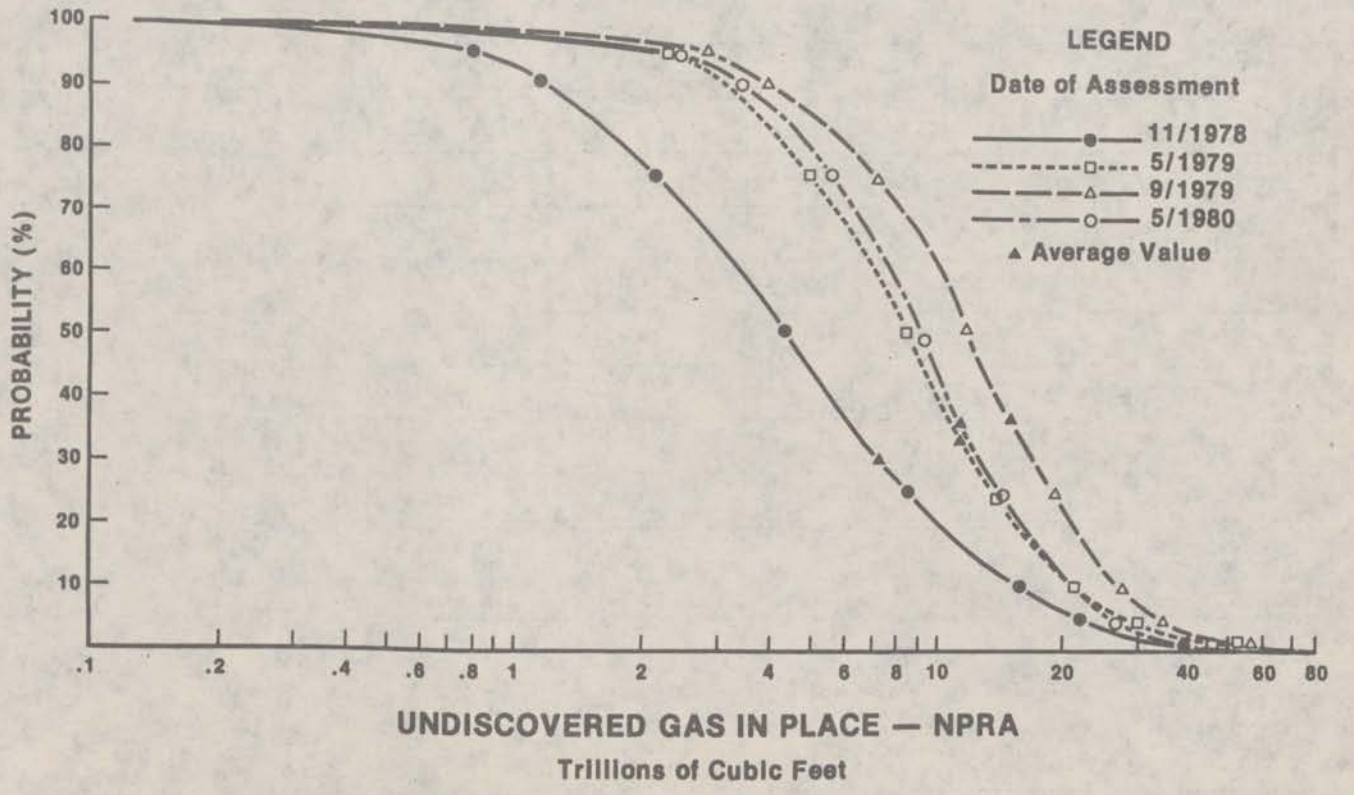

LEGEND
Date of Assessment
11/1978
5/1979
9/1979
5/1980
▲ Average Value
PROBABILITY (%)
100
90
80
70
60
50
40
30
20
10
.1
.2
.4
.6
.8
1
2
4
6
8
10
20
40
60
80
UNDISCOVERED GAS IN PLACE — NPRA
Trillions of Cubic Feet

Figure 2

Table 3

RESOURCE ASSESSMENTS FOR THE NATIONAL PETROLEUM RESERVE IN ALASKA CONDUCTED FROM 1978 THROUGH 1980

[Sources for resource assessments: a) November 1978 (Miller, B. and Bird, 1978); b) May 1979 (Miller, S., 1979); c) September 1979 (Bird, 1979); d) May 1980 (DOI/OMPRA, 1980)]

A. Distribution of Estimated Oil Resources in Place

- CONDITIONAL -

Probability that quantity is at least (percent)	November 1978 (billions bbls)	May 1979 (billions bbls)	September 1979 (billions bbls)	May 1980 (billions bbls)
95	0.65	1.58	0.99	0.82
90	0.86	2.26	1.61	1.27
75	1.40	3.73	3.10	2.44
50	2.44	6.24	5.57	4.69
25	4.24	10.05	9.50	7.95
10	6.63	15.59	14.62	12.35
5	8.55	20.56	18.43	15.42
1	12.80	38.26	26.17	22.96
Average	3.24	8.19	7.12	5.97

Table 3 (Cont.)

B. Distribution of Estimated Natural Gas Resources in Place

- CONDITIONAL -

Probability that quantity is at least (percent)	November 1978 (trillions of cubic feet)	May 1979 (trillions of cubic feet)	September 1979 (trillions of cubic feet)	May 1980 (trillions of cubic feet)
95	0.80	2.30	2.88	2.41
90	1.16	3.02	4.02	3.43
75	2.14	5.09	7.25	5.59
50	4.30	8.48	11.81	9.15
25	8.53	14.34	19.68	14.46
10	16.00	21.73	28.33	21.70
5	22.30	30.29	35.75	27.20
1	39.30	54.58	54.80	45.06
Average	7.04	11.50	14.90	11.31

How much did it come down?

Dr. MILLER. At the highest range the mean estimate of NPRA for oil was somewhere in the neighborhood of seven to eight billion barrels of oil and it now came down to about six. I cannot remember the ranges.

Mr. DICKS. What about the minimum?

Dr. MILLER. Minimums are running roughly the same. It had to do with the expansion and contraction of the probable range of what you have there. The reason it came down was that there was one well—maybe Mr. Gryc would like to respond to that—there was one well where the geologist predicted a major potential section and in the drilling of the well it was discovered that section does not exist.

Mr. DICKS. You spent $800 million to find out we don't have very much in that particular area?

Dr. MILLER. What we are saying is that in the $800 million you zeroed into a ballpark estimate of what the probability of petroleum occurrence might be.

INDUSTRY INTEREST IN NPRA

Mr. DICKS. If the prospects were higher, would not the bids on the leases have been higher?

Dr. MILLER. I cannot respond on that.

Mr. FREDERICK. That is hard to say in terms of what the bids would have been based on little knowledge versus a thorough study we have done.

We do know that there is significant industry interest in the area. I think we mentioned earlier that 16 companies had submitted interest in the NPRA and they are focusing in fairly closely on areas that look promising to us as well.

Mr. DICKS. Are the areas in which they are interested the same areas in which we were drilling?

Mr. FREDERICK. They are indeed interested in many of the areas we were drilling. I don't know whether we track it one for one but there is close correlation.

Mr. DEVINE. Some of the drilling identifies areas in which neither of us would be interested as a result of what we have learned. Drilling did guide good and bad areas.

Mr. DICKS. This is a very expensive program. It was controversial on this committee, to say the least.

The question I have is this: Did we really achieve anything of substance? I know you will tell me that we did. Would we have done better with the private sector had we not done this program at all? It is hindsight and Monday morning quarterbacking. I will take the rap for whatever you want to say I am suggesting.

Did this benefit the government in terms of the potential return in terms of these leases?

BENEFITS FROM DRILLING

Mr. FREDERICK. We think that there were some benefits, as you suggested we would say. We don't have any way of evaluating whether or not that has been worth $800 million or thereabouts. As a matter of fact, there have been benefits in other areas.

Geologically we know the area much better. We have been able to focus our attention on some particularly promising areas. I think it has been good as a guide for industry.

It has also enabled us to operate in an Arctic kind of environment and get a great deal of experience so we can answer a former question, that we think it is compatible between drilling and the environment. I think there has been a great deal of information obtained.

Mr. DICKS. So the record can AID possibly in convincing the American people that allowing some exploration on the Arctic might not be so harmful to the environment?

Mr. FREDERICK. Yes. That could be very important.

Mr. MCDADE. As a matter of fact, in the years I have been on this Subcommittee we used to get criticized for leasing properties in the gulf, for example, where they had not been drilling previously, where the Federal Government itself had no proprietary knowledge as to what the geological strata in the Gulf was. I can recollect that very well.

At least we have a profile of this area now.

Mr. FREDERICK. Yes. That is correct.

Mr. MCDADE. Even though you do that we had private bids of 1.4 billion.

Dr. MILLER. That is right.

Mr. MCDADE. We can do a lot of seismic work and we should have an informed opinion but until the well is down and made the strike we have done nothing.

Mr. FREDERICK. We believe a reasonable amount of dollars on the part of the Government is a fair investment. The question is, how far does one go?

Mr. DICKS. This committee voted overwhelmingly to go ahead with that. There has been interesting history developed.

The question I am looking at is future policy.

We are now in a new era. We don't have as much money. We cannot do everything we want to do.

To learn from the past and to try to perhaps make the right decisions in the future on the Arctic wildlife might be very germane. This history might be germane to that approach which has developed there.

Again there will be those who I think will say the government ought to drill.

The question then is what is the best way to approach it?

As I recall the testimony from last year the people from the private sector—and now we have our real Chairman—the private sector people came in and told us last year that they felt this leasing approach brings to bear the entire industry's resources, their skill, their judgment, and their abilities, and that is a better way to develop an area than to have the Federal Government do it.

Mr. FREDERICK. We agree.

Mr. DICKS. Do you agree or disagree?

Mr. FREDERICK. Fundamentally we would agree with that. What we would like to do, though, is to provide at least base-line information.

Mr. DICKS. Absolutely.

Mr. FREDERICK. We need fair knowledge of the area of the environment, know what to expect in terms of resources and return to the government, and also to give us a fair guide in terms of the kinds of things we ought to be looking for with respect to safe operations.

Mr. DICKS. I think that base-line information is most worthwhile. With that I will turn over the Chair.

EARTHQUAKE ACTIVITY AT MOUNT ST. HELENS

Mr. AUCOIN. Before we leave the Mount St. Helens subject I want to ask one last question. It would be wrong if we did not ask a question dealing with the related earthquake connection to the volcano. I am concerned about the potential for future and different kinds of earthquake activity.

Mr. FREDERICK. Yes, sir.

Mr. AUCOIN. Recently, just a few days ago, there was a substantial earthquake felt from Seattle to Portland and points farther south.

Was there anything unusual about that earthquake which might suggest a different pattern of fault lines connected to or separate from the St. Helens eruption?

Mr. FREDERICK. Let me get one of our experts, Dr. Robert Wesson, our Assistant Director for Research and formerly Head of the Earthquake Program.

Dr. WESSON. That is a difficult question to answer.

Mr. YATES. You are looking for a chart. Do you want one?

Dr. WESSON. That is such a difficult question, that we don't even have a chart for it.

We have been conducting for several years investigations aimed at refining our understanding of earthquake potential throughout the seismically active areas of the country. We have done a lot of work in California and we think we understand the origin of earthquakes in California. We have the San Andreas fault and we have other faults we understand well.

Similarly we understand the origin of earthquakes in Alaska where we have this area diving down between the North American plate.

Mr. YATES. What about Oregon?

Dr. WESSON. In Washington-Oregon we have been working hard. We don't have a satisfactory understanding of the process that gives rise to earthquakes.

Speaking in plate-tectonic terms, there was an old plate which is going down very slowly and gives rise to the volcanic eruptions.

You may know that there have been large earthquakes in the Puget Sound area in 1949 and 1965, if I am not mistaken. The 1949 earthquake particularly caused significant damage, and based on that earthquake we consider this to be one of the danger zones in the United States, one of the zones of highest risk.

Mr. YATES. Is this Puget Sound?

Dr. WESSON. The Puget Sound area, right.

Mr. AUCOIN. Is it the highest risk area in the United States?

Dr. WESSON. Yes. That is correct.

Mr. YATES. More than California?

Dr. WESSON. Not more than California. The areas where we have greatest risk of earthquakes are really in Alaska, the greatest potential for earthquakes. Of course, there we don't have the population or development.

In California we have the second greatest risk of earthquakes and greatest overall risk because we have development.

We expect earthquakes in this region will be smaller than, say, the 1906 or 1957, great earthquakes in California, but the earthquake in 1949 was, I believe, about a magnitude of seven.

Another significant difference between Washington State and California is that at least in 1949 and in 1965 the earthquakes were deeper. The earthquakes in California tend to be on the order of six miles deep. The earthquakes in Washington State were on the order of 20 miles deep or more, so they tend to have more widespread effects but do not have quite such a strong shaking.

Mr. YATES. How do you account for Mount St. Helens, then?

Dr. WESSON. This is part of a complicated picture which I do not have, nor do I believe any earth scientist has, a clear understanding of the origin of these deep earthquakes and their relation to the particular earthquake you mentioned.

Earthquakes at Mount St. Helens are just beneath the cone of the volcano and up into the cone. Therefore, earthquakes that preceded the eruption which began on March 20 of last year were very shallow, on the order of two or three miles and came right up into the cone.

The earthquake you referred to, which would have been about north of Mount St. Helens, toward Mount Ranier.

Mr. AUCOIN. This was not seismic activity around Mount St. Helens. Last week we had a substantial earthquake which was felt as far north as Seattle and for a considerable period of time in Portland.

What I want to know, at a time when people are making decisions about location of nuclear plants, whether there is any reason at this point to be concerned that there may be some fundamental change based on the activity of Mount St. Helens in fault lines which might suggest additional and different earthquake activity. Is there any reason to believe that may be so?

Dr. WESSON. First it is a reasonable hypothesis that earthquakes and volcanic processes are related in some way and that the eruption of Mount St. Helens and occurrence of some earthquakes we have seen in California over the last several years, or in the future in Washington State, may be related in some way.

At the same time I think it is unreasonable to expect a change in the regions or a change in the nature of the process.

In other words, based on the geologic structure, geologic mapping, and history of earthquakes in Washington and Oregon we believe we have a pretty good idea of where the most hazardous zones will be. We don't believe that impression would change significantly because of Mount St. Helens.

We would anticipate there will be earthquakes generally in the Puget Sound area and possibly extending down toward Mount St. Helens, but frankly from everything we know now the seismic hazard is much greater in the Puget Sound area than it is in Oregon.

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Mr. AuCoin. This latest earthquake does not seem to change that pattern in your judgment?

Dr. Wesson. As far as we know it does not.

EARTHQUAKE POTENTIAL/NUCLEAR REACTOR SITING

Mr. Dicks. Is my understanding that the question of the seismic potential of an area and the earthquake potential is taken into account when siting decisions are made for nuclear reactors?

Dr. Wesson. Absolutely. That is one of the key factors in siting a plant throughout the United States. That is the Nuclear Regulatory Commission's business. We have interacted closely with them as a consultant on a number of sites.

Very frankly, the seismic issue has become a very important one, particularly in the northern Puget Sound area where certain sites were under consideration.

Mr. Yates. In response to his question, what is happening to the Diablo Canyon in California?

Dr. Wesson. I will yield to Jim Devine.

Mr. Frederick. I have a statement on the general subject.

Mr. Yates. We don't want to lose our scientist.

Mr. Dicks. If we may finish Mount St. Helens.

Has anything occurred at Mount St. Helens in this earthquake area, with the volcano and earthquakes which have occurred, which has changed your view about the areas in the State where nuclear power plants are being sited?

Mr. Devine. Yes. That is right.

Mr. AuCoin. That is the thrust of my question.

Mr. Dicks. We didn't get to that.

Mr. Devine. There are no changes in earthquake potential as a result of the Mount St. Helens eruption.

Mr. AuCoin. Notwithstanding the earthquake of last week?

Mr. Devine. That is right. We anticipated quakes of that type. Indeed we would have required they be considered in any licensing of the area.

Mr. Dicks. Does Mount St. Helens have any impact when siting nuclear power plants?

ASH PROBLEM

Mr. Devine. There is some impact on how one handles the ash—not the seismic end but the ash.

We have advised NRC of the need to require rigid design accommodations for ash. The fact was that until this Mount St. Helens the probability——

Mr. Dicks. You are saying you have to protect your ash.

Dr. Wesson. In our discussions with the NRC applicants we repeatedly stress the need to make provision for ash that might fall in cooling ponds.

Mr. Dicks. I will bet some people in the private sector thought that was foolish.

Mr. Devine. We were called strange names for some of those suggestions. The probability of ash falling now is higher than we had predicted before. It was high enough before to require it be accommodated, but in fact now we expect it more often.

Mr. DICKS. Can you protect a reactor against significant ash fallout?

Mr. DEVINE. That is an engineering question where I am not an expert. I am told we can.

Mr. DICKS. You can?

Mr. DEVINE. That is what I am told.

Mr. DICKS. That is the view of the engineers?

Mr. DEVINE. Plants yet to be constructed call for accommodating large amounts of ash.

Mr. DICKS. There are several reactors being built in that vicinity and some in eastern Washington where the flow of the ash is basically gone.

Mr. DEVINE. There have been extensive discussions.

Mr. AUCOIN. What about the Trojan plant?

Mr. DEVINE. It was discussed, again the probability of ash falling on it is now greater than before.

Mr. AUCOIN. How can it deal with that? Is it equipped?

Mr. DEVINE. At the time the license was discussed, arguments put forth in an engineering sense indicated it was capable of responding to it. It is now being reviewed by NRC to be sure that is still the case.

Mr. DICKS. How about hydroelectric dams? Have they a problem with ash?

Mr. DEVINE. Not significantly. The greatest problem would be, is in the case of the two ponds on the southside of St. Helens, the possibility of it being overtopped by mud and debris flowing into it. Ash settling on it is not a significant problem.

DIABLO CANYON NUCLEAR PLANT

Mr. YATES. There was a question we checked into over the years respecting the nuclear plant at Diablo Canyon. It was thought that the engineering standards under which the plant was originally built did not reflect adequate safeguards in the event of an earthquake, and there was some concern as to what would happen inasmuch as it was fairly close to the San Andreas fault.

Do you want to tell us the situation there now?

Mr. DEVINE. The history of the licensing procedure for Diablo goes roughly like this.

The threat from earthquakes, very large earthquakes on the San Andreas fault and other faults, was assessed at the time. In my judgment and in the judgment of the hearing boards, they were adequate. The problem resulted from an offshore fault which was not recognized at the time of the construction permit.

After the construction permit was issued, as a result of increased technology and increased interest in oil, there was exploration offshore, seismic exploration, which indicated the existence of a major fault which was not recognized at the construction time.

Mr. YATES. A major fault?

Mr. DEVINE. Major fault structure.

Mr. YATES. That was not recognized at the time of construction. Once it was recognized it was entered into the licensing process, particularly for the operating license, and the applicant was required to demonstrate to the satisfaction of the Nuclear Regulatory Commission that there were enough safety margins or there were

redesigns that would be implemented, and indeed everybody implemented, to accommodate this new offshore seismic threat.

Mr. YATES. That leads to another question. Has it been accommodated to the satisfaction of GS?

Mr. DEVINE. Yes. That is correct.

Mr. YATES. Making the structure impervious to the possibility of fracturing in the event of earthquakes.

Mr. DEVINE. We are not advisors with regard to the engineering aspects. The ground motion values we would project from such an earthquake threat have been those used by the engineers to do their correction.

OFFSHORE LEASING

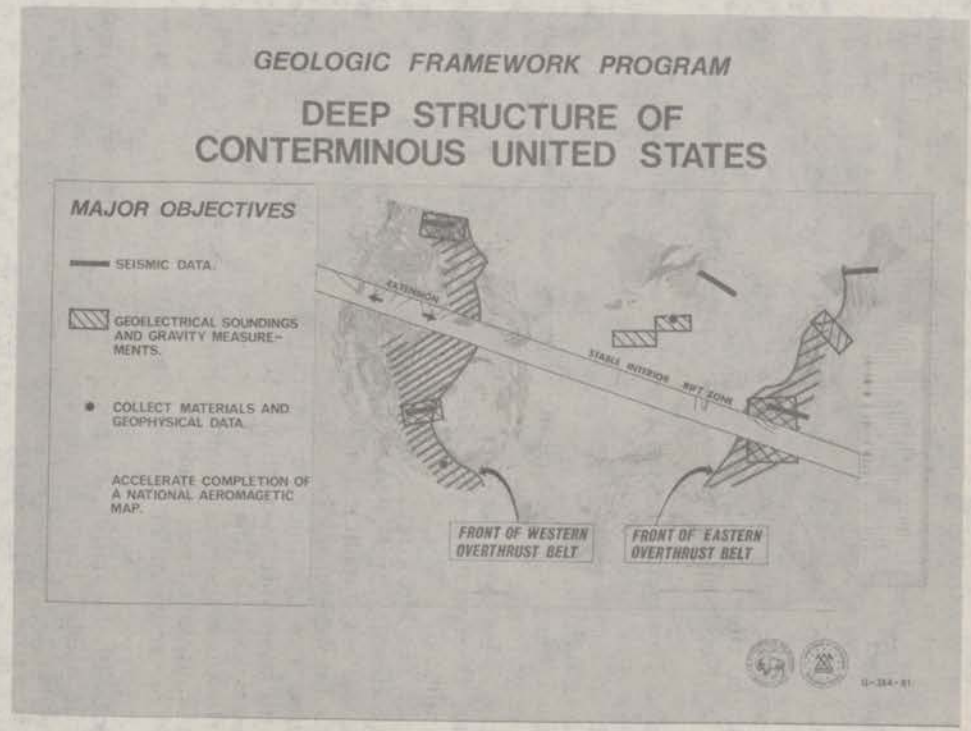
Mr. YATES. I move from that but still staying with the fault, moving from the nuclear plant to the recent decision by the Secretary of the Interior to authorize leasing offshore of the companies of California and going all the way north.

Mr. DEVINE. All right.

Mr. YATES. I don't know whether this is the map you want. Obviously we cannot understand what you are saying without charts.

Do any of your charts show the faults offshore?

[The chart follows:]



The tectonic map and generalized structure section of Conterminous United States illustrates the distribution and deduced configuration of selected geologic structural units of the continental crust. The exhibit shows sites proposed for study of deep crustal structure using seismic reflection surveys (heavy lines), geoelectrical and gravity soundings (black ruling), and deep drill hole (red dots) test methods. A magnetic anomaly map will be completed for the entire map area.

Mr. FREDERICK. I don't think we have a chart specifically showing the fault but one that gets close.

Mr. YATES. That should be taken together with the other chart. This shows the California companies' line where leasing and drilling are authorized?

Mr. DEVINE. Part of it.

Mr. YATES. Does the one you just had on the easle show that area?

Mr. DEVINE. Yes, but not the faults.

[Discussion off the record.]

Mr. YATES. Now we have the California-Portland-Washington companies.

Dr. WESSON. This would be San Francisco and Portland and Los Angeles.

Mr. YATES. Where is Diablo Canyon?

Dr. WESSON. Right here.

Mr. YATES. Where was the drilling showing existence of a fault off Diablo Canyon?

Dr. WESSON. Seismic exploration

Mr. YATES. Does that mean there is another fault there other than San Andreas?

Mr. DEVINE. Yes, sir. That is correct.

Mr. YATES. How far up the coast does that fault extend?

Mr. DEVINE. That is a subject of considerable debate.

Mr. YATES. Do we know?

Mr. DEVINE. The maximum one could conceivably extend it, if you make all assumptions required to get there, would have it actually hook up with the San Andreas fault just west of San Francisco. However, there is considerable geologic evidence to challenge that assumption I just made.

One could project parallel and complementary faults all the way to San Francisco.

Mr. YATES. Should drilling be permitted in an area where you know a fault exists? I am thinking of the Santa Barbara spill. Didn't somebody say they broke through the surface in some way? Drilling breaks through the surface obviously.

Dr. WESSON. This is the best map we have. If you look closely at California you will see there is a whole suite of northwest trending sub-parallel kinds of faults. The San Andreas fault is the principal fault but there are many other splay or subsidiary faults which trend northwestward parallel to the fault and parallel to the coastline.

Many of those have some secondary potential for earthquakes as well as the San Andreas fault.

The fault Jim Devine referred to is offshore and just another one of those faults which unfortunately happen to be underwater.

The whole development of the geologic structure in California, development of the basins into which petroleum and gas may be accumulated, are a result of those same faulting kinds of processes.

Therefore, as far as we know, and without indicating exactly where these additional areas which the Secretary added back into the lease sale in 1953, there is nothing more hazardous associated with development of any of those areas than in the Santa Barbara

channel where we already are able to conduct petroleum development in a reasonable and safe way.

Mr. YATES. But you had a leak there, did you not? Apparently you had trouble stopping it.

Dr. WESSON. The leak at Santa Barbara had nothing to do with an earthquake fault. In effect we had very shallow oil and gas at high pressure. This material came up through its own fracture to the surface.

Mr. YATES. The drilling did not affect the fracture?

Dr. WESSON. We drilled a hole from the bottom of the ocean to some great depth. We found oil and gas at high pressure there. This material came back along the drill hole and then got out of the drill hole and caused a new fracture from the near surface up to the surface at the bottom of the seabed.

It was a typical kind of oil exploration problem which you might find in any province irrespective of the existence of earthquake faults.

Mr. DICKS. Puget Sound is very special to some of us in the State of Washington. Have you ever done any seismic work in terms of oil exploration there?

Dr. WESSON. In Puget Sound?

Mr. DICKS. Yes.

Dr. WESSON. I don't think so.

Mr. DEVINE. Seismic profiles but not specifically for oil exploration.

Mr. DICKS. Gas?

Mr. DEVINE. To learn the structure.

Mr. DICKS. Are you just learning the structure?

Mr. DEVINE. Yes, sir. That is correct.

Mr. FREDERICK. One comment if I may on the offshore California. The Secretary's decision at this point is a decision to announce the intent for sale. That is to allow additional comment and additional evaluation.

Second, I might add that the Geological Survey has looked specifically at all of those basins and all of those tracts. We believe with the appropriate stipulations that development can occur safely.

Mr. DEVINE. I have one other comment concerning Hosgri Fault.

Mr. YATES. You believe it can be conducted safely. On what is that based?

Mr. FREDERICK. Our analysis of the area, the kinds of looks we made already, the additional collection of information that our Conservation Division makes prior to a lease sale, and general analysis of what the industry can do in accounting for the types of events likely to occur.

Mr. YATES. You have this fault offshore. Has this fault ever erupted into an earthquake or tidal wave?

Mr. DEVINE. Seismic history along that fault shows a very minimal amount of activity in modern times. It is in no way similar to the San Andreas.

In fact, the reason the fault was not recognized prior to 1971 was that there was no seismic activity on it to help guide us that it could do that.

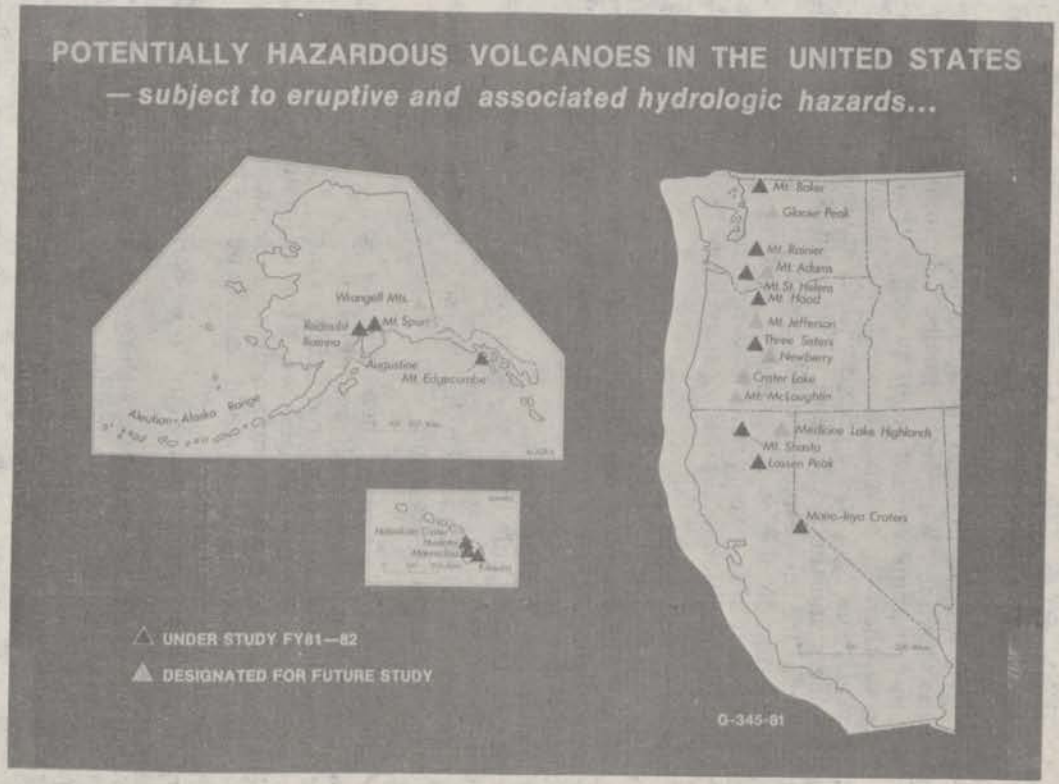
The reason it is considered as a capable fault is the conservative manner in which NRC requires licensing of a nuclear facility. It is non-active historically. It is only a geologic evidence which shows it is there.

SEISMIC NETWORKS AT MOUNTS RANIER AND HOOD

Mr. DICKS. Why have additional seismic networks been installed on Mount Ranier and Mount Hood?

Mr. FREDERICK. Let me respond in general. We think that those are areas where we ought to pay attention. If you recall on the board here, future activities in the Cascade area shows those are potentially ones we should be looking at. We are increasing the number of seismic stations to better cover the area.

[The chart follows:]



Maps showing active and potentially active volcanoes in the United States and locations of current and future investigations by the Geological Survey.

Dr. WESSON. We had directed development of additional seismic networks in this range for two reasons before the eruption. First to develop a better understanding and do overall earthquake patterns as related to our previous discussion.

Secondly, we wanted to begin to understand the geothermal potential of the Cascades. We wanted particularly to understand how these volcanic systems worked so in principle they might be exploited for geothermal power. The work on Mount Hood, which began several years ago, was directed with that objective in mind, to try to understand the system and what might be learned which might be useful for the development of geothermal power.

Since the eruption of Mount St. Helens and supplemental funds which were received last year, those networks have been improved, and given the additional charge of considering volcanic hazard.

VOLCANIC HAZARD FUNDING

Mr. DICKS. Are the funds included in the Carter budget for this program sufficient to carry out the responsibilities outlined for the Geological Survey?

Mr. FREDERICK. We think so.

Mr. DICKS. Do you anticipate any changes by the Reagan administration in that level of funding?

Mr. FREDERICK. This question has to do with the earthquake and/or volcano hazards program?

Mr. DICKS. Yes.

Mr. FREDERICK. We expect there will be some review of the overall program as part of the Reagan budget.

Mr. DICKS. That sounds like a reduction to me.

Mr. FREDERICK. We are not sure what the ultimate decision will be. There could be some reduction in the Earthquake Hazards Program as an example. There could be a reduction in the increase for the fiscal year 1982 request.

Mr. DICKS. Do you think you ought to be doing anything else up there that we are not doing?

Mr. FREDERICK. There are always things that we could do. In the budget climate we are in and considering the overall priorities we are probably doing a reasonable job.

Mr. DICKS. We have a live and active volcano. Should we be doing more?

Mr. FREDERICK. I still think we are in reasonable shape in that regard. You can put in additional networks. You can look at the hazards more quickly as far as other volcanos are concerned. We can have a reasonably viable scientific program.

Mr. DICKS. In your personal professional opinion, other than as the Acting Director, do you feel this program is adequate?

Mr. FREDERICK. It has been expanded fairly quickly beginning last year with the fiscal year 1981 amendment and minimum additional funds this year. We are in pretty good shape for the next year.

Mr. DICKS. You are involved in monitoring. One of the questions is being able to go in and logging the timber which has been blown down by the volcano. There is private timber at stake, Washington State timber at stake, and Forest Service timber at stake.

Do you think it is safe for people to be in that area now, taking those fallen trees down and taking them out?

Mr. FREDERICK. I think we are in a reasonable position to suggest that there are indeed areas for which safe logging operations can occur. We are constantly in communication with the Forest Service to let them know everything we know.

As a matter of fact, the activities have increased of late.

ENVIRONMENTAL IMPACT STATEMENT

Mr. DICKS. The Forest Service, I am told, cannot proceed because it has to write an environmental impact statement.

Mr. FREDERICK. I think they have already prepared that. It is now available.

Mr. DICKS. Does that make sense? Here you have a volcano knocking down all the trees. The potential for infestation and forest fires and everything else which occurs when trees are down exist, and now we have to write an environmental impact statement? Does that make sense to you as a government official?

Mr. FREDERICK. It makes reasonable sense to consider the impact on the environment. I don't know how much one has to do to satisfy that requirement.

Mr. DICKS. Do you think there could be a negative declaration on this one?

Mr. FREDERICK. I don't think so. I think within reason they will be able to go in and log.

There may be some geologically-significant areas which are designated which will be preserved.

Mr. DICKS. What do you mean geologically significant?

Mr. FREDERICK. The devastated area around the volcano itself.

Mr. DICKS. You want to leave trees there, too?

Mr. FREDERICK. You would under those circumstances.

Mr. DICKS. Why, because it is dangerous?

Mr. FREDERICK. Because of the evidence of the event and the geologic significance of the area.

Mr. DICKS. Do you think it is dangerous to leave the trees there from the standpoint of forest fires and disease?

Mr. FREDERICK. There could be some danger. However, a major percentage of the fallen timber will be extracted.

Mr. YATES. I don't understand that answer. I would have thought you would have wanted to clear the area because of the potential hazards Mr. Dicks has explained and also because of the appearance. I would think you would want to plant new front.

Dr. WESSON. The Forest Service has undertaken a process of considering various alternatives for preserving lands as they were after May 18 to show the natural kind of forest returning versus the immediate extraction of the logs. This environmental impact statement to which you referred lays out several alternatives for different courses, for different parcels of land, some going immediately toward the retrieval of the logs, some which might be preserved indefinitely as an effect on a national monument.

Mr. DICKS. It sounds as though it would be a national hazard and not a monument.

Dr. WESSON. You have to ask the Forest Service that question.

Mr. FREDERICK. Their analysis took that factor into account. I believe they will recommend at least a small percentage of the area be maintained as Dr. Wesson has described.

Mr. YATES. They are increasing the budget for fire protection.

Mr. DICKS. I think this idea of the naturalists exists here. They want to show the event as it occurred. They want a history of this so people can look at the fallen trees and understand the devastation. Isn't that what it is basically all about?

Mr. YATES. Is this a profile view?

Dr. WESSON. That picture was taken by a Geological Survey employee on May 18 and given to the Forest Service. I think you might have a copy of a similar picture.

Mr. YATES. I have a picture I got from Senator Magnuson which showed the breakout and blowout. It is an incredible picture. It takes place with the first couple of nuclear explosions.

Have you concluded?

Mr. DICKS. Yes.

Mr. YATES. Suppose we come back at 1:30. Let me ask one more question.

VOLCANIC/EARTHQUAKE RELATIONSHIPS

Is there a relationship between what happened at Mount St. Helens and what is likely to happen at Mount Hood and Mount Ranier?

Dr. WESSON. In the past, judging from what limited historical records we have considering this area has been recently developed, and what understanding we have of the geologic past, there is some tendency for episodes of volcanic activity to come over the Pacific Northwest in which you might have more than one volcano erupting. In fact, there are Indian legends about Mount Hood and Mount St. Helens throwing rocks across the river at one another, things like this, not particularly strong evidence that we should anticipate an immediate threat.

This is one of the principal concerns we have and why we are undertaking a rather comprehensive program of monitoring the entire range.

Mr. YATES. You have a chart there showing the monitoring you are doing in California?

Mr. DEVINE. This is earthquake monitoring and not volcano monitoring.

Dr. WESSON. We don't have a map showing seismic stations throughout the Washington-Oregon area. I would estimate that would be on the order of 100 stations before the end of the year. Is that correct?

Dr. PECK. That is right.

Dr. WESSON. We will have a sizable network of seismic stations.

Mr. YATES. There is a relationship between earthquakes and eruptions?

Mr. DEVINE. Yes. That is correct.

Mr. YATES. Do they occur for the same reason?

Mr. DEVINE. They relate to similar sources. Those are the crustal movements of the Earth.

Dr. WESSON. They are related in many ways. Earthquakes are slippages along faults. If you have faults around a volcano and if

these faults are stressed, as you have lava coming up through the volcanic cone, these stresses can be relieved through earthquakes. This is why characteristically we see swarms of earthquakes before volcanic eruptions as we did last year before the eruption of Mount St. Helens.

In a broader sense, plate-tectonics, responsible for big earthquakes along the Aleutians and Southern California, and also responsible for the origin of the volcano as they are related on a broad scale.

The question Earth scientists are asking themselves now is whether there is a temporal relationship between volcanic eruptions and large earthquakes. In other words, do you have something equivalent to a cold front sweeping through an area?

We have seen many anomalous things in Southern California over the last several years at the same time Mount St. Helens erupted. Are these two related in some way? We don't have an answer to that question although it is a reasonable hypothesis and one we are testing.

Mr. YATES. Let us recess until 1:30.

[A recess was taken.]

EARTHQUAKE PREDICTIONS OF DR. BRADY

Mr. YATES. We will continue our discussion of the earthquakes. Can you tell us about the earthquake prediction of Dr. Brian Brady of the Bureau of Mines?

Mr. FREDERICK. Yes, sir, I think we can tell you about that. Let me call on Dr. Wesson again because he has been involved.

Mr. YATES. Was he involved in that?

Mr. FREDERICK. Yes. That is correct.

Mr. YATES. Was he pro or con?

Mr. FREDERICK. He was involved in the evaluation. I think he was kind of neutral.

As you know, Mr. Chairman, we did provide assistance to the Government of Peru at the request of the Government of Peru and subsequently at the request of the U.S. State Department we called together an Earthquake Prediction Advisory Committee to evaluate the evidence by Mr. Brady, and Rob participated in that evaluation so we will let him speak to that.

Mr. YATES. Dr. Wesson.

Dr. WESSON. Mr. Chairman, the earthquake prediction that Dr. Brady made for Peru was based upon a theory which he has developed over the last several years. His prediction originally came to light about three or four years ago and was published in a journal called Pure and Applied Geophysics and subsequently has been revised as his so-called theory evolved.

I should begin by saying that Dr. Brady is an Earth scientist. He is classified as a physicist at the Bureau of Mines, as I understand it, and is involved in experiments on rock mechanics to how as rocks break and have been determined by laboratory measurements and how mine falls and rock bursts can be predicted by using seismic monitoring. Based on his rock mechanics experiments and observations in mines he developed a theory of rock failure which he then extrapolated to the coast of Peru on a scale

of thousands of kilometers so we have a difference of ten of orders of magnitude.

Now I must say that over these last several years on which Dr. Brady has developed this theory he has published some papers. The complete theory for the prediction of Peru has not been published. The theory that has been published has not been warmly received by other workers in the field of rock mechanics and the theory of rock failure. They felt his experiments were interesting but they felt that his theory was not really supported by the experiments.

As early as May of 1979 we had received inquiries from the geophysicists in Peru inquiring about this prediction. It had already received some public attention in Peru. At that time in May 1979 we organized a seminar in Golden, Colorado, at which Dr. Brady presented his ideas. We had workers from our group in Menlo Park. We had some people from Peru who were interested in the theory and so on. Frankly the seminar developed in a rather fractious manner.

Mr. YATES. Did you say fractured?

Dr. WESSON. Not fractured, fractious.

The other specialists in the field of rock mechanics did not feel that Dr. Brady's conclusions were supported by his observations but the result was that we encouraged him very much to complete his interpretations and to publish his results in the open literature so they would be evaluated by the wide community of scientists. Unfortunately, he has not done that for whatever reason.

The situation then to some extent festered in that there was continuing attention to the problem given in Peru culminating this fall. There was a large meeting in Argentina on the earthquake problems generally in Latin America. At this meeting Dr. Brady gave an extensive presentation of his prediction and his ideas.

Following that on his return to the United States, accompanied by one person from the Survey, he met at the suggestion of our Embassy in Lima which unfortunately at that time was right between Ambassadors. The previous Ambassador had just left and the new Ambassador had not yet come. In that interregnum Dr. Brady met with some high officials of the Peruvian Government, I think the President, and presented this prediction and the theory to him.

The President of Peru, as I understand it, was rightfully concerned. Here these American scientists were giving him a catastrophic sort of prediction and he wanted to know what the United States was going to do about it. Subsequent to that time there were discussions involving the State Department, both the Peru desk and AID, the Geological Survey and so on as to what would be the appropriate course of action.

The Geological Survey in several communications had indicated to the State Department that as far as we were concerned Peru was a highly seismic country, there were continuing earthquakes, but from what we had seen to date there was not any reason to believe that Dr. Brady's prediction should warrant any extraordinary action on their part to prepare for an earthquake.

NATIONAL EARTHQUAKE PREDICTION EVALUATION COUNCIL

Subsequent to this formal inquiry from the Peruvian Government about the United States intentions, we offered to convene the National Earthquake Prediction Evaluation Council. This was set up under the Advisory Committee Act and at least in part stimulated by the Earthquake Hazard Reduction Act of 1977. When we offered to do that the Peruvians enthusiastically asked that we do so. In late January of this year we convened that group.

The National Earthquake Prediction Evaluation Council is set up such that it has a minority of USGS scientists involved in the earthquake prediction and a majority of non-USGS people involved in the prediction study. The chairman is Dr. Clarence Allen from the California Institute of Technology and other members include Dr. Lynn Sykes from Lamont-Doherty Geological Observatory of Columbia and Dr. Thomas McEvilly of the University of California at Berkeley and some others who escape me at this moment. Also, Dr. K. Aki from MIT.

These people were brought together in Golden, Colorado. Unfortunately, Dr. Aki was in France and was unable to make it but Dr. McEvilly and Dr. Allen were there and Dr. Brady. Dr. Brady and Dr. Spence from the Geological Survey, who had been doing some analysis of seismictic data to support the prediction, or at least to answer questions about the prediction, were involved and were asked to come and to present their prediction. In fact, they were asked to submit any kind of written backup or any documents which tended to give the background for this prediction in advance.

At the end of January this meeting took place. The National Earthquake Prediction Evaluation Council asked that Dr. James Rice from Brown University who is an expert in the fracture of rocks be present as a consultant. This meeting lasted two days. The first day presentations were made by Dr. Brady and Dr. Spence about their ideas about the prediction and the theory. The first half day of the second day consisted basically of questions by the panel and the final half day was the evaluation or closed session in which the panel discussed the information they had heard.

Following that, the panel drafted a statement which, in essence, concluded that the panel was unconvinced by the arguments that had been presented by Dr. Brady. In fact we could supply a copy of that statement to you if you would be interested. The panel indicated that they were somewhat displeased that a prediction of this sort, based on what they considered speculative data, had received such widespread public attention and had caused the people and Government of Peru such difficulties. In fact, the panel indicated in their statement that no individual member of the panel would be hesitant to be present in Peru at the time of the predicted earthquakes.

Before this statement was released publicly it was hand delivered by the desk officer from the State Department to the Ambassador from Peru in Washington. He then, after communicating with Peru, gave us the go ahead to release the statement publicly to the media here and we did that the following morning.

I should add one extra element. The way this National Earthquake Prediction Evaluation Council is set up it advises the Director of the Geological Survey. After receiving this rather negative

evaluation the Geological Survey concurred with it and transmitted it on to the Government of Peru. In essence the National Earthquake Prediction Evaluation Council concluded that this prediction did not represent any increment to the already significant earthquake hazard in Peru and advised the government of Peru that although they should be concerned about the continuing earthquake hazard, they should not take any particular action.

Mr. YATES. Thank you.

WATER PROGRAM

Mr. Frederick, the headlines of News Week of February 23 were, "Are We Running Out of Water?" Isn't that the province of the Geologic Survey?

Mr. FREDERICK. Well, we do have a distinct responsibility in that area, Mr. Chairman. As you know very well, we have water-related responsibilities in every State of the Union. We have a significant number of data collection stations all over the country for both water quality and quantity and we have a substantial water program. We are prepared to speak on the subject of the drought and where we stand at the moment if you are interested.

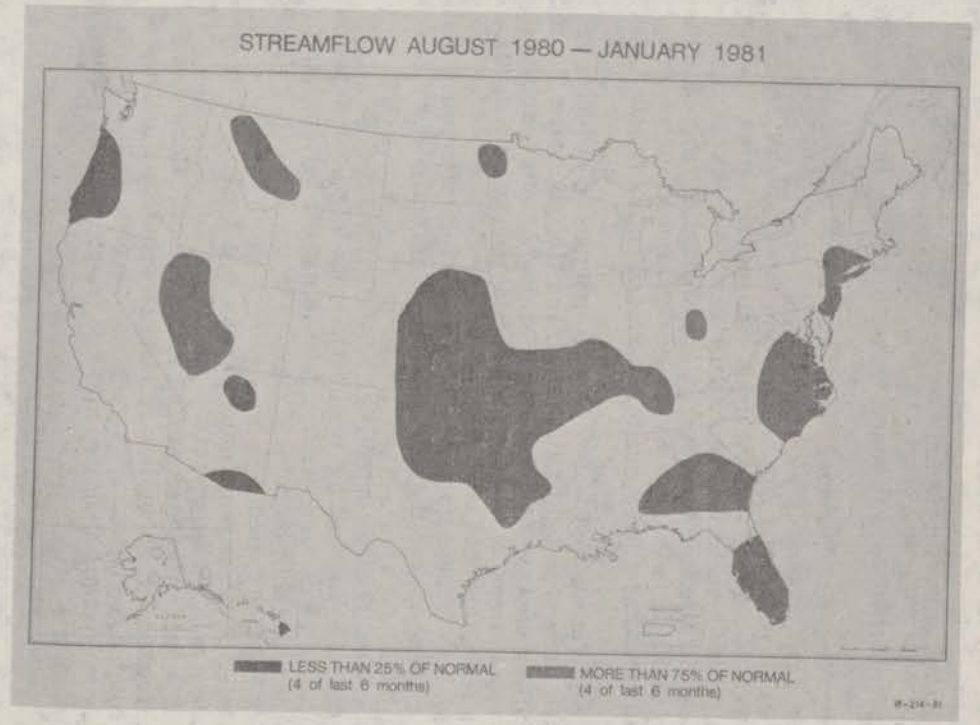
Mr. YATES. Yes, we are interested. I think that there is not a more important subject or problem with which the country will have to deal than the problem of water. Of course, we have been talking about this for a number of years and it keeps getting worse, does it not?

Mr. FREDERICK. Well, in certain areas it does not. In some areas it may not be quite so severe. Mr. Cohen will discuss the subject with you.

Mr. YATES. Mr. Cohen, that is a very good looking chart. It looks like one by John Miro. Is it?

[The chart follows:]

77-933 O—81——24



Persistent pockets of below normal streamflow (less than 25 percent of normal record) have plagued portions of the United States for 4 of the last 6 months. The eastern half of the United States as well as a small area of the midwest were hard hit by the prolonged dry spell.

Mr. COHEN. No, sir. It is not.

Mr. YATES. All right. I trust that the areas of red are significant. What do they indicate, the stream flow?

Mr. COHEN. Yes. That is correct.

Mr. YATES. Is there a difference between stream flow and an aquifer?

Mr. COHEN. Yes, Mr. Chairman. That is correct.

Mr. YATES. How do they relate?

Mr. COHEN. In general there is an overall relationship in most areas between the ground water body and an adjoining surface water body but as a general statement in response to either significant increases in precipitation over a long period of time or deficiencies, drought, surface water bodies respond much more rapidly. Ground water bodies respond much more slowly and are much less amplified.

What we see here is one way of depicting emissions which have been referred to as a drought situation in the United States. There are any number of ways of describing a drought, but in the Geological Survey's areas of responsibility and purview we focused mainly on stream flow and on ground water levels.

Mr. YATES. May I ask a question?. Your map indicates in the red areas where there is less than 25 percent of normal stream flow, correct?

Mr. COHEN. Yes. That is correct.

Mr. YATES. It is interesting to me that one of those areas is almost the entire peninsula—well, it is certainly the bottom half or more of the peninsula in Florida.

Mr. COHEN. That is correct.

Mr. YATES. And more and more people are coming in there.

Mr. COHEN. Yes. That is correct.

Mr. YATES. I think they are getting five more new Congressmen in the redistricting which indicates that tremendous numbers of people are coming in there.

What does your chart indicate, that the people are not going to have any water?

DROUGHT SITUATION

Mr. COHEN. Well, droughts, as you know, sir, occur with some degree of frequency. The last time we talked about droughts with any degree of serious concern before this committee was the drought of 1977. There was a great deal of discussion and a number of significant actions taken by this committee. One of the things that we thought that it might be useful to do was to try to describe the present degree of precipitation just to give you some sense as to what we are looking at now and what we looked at then.

Now we have somewhere on the order of 9,000 continuously reporting gauging stations around the United States monitoring and evaluating the stream flow. We publish those records on a monthly basis. In the 1977 drought we were doing it on a daily basis with one of our people headquartered at the White House. With respect to the present drought we are upgrading on a biweekly basis.

Mr. MURTHA. Why is there the need to do it so often?

Mr. COHEN. In 1977 it was very severe which involved public water supplies. It involved decisions on a daily basis regarding restrictions on water for domestic purposes. Decisions were made on almost real-time basis.

Mr. MURTHA. In relation to what the Chairman asked concerning the red areas is it the result of increased population?

Mr. COHEN. No. That is incorrect.

Mr. MURTHA. So use by industry or population does not have anything to do with this.?

Mr. COHEN. At the scale we are looking at, we are looking at the United States over an area of several square feet. You do not see the impacts in this particular map. You do not see the impacts of man's effects on the hydrological environment.

Now in order to convey the message as effectively as we could, we took the maps of the previous six months and said if stream flow was 25 percent or less than normal in four out of those six months we would color that red for you. So this gives you a sense of what has happened in the past six months. The fact that we had to use a technique of four out of the last six months means to convey to you that things change very rapidly from month to month. If I were to choose any one month, the picture would be considerably different. Depicting it this way, the message is that we have had in the past six months significant "drought" conditions as measured by an abnormally low stream flow scattered throughout the United States, and that is important as I have read in the media and I assume you have read in the media.

Our climatologist and meteorologist colleagues tell us that there have been shifts and that these shifts have been known to occur in the past in the jet streams deflecting the storm pattern north of the United States. The general pattern that you see here reflects those shifts.

Another perspective that I can give you is if we look at what has happened in the past 12 months, the calendar year, we would start out by telling you about abnormally high stream flow, conditions we were faced with in the beginning of 1980 of extreme flooding in California and Arizona. As a matter of fact, this committee supported and was instrumental in a supplemental for us to go ahead and study this abnormally high stream flow and flooding. Things were fairly normal for the remaining six months of the year. We had read of high precipitation but nothing extraordinary.

The first significant event which had widespread extent and was covered in the media was drought conditions throughout the central portion of the United States from the Canadian border to the Texas border. That was reflected not in deficient stream flow, but because of the nature of the stream flow patterns, we see that as a result of snow melt runoff. What we were seeing was deficient precipitation—deficient precipitation and very high temperatures. There was a severe agricultural drought during the summer. That deficient precipitaiton carried through so that in August we began to see what the farmers had been seeing. There was deficient stream flow in August, and that continued throughout the year.

Mr. MURTHA. Would you explain further, from a technical standpoint, if you don't have more stream flow, then what is the problem? The precipitation in the winter——

Mr. COHEN. In the summer time the agricultural drought, that I made reference to, largely impacted those agricultural activities that did not rely upon supplemental irrigation.

Mr. YATES. In other words, farmers need rain.

Mr. COHEN. They do not use artificial irrigation; they survive on precipitation.

Mr. MURTHA. You are saying you didn't get any rain during this period, the stream stayed the same because the snow was melting?

Mr. COHEN. That is precisely what I am saying.

Mr. YATES. All right.

Mr. COHEN. Again I would like to call to your attention that we are talking about the percentage of normal. In the summer time one does not get very much stream flow to begin with. It was normal that we expect this every summer. We would expect it to increase significantly in the fall as the meterological conditions change and as plant transpiration and evaporation begin to decrease as it gets colder. It didn't increase because then we view the impact.

So this is what the pattern looked like in four out of the last six months in the United States. You are looking at a couple of the anomalies here due to fairly high temperatures.

DROUGHT SITUATION IN 1980

Mr. YATES. You are not talking about 1977?

Mr. COHEN. No. I am talking now about 1980.

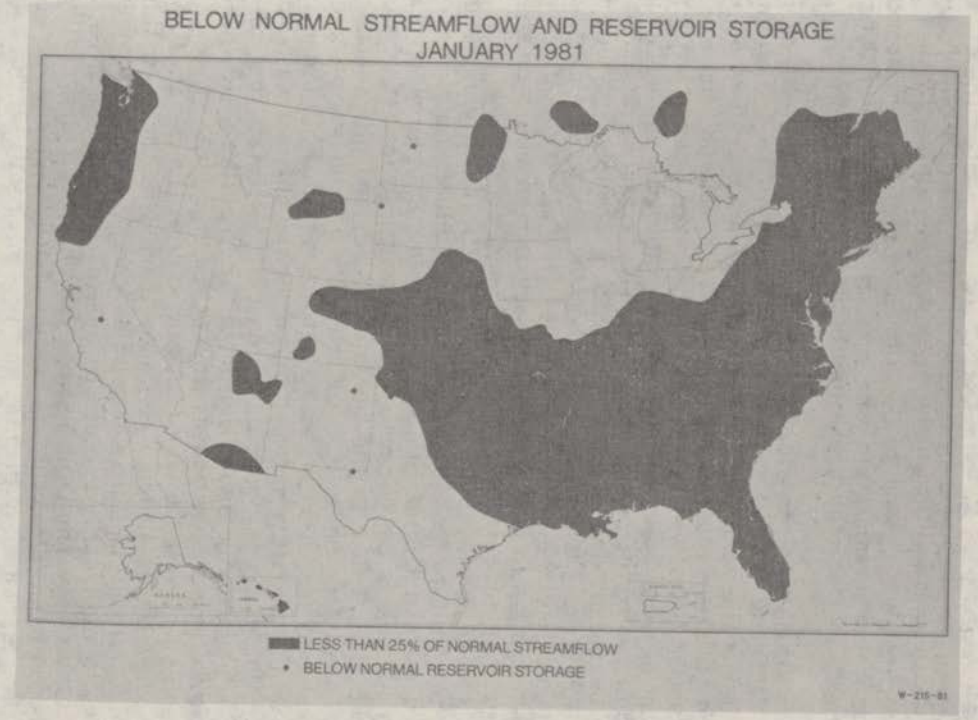
We are looking at some anomalies here which are only of interest because they are anomalies. We are looking at snow-melt runoff.

Mr. YATES. Is that blue spot in Ohio Mr. Regula's district?

Mr. REGULA. We have flooding.

Mr. COHEN. We are looking at a situation that we observed, measured and documented at the end of January 1981.

[The chart follows:]



This map indicates that in January, a broad band of deficient streamflow (less than 25 percent of normal) stretched across the eastern portion of the United States from Maine to Florida and as far west as eastern Colorado. The drought also was reflected in low storage in many reservoirs.

Mr. COHEN. We are not looking at those two anomalies because we are looking at stream flow for that particular month—the area of deficiency in which it was 25 percent or less than normal. That covers about 40 percent of the United States, and covered the entire eastern seaboard, west to the high plains, and a significant band of deficient precipitation and stream flow in the Pacific Northwest. Those were the areas highlighted in the News Week article.

These conditions received ever greater attention because at this stage of the below normal stream flow they were beginning to seriously impact the water supply for some of the major metropolitan areas on the east coast. New York City, for example, the flow of the Delaware River which supplies a substantial amount of the New York water was at an all time low beginning in January. In Fairfax County, Virginia, it was very low. The Occoquan Reservoir was at an alarmingly low level, a level which was somewhat better than the New York City situation but serious enough so that the public officials like the public officials of New Jersey and New York were putting into place very, very serious restrictions on the use of water.

Now it is also significant for you to note the black dots. The point we are trying to make there is that throughout much of the central and eastern United States the reservoir storage was also below normal. This is not the case in the Pacific Northwest where much of the stream flow in the Columbia Basin and other basins are highly regulated. There it is at or above normal stages, and that is critical because if you want to put the drought in a broader context, I would take a paint brush and draw the entire area from the Rocky Mountains to the Pacific coast and tell you that the snow pack is abnormally low, it is probably on the order of 15 or 20 percent of what it should be at this time of year.

The reason you are not seeing that now is that the stream flow associated with the melting of the snow pack will occur in the spring and summer. So unless situations change and that snow pack begins to melt and we begin to look at the normal stream flow for June or July, the situation has not changed dramatically. This will become red. The situation is somewhat better than it is in the East, the reservoirs are brimful and you will recall that in the 1977 drought there was a very serious situation with regard to the agricultural development in southern California.

The reservoir system that supplies southern California is also in fairly good shape. You see only one below-normal storage. In general, there is enough reservoir storage within the western United States to probably carry the agricultural communities in California, and the power generation in the Pacific Northwest through that deficient runoff season, again assuming the snow pack does not increase dramatically. As of a month or two ago people who are running ski resorts told me they were in the midst of a very, very serious drought. The agriculturists could not care less.

PRESENT WATER SITUATION

Things have changed dramatically in the past 15 days. The Occoquan Reservoir which is small and can respond rapidly did respond to the two or three inches of precipitation, and we now have a

pretty good storage situation. The system is so big and was so deficient that we have a long way to go before New York City is out of the woods with respect to this particular precipitation and stream-flow deficiency.

I need to emphasize the question you asked last year and you asked virtually the same question this year: are we running out of water? What we are looking at here is clearly an ephemeral feature; it has very serious negative impacts. It is the kind of thing we can expect to occur every few years. We are going to see these sorts of things. We do not have a significant amount of reservoir capacity that can carry us through these droughts. That is so here because of the nature of the demand; it is day in and day out.

The extent to which this is a severe problem, it is severe right now, but to the extent it is a severe problem depends wholly upon what we have seen happening in the last two or three weeks. We have seen storm patterns tracking across the United States, resulting in significant snow accumulations in the mountains. There was a problem with barge traffic up the Mississippi. The salt water has moved down about 20 miles, having reversed. Right now we are probably at the early stages of what with hindsight we might refer to as a modest drought situation. A year from now with more information the drought may be gone or we may be in the same kind of situation we were in 1977, but we are a long way from the 1977 area.

Mr. MURTHA. Are you talking about the entire red area?

Mr. COHEN. Yes, characterized by stream flow being 25 percent less than normal.

Mr. MURTHA. Why don't you have a storage reservoir in Florida where you have less than 25 percent of the rainfall shortage?

Mr. COHEN. Largely because Florida does not rely on storage. Most of it is from ground water in Florida. In my response to the Chairman's question you may see a very dramatic decrease in stream flow. If normally you would expect 50 units of stream flow, you are looking at something less than 25 units throughout this entire area. Ground water levels have declined but they have declined on the order of a foot or two or three. When one has a well that is two or three hundred feet deep, you don't see that decline. It is there, you pay by increased power to lift the water, but it is rather inconsequential. Again much, much of the public supply of water in Florida is ground water.

Mr. YATES. Mr. Regula.

Mr. REGULA. Thank you, Mr. Chairman.

This is a good historical outline of the problem. My question is, how do you make this useful to the people in this country? How do you effectuate what ought to be done?

Mr. COHEN. We are involved in a broad range of activities and some of them involve reporting very relevant management information almost on a day-to-day basis.

Mr. REGULA. To whom?

Mr. COHEN. Local, which includes cities and other municipalities, county, State and other Federal agencies. By the way, we are working in concert with about a half dozen other Federal agencies to make sure what we are doing is in parallel. Again what we are doing ranges from where we are putting our dollar resources to

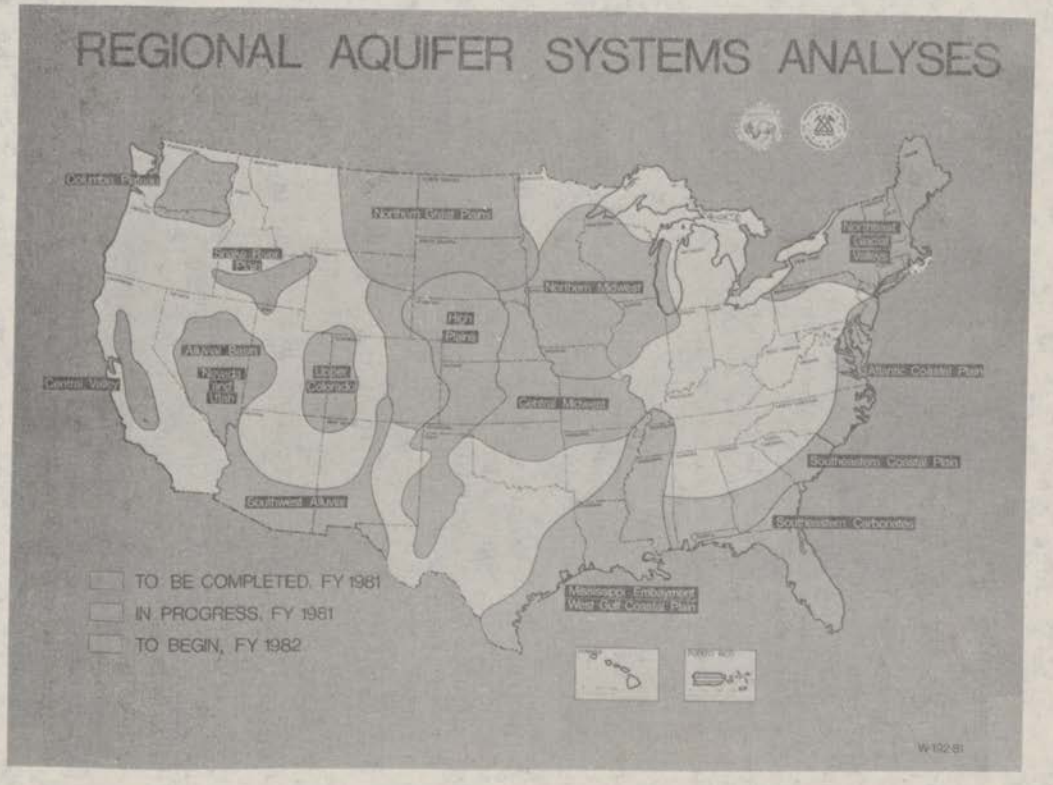
how we are communicating the information. So to the extent it is appropriate, we are telling the same story. We make sure we know about it before the fact on a day-to-day basis.

As an example, we are measuring chloride concentrations in the Hudson River and in the streams that I mentioned going down to Philadelphia on the Delaware River. A very critical determination, but a very simple determination to make. We do this routinely. In the situation we are facing at the present time we increase the efficiency of chloride measurement so we can monitor on a day-by-day basis the upward movement of the salty front. That is a critical bit of information in terms of cities like Philadelphia and New Orleans which rely on those streams for their drinking water.

REGIONAL AQUIFER ANALYSIS PROGRAM

On the other end of the spectrum, largely as a result of the interest of this Committee, we implemented a regional aquifer analysis program in fiscal year 1978.

[The chart follows:]



A significant area of the United States is being studied under the Regional Aquifer System Analysis Program. Studies to be started in FY 1982 will cover the Upper Colorado, Columbia Pleateau, Northern Great Plains, Puerto Rico, and Oahu, Hawaii.

Mr. YATES. This is ground water?

Mr. COHEN. Yes, sir. If you recall, this reflected the interests of the user-community initially. This community is secondary as to what can be done to buffer the results of these vagaries of nature; i.e., changes in precipitation. Remember, I told you that ground water systems respond very sluggishly. So in 1978 we embarked upon a program to get once-over coverage of the entire United States in terms of an assessment of the Nation's ground water resources on a regional basis. We have done a lot of work on a local basis. I could tell you how we are using that information to help New York City and so on.

This is the average length—three or four years in duration—of the Northern Great Plains study. We are working throughout the entire life of these projects with the coordinating committees representing the local and State interests. They know the results of our studies before publication. We have been able to provide them with some very relevant and pertinent information with regard to how one manages and control pumpage. During the 1977 drought there were hundreds of wells drilled to augment the deficiency in stream flow.

Some other fundamental questions were raised as to what would the impact of that be. Some of the impacts are quite negative. As a result of our analysis we tell them what it would be, and in this case, it is a very positive statement; namely, you can go ahead and resume pumping at the very high rates you did in 1977 and not suffer some of the adverse effects.

Mr. REGULA. Does the State actually have direct control of that access to water?

Mr. COHEN. Yes. That is correct.

Mr. REGULA. Really, all you are doing is acting in an advisory capacity.

Mr. COHEN. That is right, precisely. That is a statement of opinion which is a function of the Geological Survey's role. We provide the information.

MISSISSIPPI RIVER WATER SUPPLY

Mr. REGULA. That leads me to the next question. You mentioned that New Orleans depends on the Mississippi for its water supply. We are all cognizant of the low water level there which affects shipping and other things. This is a multistate problem and they have dealt with it on the Colorado River because they have had a long history of water being parcelled out. What about on the Mississippi, is there adequate machinery or governmental structures to deal with an inadequate supply there recognizing there will be various competing interests all up and down that watershed?

Mr. COHEN. Except for these rather infrequent and unusual drought conditions. Again as we discussed last year, normally the question on the Mississippi is a good case in point. Normally the question is not the quantity of water. Normally we have no question of the quantity, it is the quality of the water. What chemical constitutents are in it? Recognize that New Orleans is downstream from some of the major metropolitan areas in the United States which discharge their sewage into the Mississippi River. Across a broad range or areas of EPA regulatory responsibility, we provide a

substantial amount of technical information directly to EPA and we provide even more information to State and local agencies that carry out functions funded by EPA.

Mr. REGULA. Do you think there is any need to enhance both our study and possibly machinery for allocating the water resources in a stream such as the Potomac where urbanization will put a greater conflicting demand on this single resource?

Mr. COHEN. That is an exceedingly complex question because you are touching on at least three or four issues. We are talking about legal precedents.

Mr. REGULA. I understand all that.

Mr. COHEN. The third question is the very, very diffuse responsibility across all levels of government with respect to water responsibilities. Can we as a Nation do better? The answer has to be yes.

GROUND WATER OVERVIEW

Mr. REGULA. Are you developing the data base that we need to address that problem when and if it becomes a reality?

Mr. COHEN. This is a very dramatic case of saying yes. Now until this study which again was initiated largely as a result of actions taken as per this committee, a great deal of ground water work had been done by us and others. This is the first time that we will have in a finite period of time an overview of a total ground water resources of the United States which may frustrate some people. We may not be able to answer questions for a specific town but we can answer questions like the coal slurry pipeline. We think this is a very powerful study and we are very pleased to report to you that we are on schedule.

Mr. YATES. Does that study mean there is no ground water in Ohio?

Mr. COHEN. I will have to refer to my schedule.

Mr. YATES. I don't see anything on your chart relating to it. Does that mean you don't have a study there for sure?

Mr. COHEN. We have not initiated it yet. This merely relates to the status of our ongoing studies to be initiated in 1982.

PRESENCE OF AQUIFERS

Mr. YATES. Do you have a chart which shows the presence of all the aquifers?

Mr. COHEN. Yes. I had one but not a large one. I have one in my briefing book.

Mr. YATES. Substantial amount of water.

Mr. COHEN. Yes. That is correct.

Mr. REGULA. It would not work.

Mr. COHEN. Ohio is well endowed with water. We will be glad to provide you with a copy of our chart for the record, sir, which will show you the beginning and ending.

Mr. MURTHA. How did you decide where to initiate the study indicated in orange, for instance?

Mr. YATES. That is the Madison aquifer.

Mr. MURTHA. How did you decide to initiate it up there?

Mr. COHEN. As the Chairman stated, the very, very first step in this entire program spoke to a very, very narrow question; i.e.,

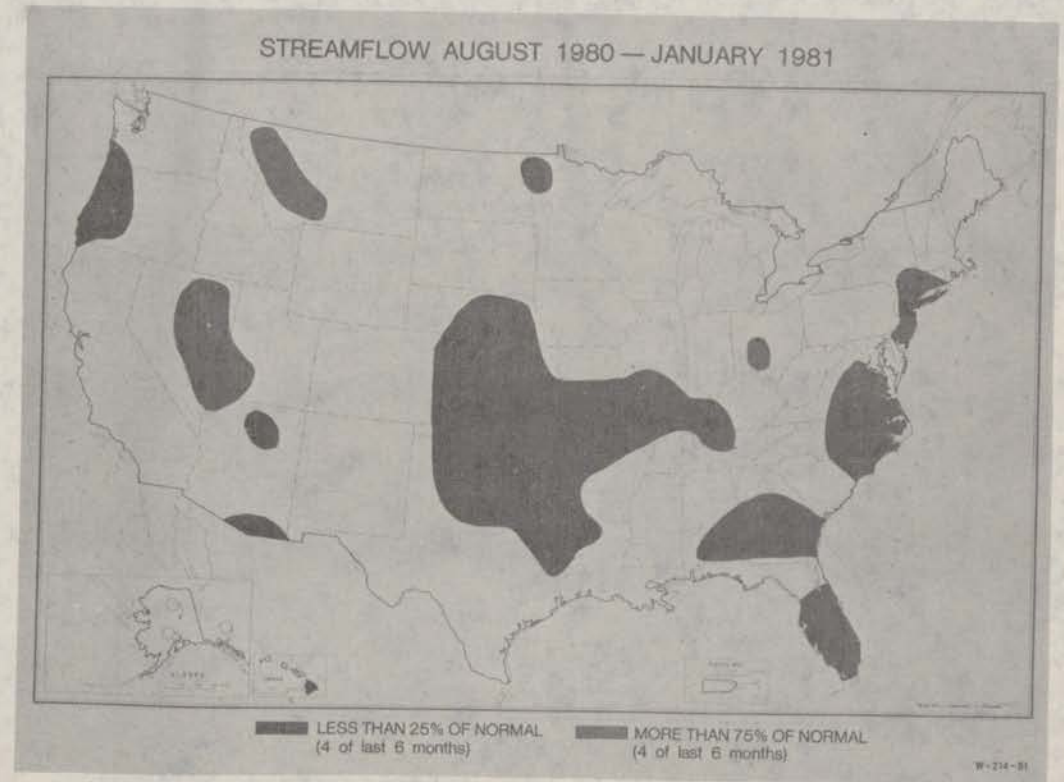
would there be sufficient water from a given aquifer given a body of rock to support a coal slurry pipeline. We reported the progress we made on that study and based upon the technique that was developed. The first time that this committee decided we ought to broaden and deepen that technique, we took the whole section instead of one aquifer. It was under the most severe stress as a result of the fiscal year 1977 drought. As you know, virtually all of the agriculture in this very, very productive area is irrigated agriculture and their situation was they were in dire straits. They had no water in their reservoirs and no snow on the mountains. They knew they had ground water here and they were going to develop that just as hard and as rapidly as they could and they were looking for some assistance. They have some very dramatic negative effects.

Mr. MURTHA. Could I ask one more question about the study?

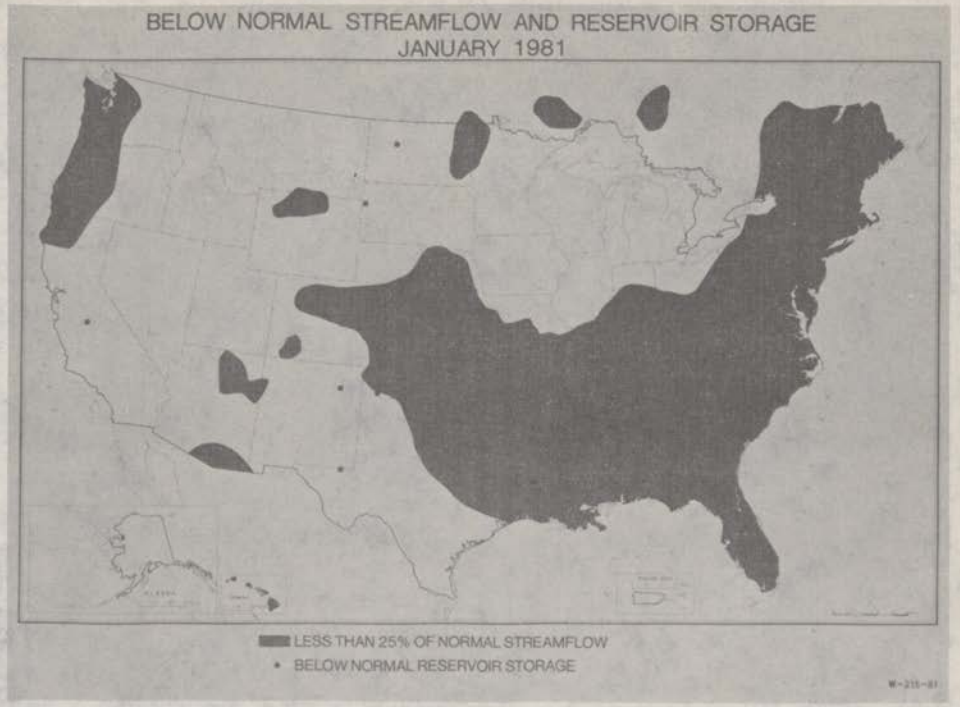
Mr. YATES. Yes.

Mr. MURTHA. Would you go back and look at those two charts.

[The charts follow:]



Persistent pockets of below normal streamflow (less than 25 percent of normal record) have plagued portions of the United States for 4 of the last 6 months. The eastern half of the United States as well as a small area of the midwest were hard hit by the prolonged dry spell.



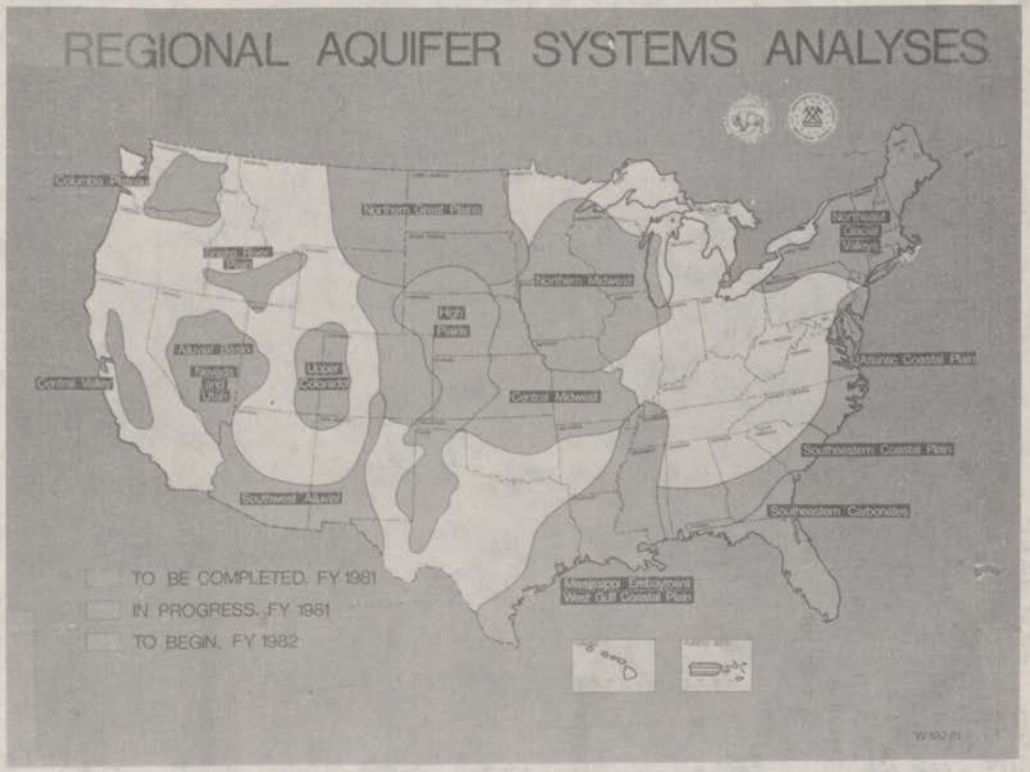
This map indicates that in January, a broad band of deficient streamflow (less than 25 percent of normal) stretched across the eastern portion of the United States from Maine to Florida and as far west as eastern Colorado. The drought also was reflected in low storage in many reservoirs.

Mr. MURTHA. I see you have Ohio with substantial rainfall on the previous chart and then you have less than 25 percent in the second chart. The first chart shows them with excessive rainfall in the same area where you have them in a drought chart.

Mr. COHEN. Essentially at one moment in time, the situation that existed at the moment in January. This is over a period of six months.

Mr. MURTHA. Did you use that then as the basis for your blue on the third chart, or green?

[The chart follows:]



A significant area of the United States is being studied under the Regional Aquifer System Analysis Program. Studies to be started in FY 1982 will cover the Upper Colorado, Columbia Pleateau, Northern Great Plains, Puerto Rico, and Oahu, Hawaii.

Mr. COHEN. No. The schedule on the third chart goes back to fiscal year 1978 when we initiated the program described here. That was based upon consultation with water managers at all levels of government, our own perceptions as to where the greatest need was and our perceptions as to where the nation's greatest needs were.

ALLOCATION OF STREAM RESOURCES

Mr. REGULA. Just one follow-up question which I have not addressed. Recognizing that it is not this committee's direct responsibility, is there an effort underway either through interstate compacts or through some proper committee in the Congress to create a legal structure to deal with a potential crisis in the allocation of stream resources?

Mr. COHEN. I think both of those mechanisms are underway and have been underway for a long time and have had a varying degree of success. The waters of many of the interstate rivers have been adjudicated in the U.S. Supreme Court, and compacts have been entered into and approved by the U.S. Supreme Court as to how the waters of a particular basin will be used under the various conditions of flow. I might add our role in that process is to provide the information up front, at the end of the process to the Secretary of the Interior and he directs the Geological Survey to act as the court's monitor of the flow, whether they have reached certain thresholds.

Mr. FREDERICK. Mr. Chairman, here is an illustration of some of the input. This happens to be a joint report between the Geological Survey and the New England River Basin Commission to provide a tool for the River Basin Commission and the local communities with regards to dealing with the problem. This is but one of the many activities we are involved in to make sure the information gets out to the users in an understandable way.

Mr. YATES. Well, those are all ongoing studies. Have any studies been completed?

AQUIFER STUDIES COMPLETED

Dr. COHEN. The Northern Great Plains and the Central Valley of California study will be formally completed at the end of this fiscal year for practical purposes.

Mr. YATES. For any other years?

Mr. COHEN. No, those are the only two.

Mr. YATES. These are the ongoing ones. When the studies that you have listed on that chart are completed, will that take care of all the aquifers in the country?

Mr. COHEN. Yes, on a regional scale.

Mr. YATES. What does that mean, on a regional scale?

Mr. COHEN. If one wishes to make decisions regarding the overall management of the ground water aquifers of the central valley, we will have developed tools and techniques and communicated these tools and techniques to managers who have that responsibility and then they can make decisions regarding overall acreages to be irrigated, they can make decisions regarding using our techniques.

Mr. YATES. What do you mean by region?

Mr. COHEN. What they cannot do, they cannot use our models to solve a particular problem. If farmer X puts down three wells and removes a substantial amount of water, how will that impact? We have a whole series of investigations, and have had for 50 years, which addresses that scale of problem. That scale problem cannot be handled with the techniques that we are using here. This is a regional analysis, for example, of the Madison aquifer. How much water can you take out of an area that size and bring down here? Now if you want to address the question of: "If I put a well or well field within a quarter of a mile of the town of Gillette, what would the impact of that well field be?" One has to take our coarse-grid analysis and make a final analysis, and that can be done.

Mr. YATES. Where are we going? We are addressing the problem as a matter of national priority. We are beginning to engage in the strip mining program that requires water not only for the process itself but for the thousands of people who will be coming to new population centers to participate in the industrial processes. People are moving from the north to the sun belt. That is evident by the latest census report. We will have questions of synthetic fuels like oil shale which will require water. When will we be in a position to know how much water we have and how much water is allocable to the particular purposes?

Mr. COHEN. I think the United States is fortunate in that in a general sense we already know that how much water the country has. We know, for example, and we can quantify the fact, that the Southeastern United States is an area of water deficiency. We know this and we can quantify it. What you have described is something we have seen for a long time, and it is accelerating and this has increased the competition for water. As you pointed out, for many reasons the increase in demand in some areas is in the areas of least abundance of water. For example, oil shale is in some of the dryer parts of the United States, the sun belt, where people seem to be going. The overall management schemes of how to address this has been known for a long time. The question is how does one quantify the impact of doing X, Y or Z?

MULITAGENCY INVOLVEMENT

Mr. YATES. How do you get agreement on the allocation of the water? I am troubled by the fact; and correct me if I am wrong. I think there are now many agencies dealing with water in the United States Federal agencies, for example, apart from any State or local agency.

Mr. COHEN. I think one can say at least a score.

Mr. YATES. Also each of them has a particular function. Should there be one agency which has control over the allocation of water in the country for national purposes? Is this the function of the Department of Energy insofar as the energy programs are concerned? Obviously the President has to do something like this but which is the agency that you think should be the lead agency if there should be one?

Mr. FREDERICK. Mr. Chairman, I am not sure there should be a lead agency with respect to allocation of water. I think there are many instances in which there are signifiant Federal inputs that have to be made, but generally I think it is a matter of State and

local communities that get involved in the allocation. Now if you are concerned about regional transfers of water, say, from an area into the oil shale area as an example or the development of a coal slurry pipeline or that sort of thing, then perhaps there is significant Federal involvement, but generally it is a State problem or local problem.

Mr. YATES. You have questions of underground stream flow across state lines?

Mr. FREDERICK. Yes, sir. That is correct.

Mr. COHEN. Yes. That is correct.

Mr. FREDERICK. You surely do.

Mr. YATES. How is that determined?

Mr. COHEN. In the courts.

Mr. YATES. I know you have been dealing with the Papagos in Mexico for many years. The Papagos are in the Mexican City on a pool of water which is below the boundary of the boundary that divides Mexico from the United States. The Papagos are claiming that the Mexicans are taking the water out of that pool. You are supposed to be checking that now, are you not?

Mr. COHEN. I am generally familiar with that issue but I cannot speak about the specifics of it. I think I can speak about the specifics of the point you are making. Time and time again there are cases similar to the one you have mentioned, literally hundreds of them going on all the time, either in the courts or being talked about within the courts. Our role is a rather clearly defined one, and I think one that is very valuable. We have been able for a number of reasons to develop a role in which we provide sound scientific information to both parties; and generally we are trusted and we can get away with it, and then both parties have at it. Occasionally both of those parties may be the Federal Government or maybe private industries.

NATIONAL WATER RESOURCES ASSESSMENTS

Mr. YATES. Is there any single volume which shows what the water assets of the United States are?

Mr. COHEN. Yes. There is.

Mr. YATES. And how they are divided?

Mr. COHEN. Not how they are divided.

Mr. YATES. Just what they are.

Mr. COHEN. Just what they are. There is an ongoing activity at the Federal level being headed up by the Water Resources Council which produces periodically a national water resources assessment which provides an overview of the health of the Nation's water resources, the kinds of questions that we can ask. We provide a lot of input in terms of basic information. Two years ago I think from our point of view we made a major step forward and developed a formal agreement with the Water Resources Council which states that we will participate for the first time as a co-equal member of a team preparing the next national assessment. As a matter of fact, we have a very, very modest line item in our budget which helps fund two or three people who are going to be doing this. We think we have something to contribute, and, as a matter of fact, what we are going to contribute is specified in some detail in the Memorandum of Understanding.

We are certain it will help the water managers, members of the legislature and perhaps those at the White House level get an overview of what the Nation's water resources are and how they have changed over a period of time. That is something that we have not done in the past and we are delighted we have the opportunity to do it now.

Mr. YATES. We will be asking more questions about this later on.

Mr. LOEFFLER. Mr. Chairman?

Mr. YATES. Mr. Loeffler.

Mr. LOEFFLER. I would like to ask, and perhaps if this is not the right time——

Mr. YATES. Every time is the right time to you.

WATER STUDIES IN TEXAS

Mr. LOEFFLER. As I look at the planning with respect to certain segments of the country, there are periods in wide areas where you do not have plans for fiscal year 1982. What about, for instance, in my area, the more central part of Texas which would be considered in the south, do you have plans for that area as well as the rest of the country, too? Water is important there.

Mr. COHEN. Yes. Yes, we do have plans to work in that area but it just so happens that the Edwards Limestone is one that we have looked at in very, very great detail as part of our cooperative program between the Geological Survey and the State of Texas and one or two local agencies. So I say we probably know more about the Edwards Limestone, we certainly know about the Edwards Limestone aquifer, which I would say is among the five percent of major aquifers. Contrary to the position I took with the Chairman, we do not have to describe the Edwards Limestone on a regional basis, we can define it on a very fine range basis. There is a great demand for the water of that aquifer and that demand results in some very intensive investigations.

Mr. YATES. If there is a very great demand for the water from the Edwards aquifer, is it being replaced?

Mr. LOEFFLER. It is just being replaced by the actual recharge mechanism.

Mr. YATES. Does that keep it constant?

Mr. LOEFFLER. At this time it has always met its demands in the western part of Texas, drought and non-drought. Another good question. It is going to be a problem, it is San Antonio's main source of water.

Mr. YATES. We look at this map and we see there are studies going on. As a result of these studies will we know which aquifers have lost water permanently?

Mr. COHEN. We know that independent of these studies as part of our basic data network. We are measuring some tens of thousands of wells.

FRESHWATER IN FLORIDA

Mr. YATES. Is Florida losing any of this fresh water?

Mr. COHEN. Again as we discussed last year, Florida is in a sort of a unique situation. Yes, it is losing its fresh water. Perhaps even more serious, it is not quite as visible. It is losing its fresh water

because of the percolation of thousands of cesspools and septic tanks.

Mr. YATES. So what happens to that water?

Mr. COHEN. It gradually deteriorates.

Mr. YATES. Does anybody correct it?

Mr. COHEN. Yes. I suppose the biggest, if not one of the biggest, public works programs funded by the Federal Government is the construction of sewage treatment plants. We are spending billions of dollars.

Mr. YATES. In Florida?

Mr. COHEN. We are spending billions of dollars in sewage treatment.

When one goes into a new terrain and puts a cesspool or a septic tank down, you forget about it but if you put down hundreds of thousands, that is a problem. In any society you take a network of sewage collection lines and run it to some receiving body. Again this is probably the largest public works program in the United States.

Mr. MURTHA. Are you saying if we cut back on sewage treatment it will hurt the water situation substantially?

Mr. COHEN. It is a matter of degree and a matter of location. It has to be done with a great deal of sensitivity and a great deal of knowledge. Our activity has indicated that some sewage treatment facilities are desperately needed. Probably really they are not needed in other areas.

Mr. MURTHA. If there is a drastic reduction of funds for sewage treatment how long before we realize the impact and how fast can we react?

Mr. COHEN. To try to answer that——

Mr. MURTHA. Let's take Florida for example.

Mr. YATES. If the Federal Government does not do it, the State will have to do it.

Mr. COHEN. Florida is probably as active as any State in the country and more active than most in addressing itself to the problem of contamination of ground water by sewage. They are aware of the problem, they have been extremely innovative in attacking the problem. One measure of that is the Geological Survey has its largest cooperative program in the State of Florida which we are working in partnership with the State in addressing many of the problems.

Mr. MURTHA. If the Federal funds are cut and Florida does not pick it up, how soon will it have an adverse impact?

Mr. COHEN. It is a matter of degree, Mr. Congressman. It depends if these problems become highly localized. There are some towns in Florida that probably do not need centralized sewage treatment plants for decades, maybe others that are probably 10 or 15 years further down the road than they should be. That is the kind of issue we are dealing with.

COST OF REGIONAL AQUIFER STUDIES

Mr. MURTHA. How much is this study costing?

Mr. COHEN. Funding for this study in fiscal year 1981 is on the order of $16 million.

Mr. YATES. What will be the total cost?

Mr. COHEN. Over the projected ten year life of the project our estimate was somewhere around the order of $110 million.

Mr. YATES. For one State?

Mr. FREDERICK. The entire country.

Mr. MURTHA. Would accelerating the pace of the project have a significant impact? How much could it be increased?

Mr. COHEN. We are moving at a very rapid pace in this particular investigation, it is one of the reasons the board is up here. We are very proud of the work that we are doing. I suppose one can answer that in almost any study additional resources could enhance the study but frankly I think at the level at which we are working right now we are probably at an appropriate balance with regard to the total resources that we have available to us, including many, many other things.

Mr. MURTHA. In other words, there is not going to be a water shortage that we won't know about? This study is not so imperative in time frame that it will make any difference?

Mr. COHEN. That is precisely correct. I think it would be misleading for this committee to suggest that we study all this simultaneously.

Mr. FREDERICK. Mr. Congressman, we have 15 regional aquifer studies underway, I believe, in fiscal year 1981, 1982. Ultimately we have plans to complete about 28 and you can read the schedule which I will leave for the record.

Mr. YATES. We will come back to this later.

Mr. Regula has another subject that is dear to his heart and that is the side scanning radar.

Would you like to ask the questions on that, Mr. Regula?

SIDE SCANNING RADAR

Mr. REGULA. Yes. I understand Mr. Davies is here.

Mr. FREDERICK. This is Gene Thorley who is the Chief of our Office of Earth Sciences Applications. He is generally responsible for the Geological Survey end of it and other related radar information.

This is Bill Davies. We will be happy to answer your questions.

Mr. REGULA. What I am interested in is what your success has been with this in applications within the continental United States as well as Alaska and what you see as the future potential.

Mr. FREDERICK. Let me lead off. As you know, Mr. Regula, we were instructed a couple of years ago by Congress to reprogram $2 million from our base to specifically collect radar information and evaluate radar information against a series of applications. We have since that time contracted with two firms to collect radar data over a substantial part of Alaska. We have also purchased existing information over certain parts of the continental United States and they have an analysis underway at the moment.

With your permission I would like to ask Dr. Thorley to address where we are now and we will ask Mr. Davies specifically to talk about his application which has been limited at the moment to the Appalachian area of the United States.

Mr. THORLEY. Actually what we would like to do is just give you a progress report of where we are because we are not far enough along in the project to give you a definitive answer.

Last year at this time you asked simply the question, what were we going to do with the radar project. We reported that we had set up a multidivisional committee to design the project and select test areas in Alaska. This was the intent that it was principally in Alaska and reported that we chose two areas in Alaska, one on the Alaska peninsula. There is no controversy in the literature or in our mind that radar is extremely useful where you do not have other data available, where you have weather conditions that do not allow you to have Landsat or any other available data sets that we have of the majority of the United States.

Mr. REGULA. Do I infer from your comments that everything else being equal you prefer Landsat as opposed to SLR?

Mr. THORLEY. The suitability of Landsat or SLAR is dependent on the problem being addressed. The way we approached this was sort of an incremental analysis. What is the value of a radar data set given the existence of Landsat imagery of the entire United States, high altitude aircraft photography that is systematically being acquired of the United States and Alaska in order to acquire 90 percent of Landsat and Seasat radar data of similar characteristics acquired of 80 percent of the United States and Alaska. When you look at the literature, for example, what you have is an evaluation of a radar image of a particular objective. What they do not evaluate is that you have all these other data sets and you are going to purchase another data set. What is the incremental value of that additional data set?

Mr. REGULA. The real key is the incremental data that can be secured by SLAR cost effective in terms of its enhancement of the understanding of the geological structure. Is that a fair statement?

Mr. THORLEY. Yes. That is correct.

Mr. FREDERICK. That is a reasonable statement, sir, and that is the way we are approaching the evaluation. I think we would suggest that indeed under certain conditions and in some areas the radar information is valuable.

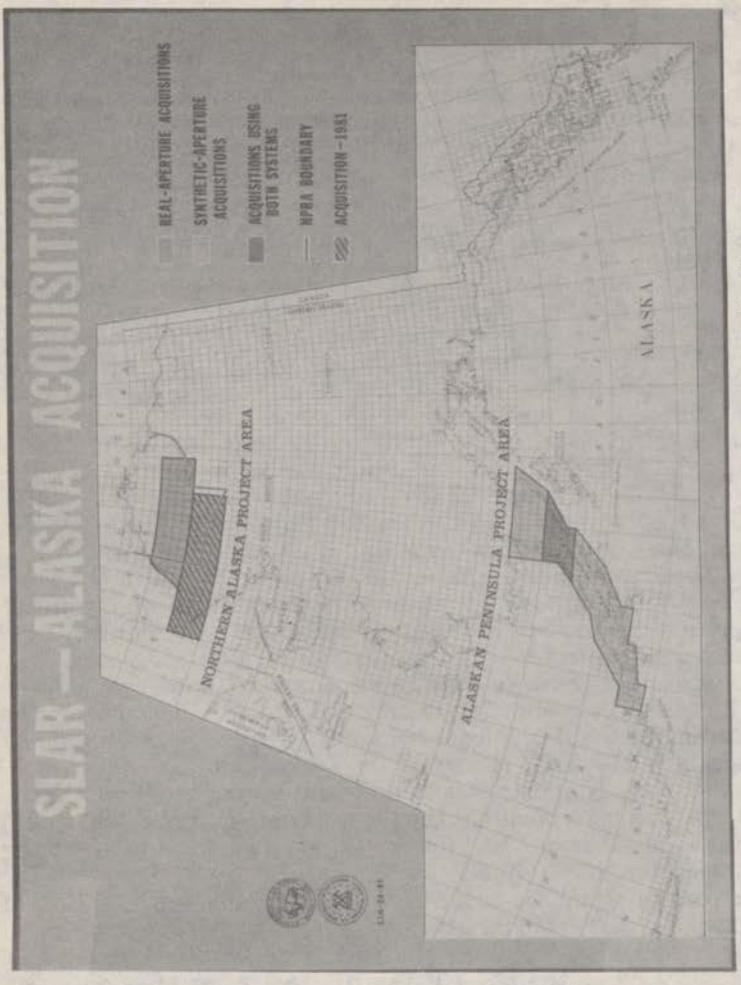
Mr. REGULA. I would be interested in Mr. Davies' evaluation of the service.

Go ahead.

Mr. THORLEY. Well, the point is that there are very few data sets here so right away SLAR has some value because it provides data that we don't have any other option for acquiring.

Mr. REGULA. Are you talking about the Alaska peninsula?

[The chart follows:]



Side Looking Airborne Radar (SLAR) data was acquired during the summer of 1980 in two areas of the State of Alaska; the northern Alaskan Project area with a real-operational system, while the Alaskan peninsula project area was imaged with a synthetic-aperture system. In addition, a test site within the pensinsula was chosen for a comparison study; two look stereo SLAR from both systems were acquired.

Mr. THORLEY. I am talking about the Alaskan peninsula and in particular now in this area on the Western tip of the peninsula where we have not only limited data but we have inadequate maps. They had no other imagery available that they could use but that is not the case in the coterminous United States as you are well aware.

Mr. REGULA. I understand.

Mr. THORLEY. They also decided to fly this area in the southern portion of NPRA which should be useful to people who might want to evaluate these areas using SLAR. Also, we have considerable imagery and geological data about this area and analysis of it.

Mr. REGULA. Would that data be superior to what you would obtain from Landsat?

Mr. THORLEY. Only for certain types of analyses. Let me just take you through what we are doing because what you have asked us to do is an evaluation of the utility of SLAR to the Survey for topographic and geologic mapping as well as geologic resources surveys. What we are doing are two geologic resource activities. That consists of a folio of maps which are used to make a final mineral resource appraisal of the quad. It consists of a geologic map, 1 to 250,000 scale, which is compiled from very detailed ground data and some limited use of photographs. They don't use Landsat and there is very limited use of SLAR in that particular scale. It consists of a geochemical map, an areomagnetic map as well as a geophysical map and finally a Landsat analysis of the region.

The relative value of those particular folio inputs to the final mineral resource appraisal is approximately 50 percent for the geologic map, 35 percent for the geochemical map, 10 percent for the geophysical data and finally approximately 5 to 10 percent for the Landsat regional analysis. It is in this regional frame work that we would expect the SLAR data to be useful to us as an adjunct to Landsat but the incremental input to our mineral resources assessment is very small.

Mr. REGULA. Thank you.

Mr. THORLEY. The Landsat is cost effective because it exists. We are trying to evaluate the incremental utility of purchasing additional SLAR data. We are not that far enough along to make a definitive statement.

Mr. REGULA. When will you be?

STATUS OF SLAR RESEARCH PROJECT

Mr. THORLEY. Last year we reported that we would get the SLAR imagery which we needed in order to evaluate the technology in Alaska. This last summer, I am pleased to say, we have acquired all of the imagery in the Alaskan peninsula as well as most of the imagery of the northern test site. This imagery, four quadrangles in the northern test site, will be acquired this next summer at no extra cost to the government acquisition was delayed because of early snow fall. We have acquired an area here on the Alaska peninsula with the size of a 1° x 2° quad on which we are currently carrying out an activity with both of the currently commercially available radar systems.

We indicated last year that we would complete the research program by the end of this fiscal year, and we are on schedule. We have a seminar scheduled for the middle of August to go over all the results of all of the 20 research projects—the million dollars that we have spent on research over the past two fiscal years.

Mr. FREDERICK. Gene, it is fair to say that the project you just described is only one of the evaluations that we are using and this is kind of a regional input to our mineral resource assessment activity. Now there are other applications Dr. Davies will talk about one of those and there are several others that indeed will be used to completely evaluate the work of the system.

Mr. REGULA. I would like to hear from Dr. Davies.

Mr. FREDERICK. Yes, sir.

APPLICATION OF SLAR DATA IN LANDSLIDE MAPPING

Mr. DAVIES. Our efforts have been somewhat in contrast to the last one described. Ours primarily reflects an engineering problem relating to land slides. We have been charged with doing an evaluation and mapping of all land slides in the Appalachians from Pennsylvania to Alabama.

Mr. REGULA. When you say we, are you talking about USGS?

Mr. DAVIES. USGS, that is right.

What we have done so far is accomplished what we call the inventory. We know where all the landslides are and what they are. They amount to about two million right now and we think total about 2,500,000.

Mr. REGULA. When you say two million, are you talking about actual individual landslides?

Mr. DAVIES. Individual landslides. We estimate ninety-five percent of the slopes are moving destructively in the coal area. If you build a house, your chances of going down hill are fairly good. Our biggest problem at the moment is the fact that we have had to rely on Landsat and aerial photos. We can identify landslide areas from them but we cannot identify the one most important thing, that is rapidly identify regional geologic structures that are related to landslides. We know that landslides are directly related to storage stress regions in the Appalachians. The recent Maysville, Kentucky earthquake a rather dramatic example of that storage stress. We are now measuring certain stress areas near the surface.

Mr. REGULA. Would that be an ongoing tension within the Earth's crust?

Mr. DAVIES. Not so much tension as compression. In the Ohio Valley especially it is extremely high within landslides areas.

We probably can identify very little on aerial photos nor can we identify anything directly on the Landsat. The Landsat is clear and we could use it for other things related to this. One of the worst problems on Landsat is the vegetation and the field patterns that accompany it. By sheer luck a couple of years ago we were able to get our hands on some of the side looking radar which was not proprietary and the results were amazing. We started to find that all through these areas are certain chevron structures which have been analyzed and appear to be related to stress patterns.

We are beginning to realize that these are stress release points and we are also beginning to realize that there are concentrations of landslides right around these things. So what we are doing now is the best we can by pilfering and otherwise using this material to identify these features and then taking and transposing them to the 24,000 sheets, and going out in the field to check them. Certain ones are being excavated by backhoes and others are being instrumented.

What we are coming up with, I think, is an ultimate solution to the landslide problem and why they are there and then from that we can take the next step which is how corrections can be made. So far we do work very directly with the Office of Surface Mine Reclamation identifying those areas in which strip mining must be restricted and so on. This will give us more of a basis behind. This is just 250. We do prefer very much and very dramatically a hundred thousand scale. A hundred thousand scale is the answer

to most of our problems. This is the 100,000 scale map of an area in southern Virginia which was mapped by the Geological Survey in 1969 before we had Landsat or before we had any of the radar at all. Copy of this map will be provided for committee files.

There are several important things. This entire sheer zone which shows very beautifully on the radar was missed in the mapping. These dome-like structures here which are now appearing in the Piedmont are becoming quite significant since the seismic lines which have been run across the Piedmont are beginning to explain quite a few things. There are several lines on the radar map that we cannot account for because even on the ground we cannot find them.

In talking with the oil companies and other people we are beginning to realize more and more what we are seeing at the surface are merely the fracture patterns of something deeper down. The recent Maysville, Kentucky, earthquake was in an area of no known active faults at the surface. We hope that surface patterns on radar, when it is available, will reflect conditions at depth that will contribute to an understanding of conditions in the area. Certainly these faults here are not surface features except they have cracked. We can tell by the tone on the radar that this is loose sand and not solid rock, and we have suspected this for quite some time.

Mr. REGULA. Would all of those be identified by SLAR and not by Landsat?

Mr. DAVIES. There is a sheet for Landsat. This is a geologic map for comparison of the same area. These are the major things identified on radar that we found missing on the others. Those are features that could not be accounted for by the geologist because he did not have the radar. With the radar it can now be added.

The ultimate in radar display on any of these sheets comes on this 100,000 sheet. This one is the Bluefield, Va. sheet. We have crews working down there right now. This fault, for instance, was not recognized for a 100 years. It is now mapped on the new USGS maps. We identified it from a copy of a SLAR circulated to us in 1975.

Mr. REGULA. Has this SLAR all been done by private companies as part of a mineral exploration and just provided to you?

Mr. DAVIES. No. I have to say probably speculative on their part.

Mr. REGULA. Speculative in looking for minerals or oil?

Mr. DAVIES. Well, I would assume that the people who flew it flew it on a speculative basis that they could sell it. As we understand, this was sold to the Columbia Gas Corporation.

Mr. FREDERICK. This is a fairly important point. In the measure of a value information, the companies are flying a great deal of information on a speculative basis.

I think just to further comment on what Dr. Davies is saying, there are some implications that look promising to us. Two or three points I guess in that regard. It is an additional tool in this case. Even in this case it is an additional tool to aid in the field inspections and to produce new geological methods and that sort of thing. It is also much more valuable if one knows what one is looking for and the project is directed to the activity in mind. So we think, as an example, we are going to find that there are some

significant applications, things that radar offers, say, that Landsat does not. We also think that one would pay particular attention to the kinds of investigations involved and would structure the collection project to meet those requirements.

I suppose another thing we might want to say is that this particular radar that we have available to us now can indeed not be the state of the art in radar systems and one might also want to look at additional radar information and we indeed are kind of incorporating that into the study.

Mr. REGULA. Is that kind of data useful in making an estimate of mineral resources in a given area? Are there patterns that indicate oil, coal or gravel?

Mr. DAVIES. No, not directly. Not that it will in itself do this, no. For instance, one of the interesting things is this line through Burke's Garden here. The oil companies for years have been drilling Burke's Garden. Unfortunately, when you start looking at the radar you realize that we are drilling on the wrong side because this fault which transects Burke's Garden did not show up until we got the radar and of course the money is spent and it's too bad, it is on the wrong side of the line.

Mr. YATES. Which is the right side?

Mr. DAVIES. This side. I hope there is nobody here from Burke's.

Mr. REGULA. What does the fault do, interrupt the flow?

Mr. DAVIES. Yes, it seals off what would be the pool. That is normally thought to be a dome but actually it is a faulted dome. One side of the structure, if at all, would have the oil.

Mr. REGULA. Is this process so terribly expensive that it would not be an efficient use of public funds to do the key areas of the Nation and make it available to all people as do your other maps?

Mr. DAVIES. Our viewpoint would be this, the way I would illustrate it. It would not pay us, as a landslide project to buy this because our total budget for the year is only $350,000. That would barely buy in on a proprietary level. The overall expense would have to be shared by many others. If it is shared by many others, then we would buy in from just our ordinary expense. If it is not shared by others, we could not. It has to be shared.

Mr. FREDERICK. I think overall we probably do not have a final answer to that question other than from a general point of view. We think probably it might not be worth the expenditure of the funds to collect data for the entire United States, including the entire State of Alaska, as an example. However, it may indeed be valuable enough and worthwhile enough to collect it over specific targeted areas, and some of those could be reasonably sizable. I would suggest one measure of that interest might be how many agencies, including State agencies, would be willing to contribute to that fund and to collect that kind of information.

Mr. REGULA. State geologists are generally very enthused about getting this kind of data.

Mr. FREDERICK. Yes, sir, we think so. If we get to the point where we think maybe there might be enough interest to collect over a specific area, we will indeed go to that State and ask if they are willing to contribute to the collection of that information.

Mr. REGULA. Would you enter into an agreement with private groups as well as State agencies in which you each will share in the imagery?

Mr. FREDERICK. I think technically we have difficulties specifically entering into agreements with private groups. I think we could probably work something out over the long haul with kind of a proprietary sort of an approach so that we could work out a deal.

Mr. REGULA. Given the dedication of the new Secretary of the Interior to enhance the evaluation and usage of our western resources, would this not be a valuable tool in that activity or objective?

Mr. FREDERICK. We think indeed it may be in some areas, Mr. Regula. We are not sure that at the moment from, say, just the Geological Survey point of view, in terms of added additional value if you worked expenditure of their fund. Overall it may indeed be and once we finish our analysis we think we will be in a position to make a specific recommendation to the committee in terms of what one ought to do.

Mr. REGULA. How soon do you think you will have that?

Mr. FREDERICK. This fall we think we will have an evaluation.

Mr. REGULA. Dr. Davies, have you been involved with the Alaskan portion?

Mr. DAVIES. No. I have not worked in Alaska since 1966.

I would like to add one thing. Any large area to be flown should, very definitely be very carefully worked out for specifications of optimum flight lines because random flying east-west or north-south is seldom applicable. You have to change direction even within a region.

Mr. REGULA. You are saying you have to seek an objective in terms of making this a cost effective technique?

Mr. DAVIES. Yes. That is correct.

Mr. THORLEY. I would like to add one additional point to carry on a point that Doyle made that when you begin to view SLAR acquisition in that framework it makes a lot of sense to go to the current state-of-the-art systems. Commercial systems are not state of the art systems, as a matter of fact, for the following reasons: they don't have digital output, they don't have multiple frequencies, they don't have multiple polarization.

Mr. REGULA. Are you suggesting that SLR should be digitized then?

Mr. THORLEY. I am suggesting that we should use SLAR's total ability as a tool by obtaining these data in a digital format so that we can use it in a particular framework and use things like the roughness as well as the dielectric constant which is another piece of the information in addition to the shadowing characteristics. So as we go to smaller and smaller projects that are tailored to the terrain, we should be able to utilize more and more advanced radar systems that are currently available from a number of agencies.

LANDSAT IMAGERY

Mr. REGULA. Is the entire Nation now covered by Landsat imagery which is available?

Mr. FREDERICK. Yes.

Mr. REGULA. Is the state-of-the-art in that improved or do you feel what you have is as good as is available?

Mr. FREDERICK. It has been improved over the three Landsat systems that have been flown already and the plans for future satellites would include improvements in the capability there as well.

I also would point out that we have SEASAT radar information for about 80 percent of the United States that also provides some value in that.

Mr. REGULA. As I understand it, you are asking for additional funds for digital cartography.

Mr. FREDERICK. Yes, sir. That is correct.

Mr. REGULA. What is the basis for that increase in funding?

Mr. FREDERICK. The basis for that increase, sir, is to provide us a capability to digitize the information that is now normally shown on our topographic map, at least five sets of data that are shown on our topographic map, and to provide that in a form that people can use in computer analysis. If you look down the road, as an example, in terms of ultimate applications for that, one could suggest if the radar information was available in digital form you might provide very useful information in combining that with those data.

Mr. YATES. This is the general question area and we will be more specific later.

Mr. Murtha has some questions which he has asked to have answered for the record.

[The questions and answers follow:]

Mr. FREDERICK. Yes, sir.

Questions Submitted by Congressman Murtha

SYNTHETIC APERTURE RADAR

Question. My first question concerns experience of other countries with a commercially available radar mapping technique, Synthetic Aperture Radar (SAR). Have you investigated the extent to which other nations and areas, particularly Brazil, Venezuela, Guatemala and Indonesia, have used SAR? Do you know of any success or problems that they have had?

Answer. The Geological Survey is aware of the extensive acquisition of airborne radar data in South America as well as other lesser developed countries. These data are of particular value in regional scale planimetric image mapping of areas where climatic conditions prohibit the use of conventional geometric mapping photography. Radar penetrates most cloud cover conditions, enabling the interpreter to develop planimetric image base maps of the surface, and target areas for additional selected remote sensing and conventional land resource assessment techniques.

With regard to the survey made in Brazil, we are aware of the major advantages as well as some shortcomings that evolved from their studies. Advantages included rapid data acquisition independent of cloud or light conditions which permitted timely compilation of a series of radar-base maps of the country at 1:250,000 scale. These maps have provided useful geologic structural information in many areas, particularly where dense vegetation and cloud cover prevailed. Some shortcomings recognized by these studies included the inability to discern linear structures that were normal (perpendicular) to the flight direction, and loss of information resulting from the high degree of reflection produced by steep slopes as well as radar shadows.

The airborne radar imagery acquired in Guatemala was with a real-aperature system rather than a SAR system. To our knowledge, the utility of SAR from the other countries is still under assessment.

However, the success of SLAR surveys in tropical or semi-tropical countries with prevailing inclement weather conditions and limited or non-existent remote sensing data sets in the visible and near-infrared region is not directly transferable to the conterminous U.S. and Alaska.

Question. This question refers to use of SAR primarily by the United States Geological Survey for geologic mapping.

The statement has been made that SAR surveys accentuate many more geologic features than do aerial photos or landsat images. The range of from 10 to 100 times the number of discernible features have been given. Would this not permit your agency to prepare more accurate maps, more detailed geologic interpretation, and in fact, provide increased guidance on the number of things to be inspected in the field, thus giving you a more complete product for the dollar?

Answer. The Survey recognized that a properly designed SLAR survey can provide additional information which may not be discernible on other data sets under certain weather and illumination conditions. However, SLAR data acquisition costs range from 3 to over 10 times the cost of high altitude aerial photography, which currently is available of over 90% of Alaska and is systematically being acquired of the conterminous U.S. (i.e., $3-$5 per square

mile for high altitude aerial photography; $11-$44 per square mile for SLAR data). Determination of the incremental value of the additional information provided by SLAR, given the existence of high altitude photography and other data sets of Alaska and the conterminous U.S., is one of the major objectives of the Survey's SLAR Program. Our analysis of this issue should be available to the Congress by the end of calendar year 1981.

Question. This question concerns the potential users of SAR data.

It is my impression, based on a survey conducted by the Library of Congress, that there are many potential users of SAR data. These include Federal users outside of the Department of the Interior, State agencies, municipal governments, as well as the private sector. Many of these users are small and require only limited amounts of data. Quoting from the Library of Congress report, "potential uses in addition to structural mapping for assessing potential mineral resources and goelogic hazards

- -- locating repositories for industrial wastes, especially nuclear
- -- RARE II, aiding in forest service mineral evaluation
- -- geothermal resources, aiding in location
- -- regional ground-water aquifers, their hydrology
- -- Alaska, geologic mapping of, especially as an aid to the USGS Amrap program
- -- uranium resource exploration, as an aid to Department of Energy's NURE program
- -- underground coal mines, detection of fracture roof problems
- -- earthquake risk assessment
- -- natural offshore oil seeps, location
- -- landslide potential
- -- siting of utilities and construction projects."

The question then is, at present, SAR surveys are performed on a proprietary basis, would the country be better served if such information were available to the public, at a price that reflects the cost of the survey, divided by many users?

Answer. Presently, high quality Seasat synthetic-aperture radar data is available of over 80% of the conterminous U.S. and Alaska. In addition, copies of already acquired side looking airborne radar (SLAR) data are commercially available for approximately 60% of the conterminous U.S. at a nominal cost ($0.20 - $2.25 per square mile). In those special cases where presently available data sets will not provide the desired information, and SLAR appears to be the system of choice, the flight parameters (e.g., flight direction, depression angle, and wavelength) must be carefully tailored to the structural grain and topography of the study area.

In many cases the proprietary approach would be most appropriate. If, however, in other cases a legitimate public need was identified for specified areas by agencies or users then a joint advance funding arrangement may be practical.

Question. The question of storing and digitizing SAR data has to be considered too. Statements that SAR images must be digitized at great expense and stored in a computer before they can be used. Is this true? Can you see any problem with storing SAR images in the existing Department of Interior's EROS Data Center, and making them available to the public in the same way as landsat and air photos are?

Answer: The question of digitizing conventional data such as photographic images of airborne radar data must be distinguished from the issue of whether it is advantageous to directly acquire and store SLAR data in a computer compatible form. This latter issue addresses the current state of the art in remote sensing data acquisition and analysis. Direct acquisition and storage of radar data in a digital format offers some rather significant advantages for selected research, such as geometric corrections, analyses of surface roughness and other physical properties, as well as image enhancement. However, as with any specific research study, the acquisition of data (whether it be remote sensing or conventional ground acquisition data) must be a part of a carefully designed scientific program developed to optimize the chances of success in light of the particular goals. The cost effectiveness of digital data acquisitions must be weighed against the incremental advantage over less sophisticated methods. The question of digitizing photographic reproductions of radar data is less complex. The relative advantage of converting from an analog form (such as photography) to a digital format and subsequentiy analyzing this data is limited, and in most cases the necessity for digital data must be defined before the acquisition.

The storage and distribution of radar data from the EROS Data Center, either digital or photographic would present no problems. The Side Looking Airborne Radar (SLAR) photographic products acquired for the Geological Survey during the summer of 1980 in Alaska are now being received and will be archived and distributed through this facility.

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Royalty Management System

Question. In a 1979 report entitled "Oil and Gas Royalty Collections-Serious Financial Management Problems Need Congressional Attention" (April 13, 1979), the General Accounting Office said that the royalty collection system for oil and gas taken from Federal land "does not have adequate internal controls to provide reasonable assurance that all royalties are collected." What actions have been taken by GS since then to provide that assurance?

Answer. The Geological Survey in its internal evaluation of the Royalty Accounting System (1978) is in agreement with all of the essential elements of the cited GAO report and has embarked on a high-priority effort to replace the inadequate system with one with adequate internal controls. Some of the basic elements of the improved system are:

- Increased royalty receipts - The GAO and others estimate that the existing system permits a substantial amount of royalty underpayments.

- More timely availability of funds - The existing system doesn't provide adequate incentives or penalties to ensure timely and accurate reporting. The new system will permit same-day depositing of checks and late and underpayment penalties.

- Increased productivity - The new system will automate many existing labor-intensive functions.

- Reduced regulatory burden on industry - The new system substantially reduces reporting volumes while simultaneously increasing accuracy.

- Tighter security and internal control - The new system will provide double entry accounting and other physical and procedural checks and balances not possible with the existing system.

Question. The GAO report said that Geological Survey was not collecting all the royalties that were due and that royalties which were collected were being collected late. Has that situation improved substantially?

Answer. The GAO report said that royalty systems such as ours without post-audit capability experience gains in collections from 7 to 10 percent once that capability is installed. Other oil and gas industry sources confirm that estimate. We have reason to believe that we, too, are undercollecting due to a lack of post-audit capability exacerbated by the many other shortcomings of the system enumerated by the GAO report and our own studies.

We have embarked on a high-priority effort to replace the existing system, and we estimate that by March 1982 we will be in a position to ensure that all future royalties rightfully owed the Government are eventually collected.

As to late payments, we undertook in separate actions in late 1980 to promulgate rules authorizing us to assess penalties for late payments for both offshore and onshore leases. The offshore rules are in effect, but the onshore rules have been deferred by Presidential Order until March 31, 1981. In January 1981, only 1 percent of offshore royalty payments were late while onshore late payments totalled about 18 percent. We anticipate that onshore late payments will reduce sharply once the deferred rule takes effect.

Question. How much does the Geological Survey now collect annually in oil and gas royalties? Does that include amounts collected on Indian lands? What percentage of that is collected after it is due and what is the exact dollar amount of late payments?

Answer. We estimate that in Fiscal Year 1981 we will collect from all leasable minerals on Federal and Indian lands royalties of about $4 billion. Of this $4 billion, Indian royalties will total about $138 million.

As stated in response to Question No. 2 above, about 1 percent of offshore royalties and 18 percent of onshore royalties are submitted late, amounting in the month of January 1981 to $1.8 million and $12.8 million respectively.

Question. Are interest and administrative expenses charged on late payments?

Answer. Penalties based on the current month's U.S. Department of the Treasury borrowing rate are levied on offshore leases and will be levied on onshore leases as well once the suspended rules authorizing it are put into effect (March 31, 1981).

Question. The GAO estimated that as much as $359 million in late payments occurred in 1977. Although GAO has not yet completed an updated estimate, can you tell us what you expect that figure to be this year?

Answer. We anticipate about $20 million in offshore late payments and about $100 million in onshore late payments in Fiscal Year 1981. The offshore estimate assumes the continuance of a 1-percent late payment rate throughout the year, while the onshore estimate assumes the reduction of the late payment rate from 18 to 10 percent once the onshore late payment penalty rules become effective on March 31, 1981.

Question. The GAO report said that in many cases, the statements of lease accounts showing accounts receivable contained numerous errors and could not be relied upon to effectively manage royalty collections. GAO concluded that, as a result, the Survey and the oil and gas industry could not use these records to determine if royalties were properly computed and paid. What steps have been taken by GS since then to correct this problem?

Answer. Several improvements have been made to the existing system since the GAO report was issued, but the serious problems affecting account balances remain essentially the same:

- reconciliations must be done manually, and the rapidly increasing number and complexity of leases makes the task an overwhelming one;
- often, different parties report sales, then submit checks, automatically creating balances when the two amounts differ;
- the system automatically computes a royalty figure which is often different from the one reported (or paid); and
- the system cannot handle fractionated accounts below the lease level, and it is often impossible to identify the party responsible for a discrepancy.

The correct policy, we believe, is to continue to develop the improved system as rapidly as technically possible. Current target dates call for the conversion of payors to the new collection system during the period May 1981 to December 1982; and to implement the production accounting capability to compare sales to production reports by mid-1983.

Question. The 1979 GAO report listed a series of recommendations for GS to improve its collection efforts. What actions have been taken since that report to deal with the problem areas that were pointed out at that time?

Answer. In accordance with the GAO audit, which cited a number of deficiencies, the GS implemented recommendations for both the short range and long range.

A. Actions over the short range:

1. On April 2, 1979, instructions were issued to require field inspection personnel to assist accounting personnel in verifying sales data by determining the reasonableness of inventory and sales data shown on production reports. In addition, accounting personnel are required to advise field inspection personnel of any questionable data reported on the production reports for which the Accounting Section requires assistance and field investigation.

2. On March 21, 1979, instructions were issued to accounting personnel requiring the use of computer codes to identify reasons for account adjustments to be included in lease account records.

3. Actions were completed to provide for penalties for late reporting and paying.

4. The number of computer direct-tape-input entries has increased from about 16,000 (per month in 1975) to 90,000 (February 1981), and a GS computer programmer analyst now assists the major oil and gas companies in automating their sales and collection input.

5. The GS is attempting to maintain and improve the existing royalty accounting system to ensure that the current process does not deteriorate until the new system is completely operational.

B. Actions over the long range:

1. On December 15, 1978, the GS task force submitted a report proposing an improved royalty accounting system which concluded that a completely new system for royalty collections should be implemented due to problems in organization, management, personnel, system design, and other deficiencies. Some of the basic features of the new system follow:

   a. One office will provide uniform and timely management systems policy guidance for all accounting functions in order to achieve standardization and internal control.

b. Centralization of the general accounting functions for all collections, receiving reports, product valuation, etc., will be implemented insofar as practical.

c. Reduction of the number of reports required from industry by consolidating the sales and collection reports.

d. A new interactive automatic data processing system will use display terminals and be connected to the systems policy unit, internal audit unit, external audit unit, etc. It will include a reports screening process and will produce exception reports for the nonreceipt of reports, payments, etc.

e. The accounting system will be flexible to allow for growth in the number of leases to accommodate variations of different lease provisions under the amendments to the Mineral Leasing Act of February 25, 1920.

Question. How many lease accounts on Indian and Federal land show balances due? What effort has GS made to collect these accounts?

Answer. As of the beginning of Fiscal Year 1981 (October 1, 1980), Federal and Indian oil and gas lease account balances were as follows:

	No. of Accounts	Balances
Debits (possible underpayments)	9,962	$134,295,181.80
Credits (possible overpayments)	9,525	(152,539,584.36)
Accounts in balance	7,282	
Total	26,769	$(18,244,402.56)

Balances exist for many reasons including: (1) incorrect royalty computations, (2) inadequate identification of payments, (3) double payments by both lessee purchaser, (4) estimated payments, and (5) disputes and appeals. These differences cannot result in late or underpayment penalties until the errors are identified or the appeal settled. During Fiscal Year 1980, 1,471 lease accounts were audited and reconciled, 977 collection letters written, and $7,716,915 collected.

The Improved System will operate differently. The payor will also report. The system will employ what we call the "I.R.S." philosophy--a payor will submit his "1040" and a check which will be accepted as correct, subject to extensive subsequent electronic and onsite audit. Account balances will only occur as the result of an audit.

Question. Why has the GS accounting system been unable to detect that royalties due on Indian and Federal leases remain unpaid for long periods of time?

Answer. As stated above several times, the existing royalty collection, accounting, and auditing system has become critically inadequate primarily due to:

- o An increasing number of producing leases (from 11,127 in 1968 to over 26,000 in 1980);
- o Increased fractionalization of ownership, reporting, and paying interests within each lease;
- o Increased complexity in calculating and reporting lease royalties resulting from complicated marketing agreements, new pricing regulations, and special new responsibilities such as the calculation and payment of windfall profits taxes and amounts to be set aside for the Fisherman's Contingency Fund; and,
- o A staggering increase in the royalties earned on Federal and Indian leases (from $480 million in 1971 to an estimated $4 billion in 1981 to a projected $20 billion by 1990).

The Improved Royalty Management System, once in place, will be able to cope with the increases in growth, complexity, and importance of the activity over the decade of the 1980's.

Question. How does GS verify the price at which oil and gas is sold to ensure that all royalties due on leases are collected? How frequently is this process performed?

Answer. Oil and gas prices reported by payors are compared to Department of Energy regulated prices, gas contract prices, purchase statement prices, and field and area price bulletins. In addition, the existing system produces exception reports when reported prices vary unacceptably from expected prices. The exception reports are then used by the auditing staff as a part of a lease account audit. During Fiscal Year 1980, there were 499 such audits.

Question. How many oil sales were verified by Geological Survey personnel in 1980 by observing the measurement of oil sold? How does GS verify the quality and quantity of the oil sold?

Answer. Neither the existing royalty accounting system nor our inspection program have an automated means of verifying sales by direct measurement of either quality or quantity of product. The Geological Survey's inspection program is designed to verify that measurement equipment is of acceptable quality, properly installed, and functioning within specified tolerances. During Fiscal Year 1980, there were 28,283 field inspections. Producers supply reports of production which could be used to verify the reasonableness of sales reports, but the existing royalty accounting system is not capable of processing this information and it is filed and used only when subsequent events (such as alleged oil theft) warrant its use. The new royalty system will routinely compare reports of production to sales.

Our current manual techniques involve verifying pipeline system operators reports against sales run tickets, purchaser statements against sales reports, and gasoline plant reports against sales reports. Oil run tickets and purchaser statements are also audited as they show BTU content of gas, basic sediment and waste, and gravity and temperature corrections.

It should be noted that the Geological Survey has no off-lease authority. That is, we are unable to audit and inspect the product, in many cases, from the well to the point of sale where royalties are computed.

Question. GAO reported that production was not routinely matched to sales data. As a consequence, it appears you had no way of determining what portion of production was sold and therefore you could not ascertain if all royalties owed were collected. Are you doing this now?

Answer. For the offshore lease, which tend to be very large and fewer in number, we presently compare production reports from pipeline system operators against sales reports on a sampling basis. In addition, gas plant reports showing allocations of product to leases are routinely compared to sales data.

For the onshore leases, production and sales data are compared on a limited basis due to the large number of leases and accounts involved, and to the fact that the process is now very labor-intensive. In 1979, instructions were issued to both accounting and field inspection personnel requiring cooperative analysis of production and sales. Field inspectors assist accounting personnel verifying the reasonableness of sales and inventory data or production reports. Likewise, accounting personnel alert field inspectors to any questionable data reported on production reports.

Again, the Improved Royalty Management System will routinely compare sales and production data. Sudden changes in production, and material differences between sales and production data would produce exception reports for audit review and verification by inspection personnel.

Question. What actions must be taken to ensure that all royalties due are collected and distributed in a timely manner to the Federal Government and Indians? What are the problems presently faced by GS in administering its accounting functions? How can these problems be avoided?

Answer. As stated above, we are presently taking the actions needed to ensure timely and accurate reporting and paying of royalties--that is, we are proceeding as rapidly as administratively possible to put an improved system into place. The technical problems are, in fact, overshadowed by the administrative constraints involved in contracting (particularly in consulting and ADP services) and staffing (involving a reorganization). We are presently receiving priority attention within the Geological Survey in acquiring the administrative support needed to meet our technical goals.

Mr. YATES. We are going to recess the general question area for the Geological Survey now and request that you come back for a further hearing at ten o'clock on March 20.

Thank you very much, gentlemen.

FRIDAY, MARCH 20, 1981.

UNITED STATES GEOLOGICAL SURVEY

WITNESSES

DOYLE FREDERICK, ACTING DIRECTOR
DALE BAJEMA, ASSISTANT DIRECTOR FOR PROGRAMS
ROBERT L. WESSON, ASSISTANT DIRECTOR FOR RESEARCH
HILLARY A. ODEN, ACTING ASSISTANT DIRECTOR FOR RESOURCE PROGRAMS
JAMES F. DEVINE, ASSISTANT DIRECTOR FOR ENGINEERING GEOLOGY
BETTY M. MILLER, ASSISTANT DIRECTOR, EASTERN REGION
PHILIP COHEN, CHIEF HYDROLOGIST
DALLAS PECK, CHIEF GEOLOGIST
DON E. KASH, CHIEF, CONSERVATION DIVISION
STAN DOREMUS, OFFICE OF THE SECRETARY, OFFICE OF BUDGET, DIVISION OF PROGRAM REVIEW

WATER POLICY

Mr. YATES. We have a general concern that there is no overall, well-coordinated water policy in this country. When the Secretary was before us, he indicated he was doing away with the Office of Water Research and Technology and replacing it with some kind of a council.

I do not know where that is going to lead in terms of attacking the problem. I think he intends that it be dealt with principally on a State and local level. I somehow have the opinion that the Geological Survey has a major role in dealing with the question of water supply for the future.

Is my impression correct? Do you have a major function to perform?

Mr. FREDERICK. Mr. Chairman, we do feel that we have a major function in terms of knowledge of the water resources in the United States, and we do have fairly substantial programs in that direction, as you are aware.

Mostly our function, though, is in the collection of information with regard to water quality, water quantity, and perhaps some activity in the area of water use.

In addition to that, we also have programs to better understand the problems related to water difficulties specifically, in terms of understanding the techniques and exporting those techniques so indeed they can be used by the local communities to deal with their specific problems, in terms of waste and water, as an example. Some of our new program proposals this year begin to address those kinds of problems.

With respect to the Secretary's action regarding the Office——

Mr. YATES. You do not have anything to do with that, do you?

Mr. FREDERICK. No, sir, we do not have anything to do with the decision.

We are coordinating with the staff in the department in terms of examining the responsibilities of the Office of Water Research and Technology and in that way deciding whether or not there are

functions that were carried on there that the Geological Survey ought to pick up.

Mr. YATES. What conclusion did you come to?

Mr. FREDERICK. Well, we are just in the initial negotiations, actually. Stan Doremus is the department's representative on that subject, and we are beginning to talk to Stan now in terms of the responsibilities.

There perhaps are some items in terms of water research and maybe water research information coordination that we ultimately will get involved in.

Mr. YATES. What is the advantage of shifting items of water research over from that office to yours?

There you have an ongoing administration. If you do begin to take on the task of working on water research, won't you have to set up some kind of a unit comparable to that office in doing it, or are you able to do it without expanding any of your existing operations?

Mr. FREDERICK. Well, sir, I think that would depend on the type of activity. At the moment we are looking at functions that could indeed be assumed within our existing structure and within the program that we have.

Mr. YATES. What about Wrightsville Beach and Roswell, New Mexico? Does your review contemplate the possibility of taking those over?

Mr. FREDERICK. Mr. Chairman, I am not familiar with that. Phil, do you know?

Mr. YATES. Are you familiar with that?.

Mr. COHEN. Are those the saline water conversion——

Mr. YATES. Yes, those are.

Mr. COHEN. There have been no discussions that I am aware of with the Geological Survey relating to the saline water conversion.

WATER RESOURCES SCIENTIFIC INFORMATION SYSTEM

Mr. YATES. What kinds of research are we talking about then?

Mr. DOREMUS. The only thing that we have discussed so far, Mr. Chairman, is the Water Resources Scientific Information System. That is the system——

Mr. YATES. You mean data collecting and that sort of thing?

Mr. DOREMUS. That is data collection and abstraction and a computer system that permits researchers to find out whether or not work is going on in a field in which they are particularly interested. It is a rather large, rather extensive system that catalogs current water research issues.

Mr. YATES. That really is not research, is it?

Mr. DOREMUS. It certainly supports research.

Mr. YATES. It supports research. It is research in keeping with what you have been doing, and that is the collecting and distributing of information.

Mr. FREDERICK. Yes, sir.

Mr. YATES. However, as far as doing research is concerned, you are not going to do that, then, as the Office of Water Research did?

Mr. FREDERICK. We do not anticipate, Mr. Chairman, that we will get involved very deeply in those kinds of activities. Yes, sir, that is correct.

Mr. YATES. That is right. We have a very serious question as to what to do about seawater research and the kind of implementation of that research in the technology of reverse osmosis and membranes.

You are not going to get into that at all?

Mr. FREDERICK. No, sir. We do not anticipate getting involved in those kinds of things.

Mr. YATES. It is just a question of collection of data when you are looking at that possibility.

Do you happen to know whether it is contemplated that any other agency in the Government would take on the task of membrane research?

Mr. DOREMUS. As far as I know, Mr. Chairman, it is not.

Mr. YATES. It is not? That is not part of your discussion?

Mr. DOREMUS. No, sir.

NATIONAL ASSESSMENT OF WATER SUPPLY AND DEMAND

Mr. YATES. Okay.

Well, what is the condition of the National Assessment of Water Supply and Demand that began this year, at the beginning of this year?

Mr. FREDERICK. I will call on Mr. Phil Cohen.

Mr. YATES. You are assessing our problems in the field of water, aren't you?

Mr. COHEN. The Geological Survey program that began this year is taking the first step for our agency to become involved in the National Assessment of Water Supply and Demand.

Mr. YATES. Who has been doing it up to now?

Mr. COHEN. The Water Resources Council.

Mr. YATES. Have they been doing very much?

Mr. COHEN. They have published two national assessments.

Mr. YATES. Yes?

Mr. COHEN. Two years ago we developed a memorandum of understanding between ourselves and the Water Resources Council that, with regard to the next assessment, both agencies would contribute thereto.

The thrust of our budget proposal and the funding this year is to develop the in-house wherewithal to enhance our ability to contribute to that national assessment.

Mr. YATES. Well, what is the condition of it? How much more has to be done to complete the assessment?

Mr. COHEN. As far as the Geological Survey is concerned it is at the very, very early stages of development in-house. We are just beginning——

Mr. YATES. How long will it take you?

Mr. COHEN. If the funding support and other resources were available and the plans developed between the two agencies, I would estimate that our first major contribution to an overall assessment is probably about two or three years down the road.

Mr. YATES. Is there adequate funding in this budget for you to carry on your work?

Mr. COHEN. The level of funding is adequate for us to take these initial steps to develop the wherewithal to make an assessment.

Making a national assessment is something which requires techniques and methodologies that we do not now have in-house in the Geological Survey. The resources that we are expending this year are to develop those methodologies in-house.

There is never a 100 percent assurance that we will be successful but we are very optimistic that these first steps that we are taking, working with the Bureau of the Census, working with Harvard University, working with the regional commissions, will give us this, but it is a very modest first step.

Mr. YATES. The study you speak of was contemplated as being a two-agency study, yours and the Water Resources Council, wasn't it?

Mr. COHEN. Yes, sir.

WATER RESOURCES COUNCIL

Mr. YATES. What if the Water Resources Council is disestablished? What happens then?

Mr. COHEN. Those questions have not yet been addressed, except——

Mr. YATES. Those questions have not been addressed by whom?

Mr. COHEN [continuing]. Except at my level. My colleagues and I are of course concerned about what will happen in the future with regard to this activity. As of the moment, I have not been a party to discussions at levels above me as to how such an assessment would take place except on an informal, colleague-to-colleague basis.

Mr. YATES. Well, suppose WRC is disestablished? Does that mean you take on the study itself? You do not know the answer to that?

Mr. COHEN. No, sir. These are decisions which would be made at much higher policy levels.

Mr. YATES. Well, what is the committee supposed to do about the funding, then? What are we supposed to do about providing funds for the study?

I suppose you ought to put in the record some kind of a statement as to whether the study has any importance.

[The information follows:]

SIGNIFICANCE OF WATER-RESOURCES ASSESSMENTS

The Geological Survey believes that its study involving research into methodologies for making water-resources assessments is highly significant. Irrespective of what agency or agencies make the assessments, and irrespective of whether such assessments are made at a local, State, regional, or national level, the work that the Survey is doing and proposes to continue to do in 1982 will provide much needed procedures by which the Survey can assure that the hydrologic information it gathers throughout the full spectrum of its program is fully responsive to the needs of decisionmakers and policy makers at all levels of government and in the private sector.

Mr. YATES. We are doing away with the Water Resources Council. Apparently that portion of its function is conceived not to have very great importance then, is it?

Mr. COHEN. That, as you know, sir——

Mr. YATES. Is it a matter of policy that has to be determined on a higher level?

Mr. COHEN. No, it is a decision that apparently has been made at fairly high levels of Government.

Mr. YATES. Yes.

Mr. COHEN. With respect to one aspect of your question, namely the funding that is now in the Geological Survey's budget, we think it is of vital importance, irrespective of the final decision as to how and where assessments are made or if in fact they are made at all. We think that the efforts that we are now making will contribute significantly to any assessment of the Nation's water resources.

Mr. YATES. The amount of money that is in this budget will not permit you to take on the functions for both GS and WRC, will it?

Mr. COHEN. That is correct.

Mr. YATES. It will not?

Mr. COHEN. It will not.

Mr. YATES. All right, in the event you have to take on the functions of WRC as well, how much more money would you need?

Mr. FREDERICK. We will have to supply that for the record, Mr. Chairman, if that is okay. We will take a look at it and see.

[The information follows:]

WATER-RESOURCES ASSESSMENTS FUNDING

To implement a full level of involvement in its areas of competence in water-resources assessments, the U.S. Geological Survey would require resources, on a continuing basis, of $3.0 million per year and 20 full-time equivalent positions and would include the following six steps:

1. Quantify and organize data on water resources quantity, quality, development, and use at subregional, river-basin scale in cooperation with and to meet the continuing data needs of the water planning, development, and management agencies at all levels of government—local, State, and Federal.
2. Coordinate and provide a forum for local, State, and Federal agency efforts at identifying water issues and problems and their possible resolutions.
3. Analyze and evaluate the interrelationships of water supply, use, and quality to aid in more effective water resources policy analysis, planning, and management.
4. Prepare and disseminate information concerning water resources situations in those subregions experiencing temporal and continuing difficulties in water supply-demand balances, including identification and projection of troublesome trends.
5. Prepare aggregated and integrated national summaries of the above at times or intervals as specified by the Congress.
6. Seek improved methodologies to accomplish the above.

Mr. YATES. What is the estimated total cost of the assessment?

Mr. FREDERICK. I am not sure. Do you know, Phil?

Mr. COHEN. No.

One of the reasons that I have to answer your question this way is that there are a broad range of activities within the Water Resources Council and there are a broad range of activities within the Geological Survey related to water resources assessments.

Mr. YATES. Why is the upper level doing away with the Water Resources Council, then? Doesn't it have a function to perform?

Mr. COHEN. I have not been a party to those deliberations.

WATER QUALITY

Mr. YATES. Okay.

When you were last in here, you did testify as to the trend in water quality in this country, didn't you? Didn't you show a chart showing that?

Mr. COHEN. We had no charts. We discussed the issue and talked about it in generalities.

Mr. YATES. Yes. Refresh my memory. What did you say, that it is improving or deteriorating?

Mr. COHEN. My response was—and unfortunately it had to be a fairly complex one—the awareness of contamination has increased simply because of increased public awareness, new, refined techniques to look for pollutants, and in all likelihood the absolute amount of contamination which probably is increasing.

However, what we are seeing in the media now, all of the attention and concern probably reflects more an increase in awareness than an increase in absolute pollution itself, which is not to say that pollution is not widespread. There is widespread pollution. In places we can document that it is increasing but in other places the situation is improving.

Mr. YATES. Is the situation improving as a result of the installation of machinery to deal with the water, or are EPA standards helping? Which is it?

Mr. COHEN. There are a broad range of——

Mr. YATES. Reasons?

Mr. COHEN [continuing]. Techniques and procedures, some of which involve hardware, some of which involve nonstructural changes that are being made, in zoning regulations for example.

As society has become more and more aware of the problem, the problem has been attacked from every direction. EPA has been attacking it in a multifaceted way, State and local agencies have been attacking pollution in a multifaceted way, both with some degree of success.

Mr. YATES. With some success? Is the problem about to be overcome, then?

Mr. COHEN. I think it is fair to say the problem is not about to be overcome. Progress is being made——

Mr. YATES. On a Bo Derek scale of 1 to 10, that being the water pollution problem, what progress has been made in dealing with the problem by the attack you just described?

Mr. COHEN. I would find it impossible to put an absolute number on the scale but let me say that the number is X and we can define that and debate that at the end. The question then is, if I understand your question correctly——

Mr. YATES. I really was never very good at algebra.

Mr. COHEN. If I understand your question correctly, what has been happening is that the situation is hovering around X depending upon one's perception of the problem.

Mr. YATES. I would interpret that to mean that it is not even on the scale of 1 to 10.

Mr. COHEN. No, X is on the scale of 1 to 10 but for me to say——

Mr. YATES. Where are you going to put X?

Mr. COHEN. For me to put a value on X is to put a social value on the problem rather than a quantitative, scientific value on the problem.

Mr. YATES. Well, the social value on the problem I would think would be 10. I would think that would be a very great social problem.

Mr. COHEN. Yes, yes.

Mr. YATES. All right, but I thought I understood you to say that the problem is being attacked by many forces. We have to rely on you to tell us the magnitude of the problem, and your chart showed

us the magnitude of the problem, your description showed us the magnitude of the problem.

I asked you then, what success are we having in dealing with that huge problem?

Mr. COHEN. My response, sir, was that we can point out very, very clearly and very precisely areas in which there are deteriorating water quality, areas in which the water quality has remained about the same, and areas in which water quality is improving.

If your question—and you have asked this kind of question before—is, from a national perspective what has happened, in aggregate, my response to you would be that that is what a national assessment-type study would be directed toward answering. We do not now have the wherewithal to provide those answers.

STATE AND LOCAL RESPONSIBILITIES

Mr. YATES. Well, is this a problem that the States and local governmental units can handle by themselves? That is what the administration is pointing toward, isn't it?

Mr. COHEN. I am sorry, I do not understand your question.

Mr. YATES. Is this a problem that the States and local governmental units can handle by themselves or is it necessary for the Federal Government to have a major role in this?

Mr. COHEN. That, sir, from my point of view at least is a philosophical question which goes beyond my area of expertise.

Mr. YATES. Well, do you think it goes beyond the bosses' area of expertise?

Mr. COHEN. No, I would think the bosses—if you are referring to the Secretary of the Interior and the President of the United States—are directing their efforts to just these kinds of questions and making these kinds of decisions.

Mr. YATES. Well, I do not have any knowledge as to what their decisions are yet.

Mr. FREDERICK. Let me respond to some of those questions, Mr. Chairman.

Mr. YATES. Okay.

Mr. FREDERICK. We think there are some technical problems.

Mr. YATES. We have been talking for 10 minutes and I do not even think we have gotten anywhere.

Mr. FREDERICK. Sir, we think there are technical problems that are indeed the responsibility of the Federal Government and we believe that within the Geological Survey's program we are attacking those in a reasonable way.

Mr. YATES. Well, let me point out that it is not enough to say that these are problems that are being addressed by the President and by the Secretary. We have a function to perform here, too, and that is providing funds in the event that there is a national aspect to this problem and funds which should be approved to deal with the problem.

Merely saying that it is being dealt with on a national level does not answer us in this committee. We have to rely on you to give us some of the answers.

Now if it is one that the States can handle, why don't you tell us that? If it is one that requires your intervention as well, we should know that, too.

Mr. FREDERICK. Sir, I think that depends on whether one is talking about policy decisions that involve the States and local communities with regard to what ultimately must be done or how water ultimately will be allocated to the different uses. We believe that is a State and local government kind of problem for the most part. There are some extenuating circumstances where there are regional concerns but——

WATER QUANTITY

Mr. YATES. What do you do about rivers that cross State lines?

Mr. FREDERICK. Yes, sir, I say there are some circumstances where there are involvements on a multistate basis and they ought to be treated on a regional approach.

Mr. YATES. Are they being treated on a regional approach now?

Mr. FREDERICK. Yes, sir, I think so.

Mr. YATES. Okay. Tell us about it.

Mr. FREDERICK. Well, perhaps we can use, if we wish, one of the illustrations that Mr. Cohen used last time in terms of the Delaware River and the questions regarding the water supply in the Delaware River in time of drought.

We think that our role is to provide information in terms of the water quantity which is fed into the system for decisionmaking purposes, and that indeed is handled that way. We think that is an appropriate role for the Survey and indeed we think that the ultimate role in the final decisionmaking is——

Mr. YATES. Let's take a specific case, then. Let's take the case of the State of New Jersey. We have testimony from them before us, testimony submitted to this committee in which toxic wastes were seeping down into the water tables beneath the State of New Jersey. This was in connection with the Pinelands Barren proposed cooperative park between the State and the Federal Government.

What is the role of the Geological Survey there?

Mr. FREDERICK. Sir, we believe the role of the Geological Survey in that case is to provide information regarding a better understanding of how the waste affects the area, to provide information that can be used by the local community, if indeed it is a localized problem, to understand the situation, to better assess what problems might be caused, and to better understand mitigation techniques that might be used to correct that problem. Part of our Toxic Waste——

Mr. YATES. Is that your function or EPA's function?

Mr. FREDERICK. Well, we think our function in coordination with EPA includes that basic research. We have a Toxic Waste Program that——

Mr. YATES. Is it your function only to say that there is a source of water and provide information on the water level or water table? Is it not your function also to suggest the treatment of water and what needs to be done to protect it.

Mr. FREDERICK. We think we have some role in that, Mr. Chairman. That is one of the programs that we propose in this budget, and that is to better understand the percolation of the chemicals through the system and understand what the impacts might be and what the mitigation measures might be, not on a site-by-site basis

throughout the entire country but to provide the basic information that one could use to begin to make those decisions.

Is that fair enough, Phil?

We do have a toxic waste groundwater contamination proposal that addresses those issues.

NATIONAL WATER ASSESSMENT

Mr. YATES. Well, I suppose we ought to hold up this funding until we know what the Department of the Interior intends to do about the national assessment.

Mr. FREDERICK. Mr. Chairman, are you talking about the Geological Survey funds in this context?

Mr. YATES. Yes.

Mr. FREDERICK. Well, sir——

Mr. YATES. As I understand what has been proposed, we have your justification which says this [reading]:

> The objective of the national assessment is to support the continuing review and formulation of water policies and the appraisal and assessment of the national water supply and demand situation by organizing and presenting available data in ways that facilitate analysis of current and foreseeable national water issues.
>
> The Water Resources Council, numerous national commissions and other Federal agencies are required to make assessments of the Nation's water resources in formulating major policy decisions . . . . Those efforts have been seriously hampered by the lack of up-to-date, consistent, and reliable data, as well as techniques . . . little has been done to integrate environmental, socioeconomic, and hydrologic data collection efforts to support analyses of the Nation's water situation. Basic information, such as the location of . . . public water supplies, the cost of water supply development, and the quantity of water use is often incomplete and remains scattered throughout the files of many Federal and State agencies.

Then it is to develop the "methodologies and procedures for assessing water supply," and so forth.

However, as I understand it you are just an arm or an agency which is in the nature of an outside contractor to obtain information for the Water Resources Council which has the prime responsibility of performing this function.

Mr. FREDERICK. Yes.

Mr. YATES. If that is true, I assume just as you are one agency supplying data for the Water Resources Council, the EPA acts in this role and I do not know how many others.

Can you tell us how many others are engaged in this?

Mr. COHEN. The Corps of Engineers, WPRS, SCS, NOAA, EPA, and Council for Environmental Quality, those are the big players.

Mr. YATES. Okay, those, and they are supposed to channel the information to the Water Resources Council which then decides what to do with all this information.

Is that correct?

Mr. COHEN. In the past, the Water Resources Council has been the focus of the preparation of a national assessment.

Mr. YATES. Okay. It still is at the present time.

Mr. FREDERICK. Yes, sir.

Mr. COHEN. Yes.

Mr. YATES. It will continue to be until it is disestablished, which is proposed by the Secretary.

That being so, why should we fund this work in the absence of knowing where the Secretary is going? Does it make sense to you?

Mr. FREDERICK. Well, sir, we think that these funds are usable for many purposes. The methodology is one that I think the country would need whether or not there was an aggregate, overall national water quality assessment in terms of the Water Resources Council proposal at the moment. I think the techniques and methodology that we would develop could indeed be used if one ultimately decides that that is a good program and it ought to go ahead.

Absent of that, we do have agreements in many areas of the country with regional basin commissions, with individual States, and we believe that that methodology can be used to put together, section-by-section or State-by-State, important information that can be used. Therefore, we would argue for the funds regardless of the decision.

Mr. COHEN. May I add this point, Mr. Chairman?

Mr. YATES. Sure.

Mr. COHEN. Much of what we are doing in the Geological Survey in the area of water-related activities, in one form or another, has in the past and should in the future become part of a national assessment. One of the questions that you have been raising is, who is going to do that national assessment.

In response to your question as to why this level of effort of national assessment R&D should be funded in the Geological Survey, I would respond this way: It is our intention that the information that we develop throughout our program be as responsive as possible to the needs of as many users as possible. One might view a national assessment effort as being one user.

The level of funding that we are requesting will enable us, in-house, to put a sharper and more appropriate focus on virtually our entire range of efforts so that we can support a national assessment whether it is done at the Water Resources Council, whether it is done at agency X, or as Mr. Frederick said, whether it is done at a regional or a local level.

Mr. YATES. How much did you ask the department for, for this appropriation?

Mr. FREDERICK. Phil can answer that.

Mr. COHEN. We asked the department for $350,000.

Mr. YATES. For fiscal year 1982, or 1981? We approved $225,000, according to this justification.

In 1981 we made $350,000 available to you. Correct?

Mr. COHEN. Yes, sir.

Mr. YATES. Okay. Did you want to say something?

Mr. BAJEMA. I was just going to say that we did not ask the department or OMB for an increase.

Mr. YATES. Well, now, is this an adequate amount for your purposes?

Mr. COHEN. As I testified earlier, sir, this is the first step that we are taking in attempting to do some research and development of procedures for effectively addressing a national assessment. The Geological Survey has never been directly involved in national assessments, only to the extent that we have provided information. As I said, we would like to make sure that the information we provide is as relevant and as appropriately formated as possible for anyone's national regional, or local assessment.

SURVEY INVOLVEMENT IN WATER ASSESSMENT

Mr. YATES. Okay. What you are saying, then, is that you are going to set forth what you consider to be a plan for assessment. Is that what you are saying?

Mr. COHEN. We are not even going that far. We are saying we are going to establish a small focal point within the Geological Survey to assure that we are doing all that we can, that our data base is as responsive as possible to the needs of national, regional, or local assessment. It is a very modest undertaking.

Mr. YATES. Somewhere somebody is collating your activity with the Council on Environmental Quality, and what was the third one, EPA?

Mr. COHEN. EPA, CEQ, the Departments of Agriculture and Commerce, the Corps of Army Engineers, are all collecting water data or water information.

Mr. YATES. Well, who is collating all that?

Mr. COHEN. For purposes of national assessment, overall national assessment, it has been the Water Resources Council.

Mr. YATES. Okay.

Mr. COHEN. For purposes of water quality assessment, which is a subset, it has been the Council on Environmental Quality.

Mr. YATES. Therefore, what you are saying is that each of the Departments that you named is carrying on, within its own responsibility, the preparation of a statement to indicate what your contribution could be in developing a plan for——

Mr. COHEN. No, I did not mean to imply that.

What I meant to imply is, each of these agencies is collecting information which can and is being used, brought together in what has been referred to in the past as a national assessment.

Mr. YATES. Well, then, there is no plan. You are just collecting information, is that what you are saying.

Mr. COHEN. No, there is a plan.

Mr. YATES. Is that going to be——

Mr. COHEN. There certainly is a plan in our department.

BROAD RANGE HYDROLOGIC STUDIES

Mr. YATES. A plan to do what?

Mr. COHEN. To conduct a broad-range, scientific set of hydrological studies and to expend a modest amount of effort to make sure that the results of those studies support, among other things, a national assessment by some other agency.

As I said, we entered into a formal agreement with the Water Resources Council that we would in fact do this, try to sharpen up the information that we collect in our entire base so that they can use it more effectively. Therefore, the plan——

Mr. YATES. Now are each of the other agencies doing the same thing?

Mr. COHEN. I am unaware of it.

Mr. YATES. Aren't you talking to them?

Mr. COHEN. The memorandum of understanding was between us and the Water Resources Council.

Yes, we are talking to them. Yes, we do know that there are inputs from the other agencies to the Water Resources Council but

I do not know whether they have a formal document similar to the one that we have.

Mr. FREDERICK. Phil, would it be fair to say——

Mr. YATES. I can understand this now but to me it makes less and less sense to do away with the Water Resources Council. What is the purpose of collecting all your information and funneling it into a Water Resources Council, which I understand has the major responsibility for developing the plan based on the information you and the other agencies are giving it? Is my analysis correct?

Mr. COHEN. They have been the focal point for preparation of national assessments.

Mr. YATES. Is there any other agency which has assumed this kind of focal-point responsibility? Do you know?

Mr. COHEN. Not that I know of.

Mr. YATES. Then, this is the focal-point agency. Why do away with it?

Mr. FREDERICK. Mr. Chairman, the information will be used, of course, as we mentioned earlier.

Mr. YATES. Who is going to use it, though?

Mr. FREDERICK. Many people will use it. As far as the official, overall national assessment is concerned, that is the——

PALEY COMMISSION

Mr. YATES. Which is presumably what we ought to be taking. It is a very important assessment, right? We haven't had one since the Paley Commission, have we?

Mr. COHEN. I am not quite sure of the date of that commission.

Mr. YATES. The date is 1952.

Mr. COHEN. We have, the Water Resources Council has published two assessments.

Mr. YATES. Two assessments?

Mr. COHEN. Yes. The last one was in the mid-seventies.

Mr. YATES. In the mid-seventies?

Mr. COHEN. Yes, the mid-seventies.

Mr. YATES. How good was it?

Mr. COHEN. That is a value judgment.

Mr. YATES. Well, you are our judge. How good was it?

Mr. COHEN. It was a good document.

Mr. YATES. You are fencing with me. All morning you have been fencing with me.

Mr. COHEN. You are asking me to make a value judgment on——

Mr. YATES. Who else am I going to call on?

Mr. COHEN. If you pose the question, "Could it have been better?" The answer is, yes.

Mr. YATES. Obviously. You would be surprised at how many witnesses come in before this committee and say, "Well, we have to do better," when responding to my questions as to why their appropriations were cut.

Now you say that they could have done better, it could have been a better report. Did I understand you correctly?

Mr. COHEN. Yes.

REGIONAL AQUIFER SYSTEMS ANALYSIS

Mr. YATES. It could have been a better report.

Well, when do we get a report that is good?

Mr. COHEN. We are taking very specific actions throughout the budget. The Regional Aquifer Systems Analyses study, which will give us for the first time a national picture——

Mr. YATES. Why don't you do the report, then? Why leave it to the Water Resources Council?

Mr. COHEN. That was a matter of legislation.

Mr. YATES. Suppose we give it to you, out of this committee? Could you do it?

Mr. COHEN. Do we have the technical wherewithal to do it?

Mr. YATES. I did not ask you that. I asked, could you do it? You have to decide whether you have the technical wherewithal and whatever else goes into making up the report.

Mr. COHEN. We are taking steps——

Mr. FREDERICK. Yes, sir, we could do it.

Mr. YATES. What would such a study cost?

Mr. FREDERICK. We would have to price that out, sir.

Mr. YATES. All right.

[The information follows:]

ANNUAL FUNDING

To implement a full level of involvement in its area of competence in water-resources assessments the U.S. Geological Survey would require resources, on a continuing basis, of $3.0 million per year and 20 full-time equivalent positions.

Mr. COHEN. Mr. Chairman?

Mr. YATES. Mr. Cohen.

Mr. COHEN. I think it is important that we add at least one other point.

Mr. YATES. One caveat.

Mr. COHEN. When you say, could you do it, and you say that I am fencing, we need to sharply define what "it" is.

IMPLICATIONS OF WATER SITUATION

Mr. YATES. Good. How would you define it?

Mr. COHEN. Some people define a national assessment to include the social political, and economic implications of the water situation in the United States. That would be completely new to the Geological Survey.

We have in-house a very, very small cadre to address those issues, again, simply to try to make our basic scientific information more relevant to individuals who might use that information.

When you say, could you do it, I have to figure awful hard as to what it is you mean by "it" and what the long-term implications are. If we were requested to do "it" we would have to bring people on board.

Mr. YATES. You would have to find out what "it" was.

Mr. COHEN. In the fullest sense of the definition of a national assessment, we would have to bring people and academic talents that we do not now have on board, and in fairly large numbers.

CONTRACTED NATIONAL ASSESSMENT

Mr. YATES. Let's explore the alternatives for a moment.

The alternatives are to contract it outside, aren't they? That is one alternative.

The second alternative is to have a commission like the Paley Commission, to have as a national assessment, to set up a group of so-called experts to make an objective report which would be, I assume, comparable to the Water Resources Council. Set up a group of outside citizens and they would set about the job of issuing their report based upon the data that you collect and the others collect.

Mr. FREDERICK. Yes, sir.

Mr. YATES. That is what is going to happen. I do not know what the administration is going to propose but apparently your job has to be done, CEQ's job has to be done, all of the agencies you have outlined have a job to perform here and then somebody is going to have to put all that together, aren't they? Right? Are we in agreement?

Mr. COHEN. Yes, sir.

Mr. YATES. That is good. I am glad.

How are we going to do that? We better mention that fact in our report, then, if we do not get a substitute for the Water Resources Council somewhere along the line.

How do we get a report on what the overall plan, and scope of this is? We have to look at the justification for this before the subcommittee to which the Water Resources Council reports, don't we?

Let's do that, and I think maybe we might want to put that in the record to show what the overall program is supposed to be, of which you are only a small part.

Mr. FREDERICK. We are a part, yes, sir.

[The information follows:]

WATER RESOURCES MANAGEMENT POLICY

The Nation has a wide range of options regarding how to manage its water resources. It is the Geological Survey's role to provide impartial, credible scientific information to support the option or options selected. Policy decision at the local, state, and National levels, and legislation have and will continue to define the "overall program" of water resources management policy. A full definition of what the program should be is far beyond the mission responsibilities of any one agency, and has and will continue to be the subject of debate. It will continue to evolve in a manner that reflects the views of society, its elected officials, and the courts.

ACID RAIN

Mr. YATES. Do you have anything to do with acid rain?

Mr. COHEN. Yes, sir.

Mr. FREDERICK. Yes, sir.

Mr. YATES. What do you do about "it"?

Mr. COHEN. We have been conducting acid rain studies for more than 15 years, largely as part of our Federal/State cooperative program.

Mr. YATES. Oh, you have even got a chart on it. Let's look at this. We need visual/audio help here.

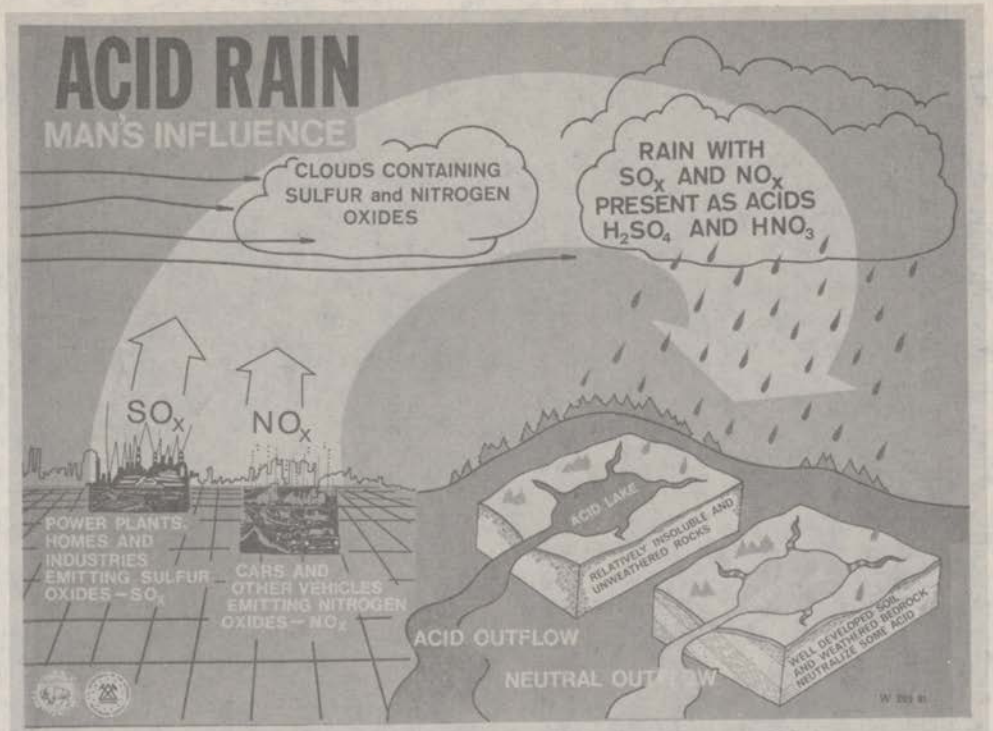
Canada is angry with us because they say we are causing acid to rain on their country. Is that true? Do you know?

Mr. COHEN. I think it is generally accepted that the acid precipitation that we are seeing in the northeastern part of the United States also occurs in Canada, and it is generally accepted——

Mr. YATES. What is causing that in the Northeast part of our United States? Does that chart show it?

Mr. COHEN. It is shown by this chart.

[The chart follows:]



Acid rain and other forms of atmospheric deposition significantly affect the quality of lakes, streams, and ground water in certain parts of the United States. The diagram shows the causes of acid rain, that is, how man's activities produce strong acids in atmospheric deposition. It also illustrates one mechanism, neutralization of acid by some soils, which can mitigate the effects of acid rain on water quality. The Geological Survey's program, which is part of an overall interagency investigation of the acid rain problem, is designed to measure the amount, character, and variability of atmospheric deposition nationwide and to determine the effects of acid rain on soils, rocks, and natural waters.

Mr. YATES. Would you explain the chart for the record, please?

Mr. COHEN. Yes, sir.

The chart depicts gases, oxides of sulfur and oxides of nitrogen, being formed as the result of in the one case the burning of hydrocarbons, power plants, homes, and so on, issuing the oxides of sulfur the oxides of nitrogen largely being emitted by automobiles and other passenger vehicles.

These gases find their way into the atmosphere and they combine with water to form——

Mr. YATES. Combine with what?

Mr. COHEN. Water, moisture, to form largely sulfurous and sulfuric acid and nitrous and nitric acid. The precipitation containing sulfuric acid and nitric acid then falls upon the land surface.

Mr. YATES. That is acid rain.

Mr. COHEN. That is acid rain in a narrow definition of the term, acid rain. Sometimes the problem is broadened and referred to as atmospheric deposition. In addition to acids, there are other chemicals that are falling to the earth dissolved within precipitation that are causing different problems.

Therefore, in one's mind's eye we can visualize this as the industrial heartland of the United States, in the Great Lakes and other areas, where these gases are being carried aloft, being swept easterly by the circulation of the air masses over the United States, and falling as precipitation in the northeast part of the United States and some of it falling as precipitation in Canada.

Mr. YATES. Does GS measure the extent of acid rain?

Mr. COHEN. We are doing a substantial amount of work. There are many other agencies that are also involved. As a matter of fact, we have before you a request for a new thrust in acid rain. It represents the efforts of a very intensive interagency task force activity which resulted in an interagency plan, and GS is playing a significant role in this multiagency effort.

Mr. YATES. Who is correlating all your activities?

Mr. COHEN. The task force was headed by three agencies, the Environmental Protection Agency, NOAA, and the Department of Agriculture, in part because of historical reasons and in part because of the recent synfuels legislation which spelled out a role for NOAA in acid rain.

Mr. YATES. Has there been sufficient progress made in that study to indicate what ought to be done to check it?

Mr. COHEN. The study is a new study, the funding for which is being requested for the first time in this budget.

Mr. YATES. Where do the nitrogen oxides come from; do they come from the diesel exhausts?

Mr. COHEN. Nitrogen oxides come mainly from internal combustion engines, mainly from gasoline engines.

Mr. YATES. I thought that was SO rather than NO.

Mr. COHEN. I believe in most cases the degree of refinement of the petroleum is such that most of the sulfur is gone by the time you get to the gasoline stage.

Mr. YATES. When will your study be completed? When is it scheduled to be completed? I assume your target date is the same as all the other agencies.

Mr. COHEN. Generally, a GS budget that formulates projects of this sort is on a 3- to 5-year cycle, so I would anticipate we would be at a milestone, within the GS we will be at a milestone in three years.

That may or may not it is often the case with complex phenomena of this sort enable us to say that we are finished in terms of studying the phenomenon. Maybe it will take us that long just to fully understand what the phenomenon is, as opposed to making recommendations for attempts to alleviate it.

Mr. YATES. Is three years a reasonable period for a study? Should you expedite that study?

Mr. COHEN. Not really, I do not think so.

Mr. YATES. Time is required to really test it, then, isn't it?

Mr. COHEN. These are basic research components that we are undertaking and it is difficult to speed these up.

Mr. YATES. Well, we have to wait and I guess Canada has to wait also doesn't it?

Are you cooperating with the Government of Canada in this study by any chance?

Mr. COHEN. We have been having many formal and informal contacts with them. As of the moment we do not have a formal cooperative program. We may have one within a few months if travel ceilings allow it.

TOXIC WASTES

Mr. YATES. Now you are studying the possible contamination of groundwater by toxic waste. That was cut back by $500,000, wasn't it?

Mr. COHEN. Yes, sir.

Mr. YATES. How did that affect your study?

Mr. COHEN. It will eliminate the lower-priority elements of that program. The elements that will be eliminated will be a number of field tests at several locations which as a matter of fact have not yet been selected. However, we think that we can defer the field work for a year or perhaps two, and get underway with the more fundamental issues that we need to attack in toxic wastes.

Mr. YATES. Are you saying then that the program is not hurt by the elimination of the $500,000, that you will be able to do the work later on?

Mr. FREDERICK. Yes, sir.

Mr. YATES. That is assuming you get the appropriation later on.

Mr. COHEN. Yes. We are taking a significant step forward in this case. We could take a larger step or a more rapid step but I think we are taking a most significant step forward in the program as it is now before you.

Mr. FREDERICK. Mr. Chairman, as you are well aware we were in for a $1.5 million increase in this particular program and we retained $1 million of that. We believe we retained the highest-priority initial activities. As Mr. Cohen said, the field work we think can be reasonably postponed in this kind of an environment.

Eventually we will want to look more specifically at various hydrologic and geologic aspects of this particular problem, and we think this is a good first step. A million dollars will be adequate to take that first step.

Mr. YATES. What will you do?

Mr. COHEN. In general, we will be looking at the process involved in moving contaminants through the soil into the groundwater and within the groundwater.

Specifically, we will be looking at chemical interactions between pollutants and materials that the pollutants come into contact with. We will also be looking at the effect of biology on the degradation or lack of degradation of some of the organic constitutents that are contaminating groundwater.

Mr. YATES. What function do you have in connection with dump areas like Love Canal? Have you been called in for consultation on anything like that?

Mr. COHEN. We work very closely with EPA across a broad front of their activities, and we have been talking with their enforcement people. Again, we are very close to preparing an MOU which will formalize the kind of interaction that we have had in the past. They turn to us, as they do to others, as scientific consultants.

With respect to the initial part of your question, we have documented—again, largely as a result of our Federal/State cooperative program—many, many examples of groundwater contamination over many decades. It is this documentation that in large part has helped to bring the scientific interest and focus to the overall problem.

However, with regard to the regulatory responsibilities we have no function. We are called in at times——

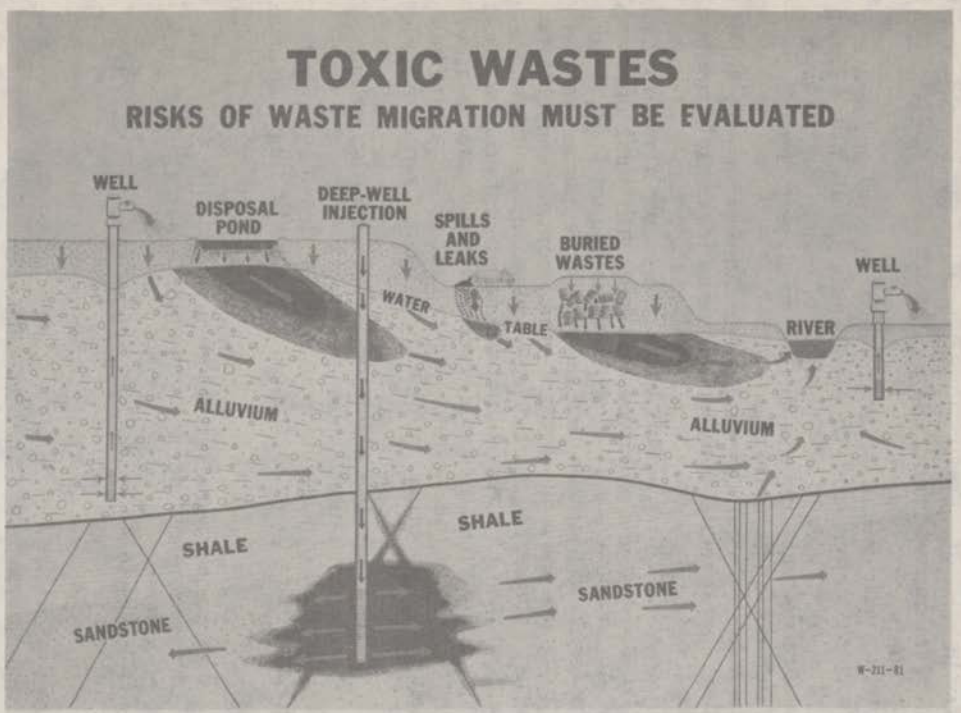
Mr. YATES. You explain what happens and you leave the regulation up to those who are to act on the basis of your findings; is that correct?

Mr. FREDERICK. Yes, sir.

Mr. COHEN. The budget request before you is to help give us the wherewithal to explain new phenomena and to explain old phenomena more effectively.

Mr. YATES. What is encompassed in the phrase toxic wastes?

[The chart follows:]



Many industrial activities generate toxic wastes, which must be disposed of safely and at a reasonable cost. However, the risks of waste migration in flowing ground water are rarely evaluated adequately. This diagram illustrates several ways that toxic wastes can enter a groundwater system, and in turn, contaminate water-supply wells and surface waters. Ground-water contamination results in increased costs to industry and hazards to public health. The Geological Survey's program is designed to develop reliable and transferable methods to predict contaminant movement, so that management options can be evaluated and innovative approaches to mitigating ground-water contamination can be developed.

Mr. COHEN. The term toxicity in this particular case generally is within the framework of human medicine and human knowledge: compounds, elements or compounds in concentrations which are either suspected or known to cause adverse health effects.

Mr. YATES. Does that include nuclear?

Mr. COHEN. Yes, sir. In this regard there is no distinction between whether a compound or an element is radioactive or not radioactive. If it has an adverse effect on human health, the term toxic waste is used.

Mr. FREDERICK. Mr. Chairman, we do have a separate high-level and low-level nuclear waste program, as you are well aware, but they are very closely coordinated.

Mr. COHEN. Many of the principles are the same. Of course, many of the phenomena are different, most notably with high-level toxic waste there is a great deal of heat. However, with the kinds of phenomena that we are talking about, Love Canal and things on this particular chart that we are talking about, generally there is no significant change in temperature, just a matter of a few degrees or a few tenths of a degree at most.

Mr. YATES. Are you consulted in any way by our Government or by a foreign government in connection with the proposed disposal by the Japanese Government of its nuclear wastes in drums in a deep part of the ocean?

Mr. COHEN. I have no familiarity with that issue.

Mr. YATES. If you are not consulted about it, who is?

Mr. FREDERICK. Jim?

Mr. DEVINE. Maybe I could address that. We have had informal discussions with the State Department relative to the technology involved but we have not played a role in any way as to the advisability or the appropriateness of that action. We have talked only of some of the technologies that one must use to make those assessments.

Mr. YATES. Were you consulted in connection with the disposal by our own naval forces of nuclear waste in drums that ruptured on the floor of the ocean off California?

Mr. DEVINE. No, we were not.

Mr. YATES. You were not?

Mr. DEVINE. No, sir.

Mr. YATES. Were you consulted with reference to dealing with that problem, then?

Mr. DEVINE. No, sir.

Mr. YATES. Who would they consult on something like this?

Mr. DEVINE. I could only speculate, sir. We do not play a major role in deep ocean advice to other agencies.

Mr. YATES. Would NOAA be consulted?

Mr. DEVINE. I suspect that NOAA would be, but that is only an estimate.

SALT DOME STORAGE

Mr. YATES. What has happened to your salt dome investigation for the storage of nuclear waste? Is that your function?

Mr. DEVINE. Yes, sir. We do have a role in that.

Mr. YATES. I thought you had the role in that. If I remember the testimony of former years, you were being called on to evaluate the impermeability of these salt domes to nuclear waste and there was

some question as to whether that was really that safe. Is my memory correct?

Mr. FREDERICK. Yes, sir. We think that is a fair statement in terms of our responsibility.

Mr. YATES. There is some movement for the storage of oil instead of for nuclear waste. We are using the salt domes for oil storage instead of for nuclear waste now, aren't we?

Mr. DEVINE. I am not sure it is an either/or situation, sir, but yes, we——

Mr. YATES. You are called on also for advice in connection with the storage of oil in our Strategic Petroleum Reserve, aren't you?

Mr. DEVINE. That is one I cannot comment on.

Mr. YATES. Were you not called on to provide advice?

Mr. FREDERICK. Did we get involved in the storage of oil in the petroleum reserve?

Mr. YATES. Did you provide advice regarding the salt domes in Louisiana and Texas?

Mr. DEVINE. I am unfamiliar with that.

Mr. YATES. Who do they consult to determine whether or not oil will leak out of those salt domes? You did once, didn't you?

Mr. FREDERICK. We surely would have information to contribute to any decisions along those lines.

Mr. YATES. I am told it is a normal industrial practice of the oil industry.

Mr. FREDERICK. Yes, sir, we think so, and DOE has basic information on that, we believe, in terms of storage of oil.

Back to your question, sir, on the matter of nuclear waste and the salt domes and that sort of thing, I think that we would still consider the jury to be out in terms of the broad question of nuclear waste storage in the salt domes.

Is that fair, Jim?

Mr. DEVINE. Particularly the higher temperature——

Mr. YATES. Well, are you also consulted on alternatives to storing it in the salt domes?

Mr. DEVINE. Yes, sir. We have the program that is investigating alternate technologies and alternate environments. We have a program study in various aspects of that.

WASTE STORAGE STUDY

Mr. YATES. How complete is your study?

Mr. DEVINE. Well, it is under way. It would not be, in any terms, considered complete, and it is in coordination with the Department of Energy. It is under way but certainly not complete. There are various aspects of it, one being a regional assessment and another being a technology assessment.

Mr. YATES. The reason I asked the question is that I wondered what your conclusions were. We were told by the people from the Department of Energy that nuclear wastes could be put into glass or vitreous containers and then put in steel casks. It would then be safe, for all intents and purposes, for deposit anywhere.

Do your studies go into that question?

Mr. DEVINE. Our studies, sir, do not go into the question of the immediate container for nuclear wastes. We look at the hydrologic

and the geologic aspects of an area to provide basic information to DOE, in this particular case, with regard to what one would——

Mr. YATES. Have you found any geologic information that would protect such wastes from seeping into water levels?

Mr. FREDERICK. Well, sir, I think if you recall our testimony last year we did say that we have found out a great deal of information with regards to what happens in specific areas. We could not answer your question to say we can absolutely guarantee that.

Mr. DEVINE. There is a question of time, too, sir.

Mr. YATES. You cannot furnish the guarantee?

Mr. DEVINE. It is a question of time. If you mean forever, we cannot provide this.

Mr. YATES. I don't mean forever, but for 225,000 years. That is what I understand the half-life to be. Isn't that right?

Mr. DEVINE. The half life of some elements.

Mr. YATES. Yes.

Mr. DEVINE. We are not in a position of guaranteeing geologic stability for time elements of that length.

Mr. YATES. Well, personally I think you could undertake it.

Mr. DEVINE. I'm sorry?

Mr. YATES. You could guarantee the geologic stability for a period of 225,000 years, couldn't you?

Mr. DEVINE. With some element of uncertainty.

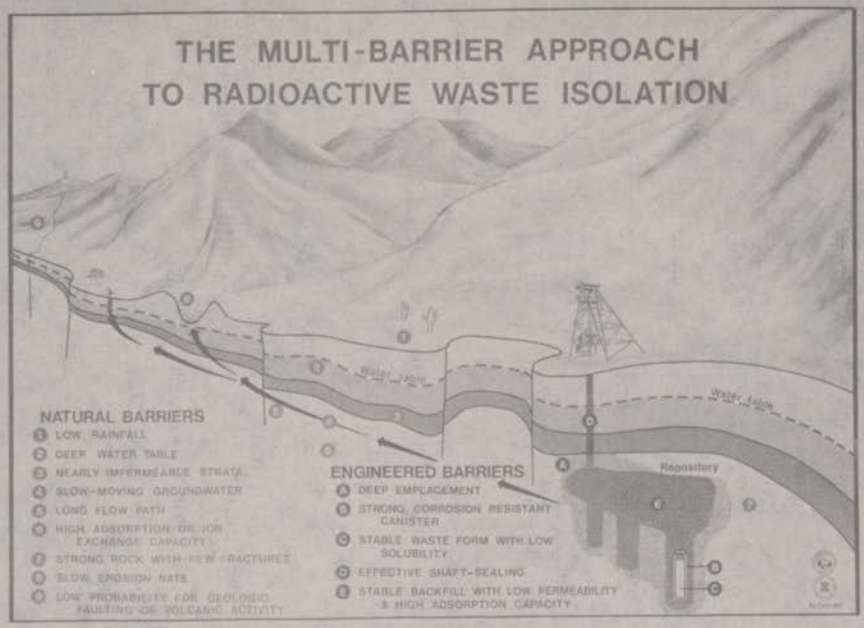
Mr. YATES. OK.

Mr. FREDERICK. Mr. Chairman, I think it is fair to say that we have made some reasonable progress in the multiple barrier approach.

MULTIPLE BARRIER STORAGE

Mr. YATES. Maybe you ought to explain the multiple barrier approach to waste isolation.

[The chart follows:]



The diagram shows the occurrence in the natural environment of multiple barriers to the transport of waste radionuclides. The term MULTIPLE BARRIERS refers both to manmade barriers and natural barriers in the form of hydrodynamic, geochemical, and geologic characteristics that would impede radionuclide transport. The USGS program stresses the concept of multiple barriers in order to overcome limitations in the precision with which geochemical reactions, natural geologic events, and transport mechanisms can be predicted. A major objective is the identification of environments where such a series of natural barriers occurs.

Mr. DEVINE. Yes, sir.

Mr. YATES. This is your study, now, that you are talking about, or part of your study?

Mr. DEVINE. This represents aspects of our study.

Mr. YATES. OK.

Mr. DEVINE. The chart is broken out for demonstration purposes into two main categories, natural barriers and engineered barriers. We are primarily concerned with the natural barriers, being geologists, hydrologists, and so forth.

Those that most of our effort addresses we have listed which you can read from here, but for the purpose of the record, the natural phenomena of importance to an ideal site would be a site with no rainfall, a deep water table, with an impermeable strata or nearly so if possible, which would result in slow-moving groundwater, a long flow path to whatever area of concern that you are trying to protect, few fractures in the rocks, low tectonic activity and so on. It is these geologic and hydrologic phenomena that we address in the bulk of our program.

On the engineered side, we have a lesser role in that other than to possibly observe the effects, how effective these engineered programs are.

Mr. YATES. Thank you.

Could they be deposited in inactive volcanos?

Mr. DEVINE. I would not recommend that, sir.

Mr. YATES. Would they activate the volcano?

Mr. DEVINE. Not likely, sir, but that is not recommended.

Mr. YATES. Why would you not recommend it? What is the difference between that and a salt dome?

Mr. DEVINE. Well, I guess it would be a question of how you could guarantee that the volcano is indeed inactive.

Mr. YATES. Yes, that is important, isn't it?

Mr. DEVINE. Yes, sir.

Mr. YATES. Can there be no guarantees of that either?

Mr. DEVINE. To various degrees. I assume that the geologic side could come up with a certain volcano that they would be highly confident is inactive but the fact that it exists would be an item that I would tend to avoid, simply by the fact that it is there.

Mr. FREDERICK. There are other characteristics, I assume, Jim, related to the volcano that do not meet the requirements.

Mr. DEVINE. It is not likely that the volcano, extinct or not, would meet the other criteria, right.

Mr. YATES. Is your program at a level that the information it needs can be made available for the Department of Energy as scheduled?

Mr. DEVINE. I think so, sir.

Mr. FREDERICK. Yes, sir.

OIL THEFT

Mr. YATES. Thank you. Let's talk about the theft of oil, now, at onshore leases.

Mr. DEVINE. Yes, sir.

Mr. YATES. Can you review what the status is of the alleged oil theft on leases on Indian lands?

Mr. FREDERICK. Yes, sir, I believe we can.

Mr. Chairman, this is Don Kash, who is the Chief of our Conservation Division.

Let me say a couple of things to begin with and then I will turn it over to Don for further elaboration. You evidently know the history. There is an allegation, especially the concern about theft of oil on the Wind River Indian Reservation.

We have been working with the department's Inspector General and with the Attorney General's office to look into that situation. We were notified last summer of the concern and immediately stepped up our investigative program on the Wind River Reservation.

We have subsequently looked in detail at each one of the leases and each one of the production facilities, and have reported information into the Inspector General's investigations. We found several infractions that we consider technical infractions which could have made it a little easier for theft but we have not found anything that specifically would say there is the scale of theft that perhaps the Indians might believe.

We are continuing to look at it. In addition to the field investigations we are also beginning to build into our royalty collection system, or will eventually build into our royalty collection system, a scheme that will let us check fairly closely production information versus sales information, and let us begin tracking that phenomenon more thoroughly.

Mr. YATES. This article which appeared in The Washington Post for Sunday, January 11 talks about an investigator whose name is Charles Thomas, and a conclusion is drawn. [Reading:]

> Now it seems Thomas' sleuthing at Wind River may have revealed only the tip of a multimillion dollar "hot" oil operation. Investigators from the FBI and the Interior Department Inspector General's office have worked since last summer to assemble evidence of oil thefts, not only from Indian lands but also from federally owned lands in seven Western States.

Now apparently the conclusion that it might be a multimillion dollar hot oil operation is not a correct one, then?

Mr. FREDERICK. We do not know, sir, finally, whether that is absolutely true or not. It is possible that there is a great deal of oil theft. As you well know, the price has increased substantially over time and there is a great deal of incentive for theft. We do not have a policing responsibility.

Mr. YATES. Who has, in this respect, the FBI?

Mr. FREDERICK. Well, the FBI would have an investigative responsibility if it were interstate in nature.

GS RESPONSIBILITIES FOR LEASES

Mr. YATES. Yes, I see.

Well, is your responsibility investigative in nature?

Mr. FREDERICK. Ours is an inspection responsibility, sir, and generally we are limited to the lease area itself. The responsibility there relates to our responsibility to collect royalties for Federal oil and Indian oil and gas.

Mr. YATES. Don't you have a responsibility in connection with the oil wells owned by the Indians?

Mr. FREDERICK. Yes, sir. That responsiblity is part of the department's trust responsibility to the Indians.

Mr. YATES. Yes.

Mr. FREDERICK. It involves inspection in terms of the environmental concerns, production concerns, as well as royalty collection.

Mr. YATES. Well, what did you find?

Mr. KASH. To date there have been no specific indictments as a result of the FBI/Inspector General investigation that have been issued by the grand jury. That investigation is continuing, and at the present time we have no demonstrated evidence of theft.

As Doyle indicated, what we have been doing is checking to make sure that production operations meet the standards and the regulations of the Geological Survey of the Department of the Interior. Our primary focus, therefore, has been on trying to assure that there is nothing associated with the production operations which would lend itself to mishandling or to oil theft.

This has resulted in our now having carried out detailed inspections of approximately half the producing leases on Federal and Indian lands. We have given initial priority to production on Indian lands. We are going back in many instances and checking on this.

We have also had in place instructions for our people to report to the Inspector General any communications to them by industry people, or alternatively any instances that they have identified which appear suspicious. I guess there have been less than ten of those.

Mr. YATES. Well, an article in The Denver Post dated January 11 has the headline, "Indians Uncover Proof Of Oil Thefts." [Reading:]

> The Indian investigators say they have uncovered solid proof of large-scale thefts of oil from the Wind River Indian Reservation. In one instance in excess of 86,000 barrels of oil were taken off just two leases during a 4-month period, Charles Thomas, Director of the Joint Tribal Mineral Department told The Denver Post. No royalty was paid on the 86,000 barrels. He declined to identify the companies concerned but he held up a sheaf of papers which he said support his statement.

Do I take from your answer that you do not agree with that statement?

Mr. KASH. No, you should not take that. I tried to make my comments carefully.

Mr. YATES. What you are saying is, we do not know yet?

Mr. KASH. That is correct.

Mr. YATES. How would we know?

Mr. KASH. Well, it seems to me that one must have at a minimum an indictment, theft is only demonstrated when one has been in court and proven guilty. I think it would be inappropriate for us to go beyond that.

Mr. YATES. Yes, I can understand that.

What about the statement that was made by Charles Thomas that 86,000 barrels were taken and no royalties were paid? Is that part of the charge that you cannot comment on? Did you find that 86,000 barrels were taken and no royalties were paid on them?

Mr. KASH. We did not find that and we are not at liberty, under the instructions from the Federal judge involved, to speak specifically.

Mr. YATES. Do you want that stricken from the record, then?

Mr. KASH. I think I have said nothing here that is not acceptable.

Mr. YATES. Okay.

Mr. KASH. I might identify the more general issue that we are concerned with and that has been a source of concern, and that is

the existence of inconsistencies between two kinds of reports that we receive on producing leases, the production reports and the sales reports. It may be that it is that set of inconsistencies which has caused some people to identify this problem.

I would indicate that those inconsistences, however, where they exist or if they exist are certainly not proof of theft. Rather, there may be administrative error. There may, in fact, for any month be time periods that are inconsistent.

Mr. YATES. Well, there are elements of this newspaper article that I think should receive your comments. [Reading:]

> The Indians point an accusing finger at GS for what they call lax inspection techniques that have fostered opportunities for thefts. These, they say, include unsealed or unlocked drain valves from oil storage tanks and the approval of storage tanks with extra drain pipes.

Do you want to comment on that, Mr. Kash?

Mr. KASH. Yes. We have found roughly one out of two leases that we have inspected where there was equipment that was not consistent with our regulations and requirements: valves not being locked or sealed, piping that was inconsistent. However, it has been primarily the valves not being locked and/or sealed that has been a problem.

Now I need to indicate to you that this has become a much more intensive concern of ours with the allegations of oil theft. The lack of locks and seals, however, is once again not an indication of proof but clearly if one is broken that is an indication that you ought to be looking into the reason for that.

This emphasis has resulted, as Doyle indicated, from the very rapid increase in the value of oil produced, and given the resources that the Survey has had to devote to this we have in the past had somewhat different emphasis on this. Particularly, previously we have put a lot of attention into environmental concerns. Then as a result of this development, it in fact resulted in focusing our priorities more on this type of activity.

INSPECTIONS OF WELLS

Mr. YATES. The comment is also made that you blamed the problem on manpower limitations, by the statement, GS has only 50 inspectors to check the 16,000 leases nationwide.

Is that being corrected?

Mr. KASH. The Survey has approximately, as I recall, 60, 65 slots devoted to petroleum engineering technicians who are predominantly concerned with the inspection activity. The 50 people referred to there are people that presently are on the ground.

Now we are, within the Survey, putting more emphasis on this. We of course have had some time delay involved because there has been a freeze on hiring and it has taken some time to deal with.

Mr. YATES. Do you still have only 50 inspectors?

Mr. KASH. We have actually fewer than 50 at the present time.

Mr. YATES. How many do you have?

Mr. KASH. The last time I checked, it was about 46.

Mr. FREDERICK. Mr. Chairman, we do have a budget increase for fiscal year 1982 that begins to deal with this problem in terms of the onshore inspection. We will look at techniques for better transportation, helicopters as an example, to get our people out more frequently. As soon as the freeze is lifted—and we believe that is

just about to happen for the Geological Survey—we will indeed concentrate some effort in this area to hire more people.

In addition to that, we believe that a major——

Mr. YATES. How many more do you think you ought to hire?

Mr. KASH. We are presently trying to make a determination, and if I may I would like to pick up on a point that Doyle made earlier. There are 16,000 producing leases and they are scattered across this country. There is no way that we can reasonably have enough people in the field to deal with this problem by some shotgun or blanket coverage approach. Presumably the only way you could be assured of this would be to have someone sitting on a lease all of the time.

As a part of our effort to modify and put into place a new royalty collection system, we are planning to move in the direction of a capability for doing analysis which will allow us to identify where there are inconsistencies in production over a period of time or where there are inconsistencies between sales and production reports. That will put us in a position to have a command and control system which can focus our field inspectors on where the problems seem to be.

Therefore, we really feel at this juncture, first that we need more people in the field, but the problem that you are addressing is not a problem that can be dealt with by simply increasing the number of inspectors in an indiscriminate fashion.

Mr. YATES. What has happened to the efforts of Mr. Rebogen?

Mr. KASH. Well, one of the tribes has hired that particular firm of attorneys. They are investigating the concerns of the tribe, and in conjunction with an accounting firm are in fact reviewing sales and production records and the payments on the Wind River Reservation at the present time.

We are providing all of the information on this production to that firm, and the firm is, in addition to that, making contact with the companies that operate on the Wind River Reservation. I suppose the summary statement is that that law firm's investigation is under way at the present time.

Mr. YATES. Do you have any responsibility to check the question or the charge made by the Indians that there may be falsifying of production records to avoid royalty payments?

Mr. KASH. Yes. It is within our general purview here to insure that we are getting accurate reporting. If we were to identify problems in this connection we would refer those problems to the Inspector General's office.

Mr. YATES. Have you done so in this case?

Mr. KASH. We have had a group in our Casper accounting office reviewing the records on the Wind River Reservation, and have identified some instances which we believe the Inspector General's office should review and conceivably investigate.

Mr. YATES. Can you tell us the quantity of oil that is involved in those records that were referred to at the IG level?

Mr. KASH. I cannot at this juncture. That is, I do not have any aggregate number.

Mr. YATES. Can that information be supplied for the record?

Mr. KASH. I would think that we would have to check into whether we could provide you the information. We would certainly be happy to do that if the court has no objection.

[The information follows:]

FALSE PRODUCTION RECORDS

We are auditing and reconciling all lease accounts on the Wind River Indian Reservation for the purpose of identifying conflicts and inconsistencies in the information received from the operators and purchasers. In each case when conflicts or inconsistencies have been identified, we have referred the matter to the IG for possible investigation since we have been proscribed by the IG from following our normal procedures for reconciliation. This review has included all transactions during 1978, 1979, and 1980. So far, we have referred to the IG two cases on the Wind River Indian Reservation. One case involves several leases in one field which is also operated by a single, but different company.

In the first case, there is a conflict between the reports filed by the company during 1978–1980. In other words, the sales reported by the operator on its monthly report of operations for the months in question are larger than that reported on the corresponding monthly report of sales and royalties. Moreover, in other instances, the monthly report of operations also reflect the disposition of sump oil which was not shown on the related monthly report of sales and royalties. The net effect of these discrepancies is that perhaps as much as 135,000 barrels of crude oil was sold from the three leases over the 3-year period without the corresponding payment of approximately $250,000 in royalty value. The obvious question to be resolved, of course, is which of the two reports reflect the actual circumstances. Based on the subsequent actions of the operator, i.e., the review of its records and the payment of additional royalties, it appears that the monthly report of operations more accurately depict the actual sales. The primary reason for this discrepancy appears to be a breakdown in the company's accounting procedures, rather than an actual effort to defraud the Indian lessors. Had that been the case, it seems that the operator would not have submitted conflicting reports. We might also note that a review of the records pertinent to these leases for several years prior to 1978 are indicative that the operator overpaid the Indian lessors for as much as 80,000 barrels during that period.

The second case involves a circumstance which relates mostly to whether the operator has allocated the sales back to the individual leases accurately. The marketing facilities involved here are very complex. Moreover, the production is on both lease and unit basis which further complicates the accounting process. Thus, we are reviewing the whole process to make certain that the storage of oil is properly segregated, measured separately (as appropriate), and that the distribution of sales back to the individual leases have been calculated accurately in accordance with the established allocation procedures.

Mr. KASH. I would like to emphasize once again, Mr. Chairman, that numbers of that kind I really feel must be handled very carefully.

Mr. YATES. I can understand that.

Mr. KASH. We have some problems simply in the administrative handling of the royalty accounts ourselves, and many of the errors that may show up in a first review here could very conceivably be administrative errors, or clerical errors, that kind of thing.

Mr. YATES. The charge is also made that oil has been shipped from one lease requiring high royalty payments to other leases on which lower royalty rates are charged.

Are you investigating that, too?

Mr. KASH. Yes. We have had a review in some instances on the Wind River Reservation, looking at differences between leases which had one regulated price and additionally among leases with different royalty rates.

KNOWN GEOLOGIC STRUCTURE

Mr. YATES. Let me ask you about the term "known geologic structure." We had BLM before our committee yesterday and they draw a distinction in terms of leasing, competitive and noncompetitive, by "known geologic structures."

Can you actually define the boundaries of a known geologic structure?

Mr. KASH. The boundaries of a known geologic structure can be defined.

Mr. YATES. Well, if it is known——

Mr. KASH. We do it on a continuing basis. Now as you know, there is the possibility of some difference in interpretation but it is a degree of interpretation. That particular concept is a combination of a legal and a geologic definition. A "known geologic structure" requires that you have a producing well.

Mr. YATES. Why have that concept at all? Why don't we have competitive bidding for all leases?

Mr. KASH. I believe, Mr. Chairman, that that is something that the Congress of the United States has——

Mr. YATES. I know, but I am asking you this question. I have more trouble getting advice from you people.

Where am I going to turn? Am I going to call the oil companies and ask them?

Mr. KASH. Sir, are your questioning me whether it would be more or less advisable to not have that——

Mr. YATES. Right. My question to you is as you have phrased it.

Mr. KASH. Well, I am afraid I am going to have to give you an answer of the kind that you were just objecting to. That is an issue on which there are strong, it may even be fair to say passionate, differences of opinion. The passionate differences are not among professional geologists. I think they tend to be among people who have rather different economic interests involved. I believe that you could push me all day and I would not take a position on that.

Mr. YATES. Well, I am not about to push you all day.

Mr. FREDERICK. Mr. Chairman, we can comment on the complexities of leasing in one way versus the other and that sort of thing but first, national policy is——

Mr. YATES. He did not answer my question with respect to the term "known geologic structure." He says it is defined as a geologic structure which has a producing well but that does not tell me how you know what the boundaries of that geologic structure are. How do you know those?

Mr. KASH. It involves two variables. It usually involves initially a spacing arrangement that has really nothing to do with the geologic structure. Then based upon what our resource evaluation people know of an area, they are able using the norms of——

Mr. YATES. Are you saying that you can define what the geologic structure is?

Mr. KASH. Oh, yes.

Mr. YATES. Within a particular boundary you do know there is only one geologic structure that can be defined as a known geologic structure, is that correct?

Mr. KASH. I would say that we can define them but——

Mr. YATES. I better not push you any more.

Mr. FREDERICK. Mr. Chairman, it might be fair to say maybe one additional thing. We believe that the definition of the geologic structure was developed over time to put into a competitive lease category those areas for which we know oil and gas are available, and to leave in the noncompetitive category those areas for which that information is not known and for which there is some degree of speculation and wildcatting involved.

Mr. YATES. Yes, that was what BLM said yesterday but they also said that Geological Survey can answer that.

Mr. KASH. Mr. Chairman, we can certainly provide you for the record a careful definition of how we use that, if you would like it. We had a lot of experience last year in one case and we have those materials available.

Mr. YATES. Well, I would be very happy to have your definition for the record.

Mr. FREDERICK. Yes, sir. We will provide it.

[The information follows:]

DEFINITION OF A KNOWN GEOLOGIC STRUCTURE

Definition of a known geologic structure (from 43 CFR 3100.0-5). "A known geologic structure is technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which all acreage that is presumptive productive." (sic)

PROMISING OIL AND GAS AREAS

Mr. YATES. Tell us which are the most promising areas for new discoveries in the production of oil and gas in the continental United States.

Mr. FREDERICK. Sir, we have a chart on that, we believe, and we think we can lay it out.

Mr. YATES. All right.

Mr. FREDERICK. Actually, we think Alaska probably is the most promising frontier area.

Mr. YATES. Do you also include the seas around Alaska?

Mr. FREDERICK. The seas around Alaska? Yes, sir, we do.

Let me call on Dr. Betty Miller to explain that to you.

Mr. YATES. Well, Dr. Miller, we are glad to have you come up here. My gosh, are you the only woman boss in the whole outfit?

Dr. MILLER. I don't know about "boss".

Mr. FREDERICK. No, sir. She is the only one that we have with us today.

Mr. YATES. I see other women here and I am delighted to see that because ordinarily the witnesses have considered this a man's territory.

Mr. FREDERICK. Mr. Chairman, we are still looking for the graph but we will go ahead and start.

Dr. MILLER. Would you repeat specifically the question?

Mr. FREDERICK. The most promising areas for oil and gas discoveries——

Dr. MILLER. For the whole United States?

Mr. FREDERICK [continuing]. For the United States.

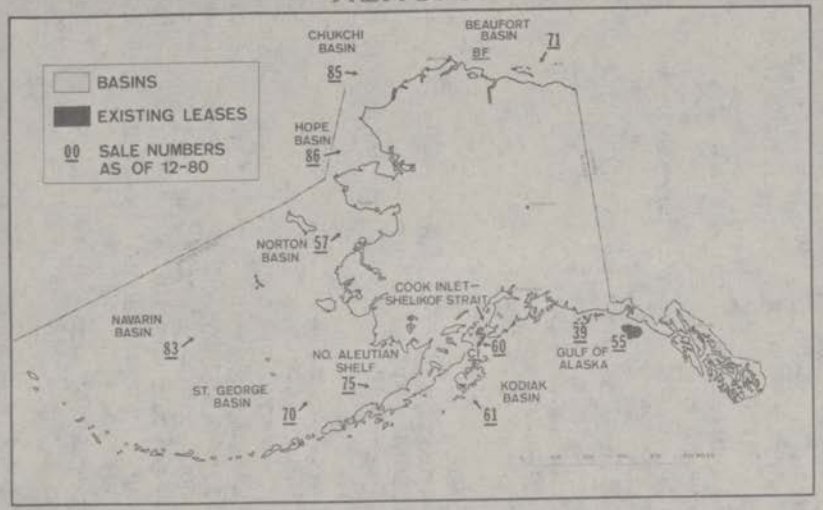
Mr. YATES. For the continental United States, in OCS areas and Alaska.

Is Dr. Miller a geologist?

Mr. FREDERICK. Yes, sir. She is a geophysicist.

Mr. YATES. A physicist?
Mr. FREDERICK. Geophysicist.
Mr. YATES. Geophysicist?
Dr. MILLER. Well, really a petroleum geologist.
Mr. YATES. A petroleum geologist? Well, why aren't you out making millions of dollars instead of working for the Government?
Dr. MILLER. I ask myself that every day.
Mr. FREDERICK. We conclude, sir, that she is dedicated to public service and to the Government.
Mr. YATES. Okay. No charts? You will have to be very graphic yourself, then.
Dr. MILLER. Let me start off with Alaska and we start at the North Slope.
Mr. YATES. The North Slope, okay.
Dr. MILLER. Let's start offshore.
Mr. YATES. Which part of offshore? North?
Dr. MILLER. Yes, the Beaufort Sea area. In terms of the geological and geophysical area.
Mr. YATES. Can you hear her all right, Mr. Loeffler?
Mr. LOEFFLER. Yes, thank you, Mr. Chairman.
Dr. MILLER. Probably the most potential petroleum area, offshore Alaska, is the Beaufort Sea.
Mr. YATES. Does that exclude the Chukchi Sea, then?
Dr. MILLER. Yes. I am not including that yet.
Mr. YATES. All right. I remember Senator Gravel telling a group that the Chukchi Sea and the Beaufort Sea have more oil than Saudi Arabia but he is not a geophysicist.
Mr. LOEFFLER. He was a politician, wasn't he?
Mr. YATES. A former politician.
Mr. YATES. Nothing insidious meant by that. Those things happen.
Dr. MILLER. I would say at this point in all of the available petroleum information of the world the Middle East is still leading the pack.
Mr. YATES. It is.
Dr. MILLER. Let me just start with the North Slope, and you know——
Mr. YATES. Sure, I know the North Slope. We have a picture and I have a picture in my mind's eye because of the work we have done on Navy Pet-4.
Dr. MILLER. Right. The most potential petroleum aspects off of Alaska are the Beaufort Sea, and then moving down and still staying offshore, the next highest potential is the various smaller basins in the Bering Sea.
Mr. YATES. In the Bering Sea?
Dr. MILLER. In the Bering Sea, moving up off Bristol Bay and——
Mr. YATES. Here, do you want to give this to your people?
[Passing a chart to the witnesses.]
Mr. YATES. Dr. Miller, may I suggest you speak up so Mr. Loeffler can hear you? He knows much more about oil than I do.
[The chart follows:]

OCS LEASE SALES
—ALASKA—



C-156-81

The areas associated with offshore oil and gas sales schedule in FY 1981-1984 for Alaska.

Dr. MILLER. Shall I go back and start over?

POTENTIAL AREAS IN BERING SEA

Mr. YATES. No, just point out the Bering Sea.

Dr. MILLER. This is the Bering Sea. Basically, we refer to this area here and to the treaty line with Russia. Incidentally, there are two treaty lines; we just stick to the geological boundaries.

The most potential areas in the Bering Sea that we are looking at are a chain or a sequence of deep basins that fall out across here.

Mr. YATES. When you say, "We are looking at," what does that mean? Are you taking borings or test drills? How are you looking at them?

Dr. MILLER. Two different aspects: The Survey has an active seismic marine program where they are doing seismic work in the Bering Sea.

Mr. YATES. I see. Does this program send ships out with various kinds of instrumentation that permit you to determine the structure of the base of the ground?

Dr. MILLER. Yes. Our primary concern is where there are areas of thick sediment that may have petroleum potential, and whether or not there are structures, geologic structures as you were referring to, in which the oil and gas are trapped.

Mr. YATES. Okay.

Dr. MILLER. This area here in the Bristol Bay area appears to have that potential. Industry is interested. We have a lease sale coming up soon in this area. This area to date——

Mr. YATES. By "this area," are you referring to the Gulf of Alaska?

Dr. MILLER. To the Bristol Bay and north of the Aleutian Island chain.

GULF OF ALASKA

Mr. YATES. Okay, but what was that—the next area is the Gulf of Alaska?

Dr. MILLER. The Gulf of Alaska. There has been drilling in the Gulf of Alaska with previous lease sales. So far the potential has not shown anything to get too excited about. We have, of course, major production in the upper end of the Cook Inlet.

Onshore Alaska, the two areas that have the most potential of course are the NPRA area and the Arctic National Wildlife Refuge. These areas, the whole North Slope of Alaska, are considered petroleum potential.

ARCTIC WILDLIFE REFUGE

Mr. LOEFFLER. Are we able to drill now in the Arctic Wildlife Refuge?

Dr. MILLER. No.

Mr. LOEFFLER. What is your estimation of the number of reserves that lie under that area?

Dr. MILLER. The Survey conducted a preliminary study on the coastal plain of the Arctic Wildlife Refuge which was submitted to the Senate Committee on Energy and Natural Resources, and the Survey's estimate on oil ran approximately 160 million to 17 billion

arrels of oil in place. That is a broad range, with a mean estimate of approximately 5 billion barrels of oil.

The gas estimate went from approximately 1.5 trillion cubic feet to over 34 trillion cubic feet with a mean estimate of somewhere around 12 trillion cubic feet in place.

Mr. LOEFFLER. What is that, Pet-4?

Dr. MILLER. Yes.

Mr. LOEFFLER. If you compare Pet-4 to the Arctic Wildlife Refuge, the possibilities for recoveries are approximately equal, if you average oil and gas expectations.

Dr. MILLER. Based upon the conclusions—let me as a warning statement, however, make the statement that we do not have the subsurface information in the Arctic Wildlife area that we do in NPRA.

Mr. LOEFFLER. Because of its specific designation now, what capabilities do we have to go on with seismograph crews, et cetera?

Mr. DEVINE. I think I could answer that one, sir. The Alaska Lands Interest Act does indeed provide the authority to allow seismic exploration, not to include drilling, so the assessment is now under way to develop the guidelines that would allow seismic exploration.

Mr. LOEFFLER. Therefore, when we look at Pet-4 and your projections on this chart and the Arctic Wildlife Refuge, the certainty that your graph shows on Pet-4 is much more potentially certain than the Arctic Wildlife Range.

Mr. DEVINE. Yes, sir.

Mr. FREDERICK. That is fair, isn't it?

Mr. DEVINE. That is a result of the amount of work that we have done on NPRA.

Mr. FREDERICK. Also the geology.

Mr. YATES. All right. Dr. Miller?

Dr. MILLER. Yes. I am going to pick up with the Lower 48, if they can find the map.

Mr. YATES. Okay.

Mr. LOEFFLER. While you are preparing to talk to us about the Lower 48, let me ask you this question. Are the potential reserves that we are looking at in the north of Alaska as well as offshore Alaska, those the preponderance of those yet-to-be-discovered reserves that we have in the United States in total?

Dr. MILLER. Yes. What I am talking about is a petroleum resource, undiscovered, the potential that we feel is there but has not been either drilled for or developed.

Mr. LOEFFLER. What are the comparative expectations between Alaska and its surroundings as compared to the continental United States, or to the Lower 48? I am sorry.

Dr. MILLER. In terms of total potential, your question is, what would be the most potential frontier areas? Alaska.

Mr. YATES. Not Texas? Sorry about that. Go ahead.

Mr. LOEFFLER. Mr. Chairman, I keep waiting for them to say that oil and gas could be discovered under my family's ranch but it cannot. It is all granite rock.

Mr. YATES. Is that bad?

Mr. LOEFFLER. It is very bad.

OFFSHORE FRONTIER AREA

Dr. MILLER. Let's follow the same pattern of talking about the offshore then, first, because the offshore is the frontier area.

Mr. YATES. I would like you to address yourself as well to what the $8 million cut in seismic data retrieval will do to you.

Mr. FREDERICK. I can talk to that, sir.

Mr. YATES. All right. Do you want to talk to that now or does she want to tell us about the offshore?

Mr. FREDERICK. Your preference, sir.

Mr. YATES. Well, how is she going to know what she has offshore if you are going to be cut back by $8 million?

Mr. FREDERICK. Let me talk about that, then.

The cut that we are proposing in the collection of the high-resolution data offshore is a result of the streamlining process regarding leases.

Mr. YATES. The reason I laugh is that I have heard four agencies so far talk about "streamlining" for their cuts.

Mr. FREDERICK. Yes, sir. This particular information——

Mr. YATES. Do you prefer to call it streamlining or starvation?

Mr. FREDERICK. We prefer to call it streamlining because, sir, we think we can make it work.

Mr. YATES. Okay.

Mr. FREDERICK. The particular data that we are talking about here is primarily conducted on a track-by-track basis to look at the environmental hazards, shallow hazards that relate to the problems in development.

Mr. YATES. Is that the only purpose of the $8 million?

Mr. FREDERICK. That is the purpose of the money that was cut from the program. We left monies in the program that relate to the seismic information that has to do with the resources.

Mr. YATES. That is what BLM talked about too, offshore California and the geophysical hazards.

Mr. FREDERICK. Yes, sir.

Mr. YATES. That is all? How important is that?

Mr. FREDERICK. Well, the whole question of hazards we think is important. We believe we can handle it by taking a regional look at hazards, and we have the money left in our program to do that.

Mr. YATES. Will industry look to hazards itself?

Mr. FREDERICK. Yes, sir, and that is the key to this process we are talking about.

Mr. YATES. Okay. I am taking your word for it. I can see that you are going to be streamlined by $8 million.

Go ahead, Dr. Miller.

Dr. MILLER. Let me just pick up——

Mr. YATES. That is fine for industry to do it but what are you going to do about your EIS statements?

Mr. FREDERICK. The input to the EIS, sir, will be based on the regional data collection that we left in the program, and that information will be provided to the Bureau of Land Management in the preparation of their EIS statements.

Mr. YATES. That is very good but are the courts going to throw those EIS statements out if some environmental group comes along and says that you do not have sufficient data with which to project an EIS?

Mr. FREDERICK. Sir, we do not believe—well, we obviously cannot answer that, sir.

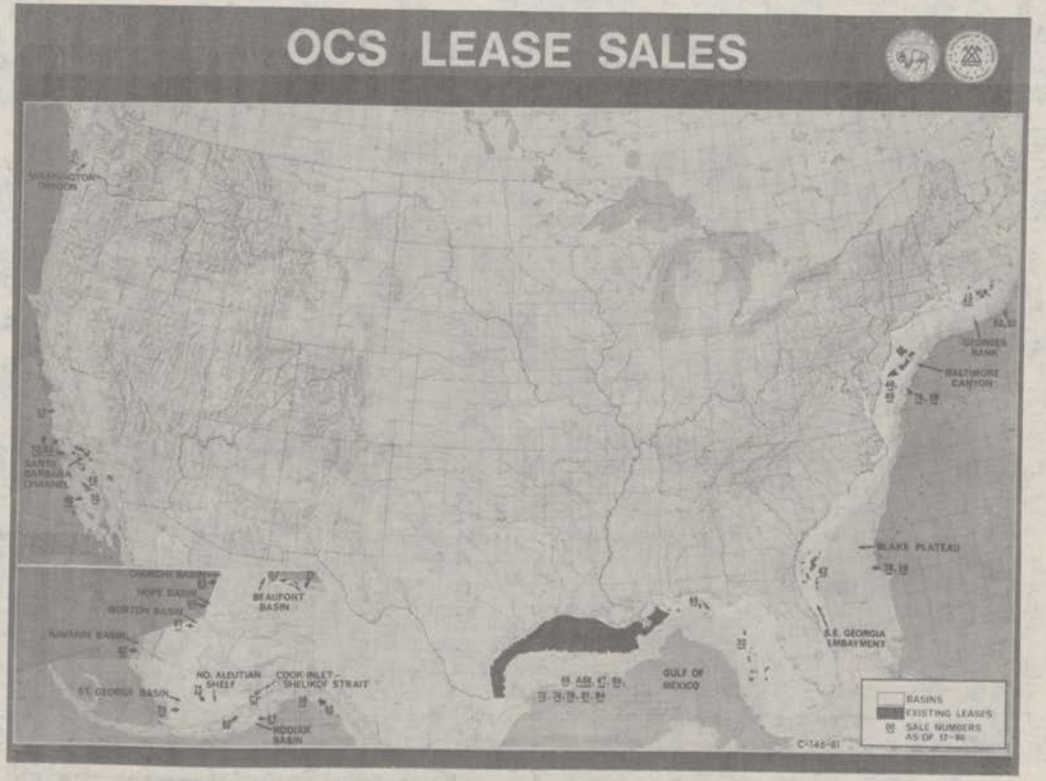
Mr. YATES. We will wait until the courts throw them out.

Mr. FREDERICK. We cannot answer that. We think we have a solid technical justification for the data that we input into the——

Mr. YATES. The record so shows.

Dr. Miller, let's go to your beautiful map there.

[The map follows:]



The areas associated with offshore oil and gas sales schedule in FY 1981-1984 for conterminous United States.

Dr. MILLER. We now have a map here. Let me just say that the areas I have discussed are the yellow areas on this map which indicate the petroleum potential basins.

Mr. YATES. Okay.

Dr. MILLER. Let's pick up, running down the West Coast.

Mr. YATES. Now we are coming to the Lower 48 and you have your finger off of Eureka, California.

Dr. MILLER. If you say so, right.

Mr. YATES. Well, that is the northernmost part of the four projected lease sales; right?

Dr. MILLER. All right. Well, then, we will start at the bottom and work up.

This is the southern basin off the Santa Barbara area in what is called in California the Southern California Borderlands. It is the most potential petroleum province that we know of on the West Coast.

As we move northward, the shelf narrows, the basins become smaller, shallower. To date, drilling over the years that has taken place up along northern California and off the State of Washington has proved to be all dry holes.

There has been some drilling in through here and some wells drilled off in this area, exploratory wells——

Mr. YATES. This area is off of Washington?

Dr. MILLER. Yes, Oregon and Washington. There were some wells drilled in this northern area years ago by Shell Oil and some of the other companies and they have proved to be dry holes.

Mr. YATES. What is the potential of that area, then? Is the sedimentation promising?

Dr. MILLER. The results of the Survey's studies to date beyond, I would say, the central part of California northward, the shelf is very narrow and the water becomes very deep very rapidly. The Survey's estimates of potential here are not very high.

Mr. YATES. May Secretary Watt be pushing it a little bit by opening those up for leases?

Mr. FREDERICK. No, sir, we did not say that.

Mr. YATES. Let the record show that the Acting Director did not say that.

Mr. FREDERICK. I appreciate that.

Dr. MILLER. Let me continue with the offshore potential. To pick up on those areas that the Survey feels in the Lower 48 offshore would have the greatest continuing potential and industry—following the same pattern in terms of studying the geology of the offshore—feels that the greatest potential yet in the offshore area of the Lower 48 is in the Gulf of Mexico.

Mr. YATES. It still is in the Gulf of Mexico? Are you talking about oil now or both oil and gas?

Dr. MILLER. I am talking about both oil and gas.

Mr. YATES. Are you talking about the brines?

Dr. MILLER. No, sir. I am talking about conventional.

Mr. YATES. Go ahead, Mr. Loeffler.

Mr. LOEFFLER. You are not talking about the geopressurized, either?

Dr. MILLER. No, sir, I am not. I am talking right now of strictly the conventional, recoverable petroleum, oil and gas.

Mr. LOEFFLER. What is the approximate ratio of oil to gas that has been recovered in the Gulf?

Dr. MILLER. In terms of past history, oil potential was considered greater than gas. However, in the development and the new discoveries moving farther offshore into water depths approaching 200 meters, we are now learning that we have as great a gas potential as oil and I would say we are now running 50/50.

Mr. LOEFFLER. How far out from shore are the major producing wells?

Dr. MILLER. Today?

Mr. LOEFFLER. Yes.

Dr. MILLER. We have four new fields that fall in the neighborhood of between 1,000 feet and 1,200 feet of water.

Mr. LOEFFLER. How many miles offshore?

Mr. FREDERICK. That is about 13 miles.

Dr. MILLER. No, these fall out here, so I guess we are talking about a hundred or so miles.

Mr. FREDERICK. About, yes. The deep water one, though, is about 13 and the COGNAC platform is 13 miles offshore.

Dr. MILLER. These over here we are talking about are at least a hundred miles.

Mr. FREDERICK. Sure. Definitely.

Mr. LOEFFLER. What is the estimate of potentially recoverable reserves that remain in the Gulf of Mexico in both oil and gas?

Dr. MILLER. Do you want exact numbers from the latest Survey study?

Mr. LOEFFLER. Your scientific numbers are very exact, or——

Dr. MILLER. They are not, no. Let me just refer to our latest study on the Gulf of Mexico. I would say we are talking, out to water depths of approximately 2,500 meters, we are talking about in the neighborhood of 10 billion barrels of oil and we are talking 50 or more trillion cubic feet of gas, just on known areas.

You realize that there are many areas in the offshore Gulf of Mexico we have no information, no scientific information. It is just an educated guess.

Mr. YATES. Why don't you have seismic information on that?

Dr. MILLER. One, there has not been, in terms of the USGS, much of any seismic work done in the Gulf of Mexico, so they are pretty much dependent upon proprietary data by industry.

Mr. YATES. Industry has already covered it, haven't they?

Dr. MILLER. Industry has covered a great deal in anticipation of being able to lease in deeper water.

Mr. YATES. Out to 200 miles?

Dr. MILLER. Oh, yes.

Mr. YATES. I suppose they do not plan to go beyond that distance, do they?

Mr. FREDERICK. Eventually they would, sir. Yes, sir.

DEPTH OF WELLS

Mr. YATES. What is the story on the open sea? Are they allowed to go into international waters for oil? If it is beyond 200 miles, is that international waters?

Dr. MILLER. Beyond 200 miles in the Gulf of Mexico you would begin to get into water depths that technically they are not ready

for yet. You are talking about 6,000 or 8,000, 10,000 feet of water, and they are not ready for that.

Mr. YATES. How far down do they go now with existing rigs in the Gulf?

Dr. MILLER. You mean water depth at this time?

Mr. YATES. Yes.

Dr. MILLER. They are now running between 1,000 feet and 1,200 feet of water.

Mr. YATES. Is that the maximum they can go?

Dr. MILLER. No.

Mr. YATES. What do they estimate is the maximum depth they can go?

Mr. FREDERICK. Mr. Chairman, we are leasing now in areas with 6,000 feet of water.

Mr. YATES. Really?

Mr. FREDERICK. Yes, sir, with the anticipation that within 5 to 10 years we will be able to develop those areas.

Mr. YATES. Are you leasing right now?

Mr. FREDERICK. Yes, sir.

Mr. YATES. What do you do about development?

Mr. FREDERICK. Well, the industry we believe can develop the capability to produce on those leases within the 5- to 10-year period. Exploration is possible now. There are exploration techniques that can get into water depths of out to 6,000 feet and beyond right now. The problem is production and we think the technology will be coming within this time frame to allow it.

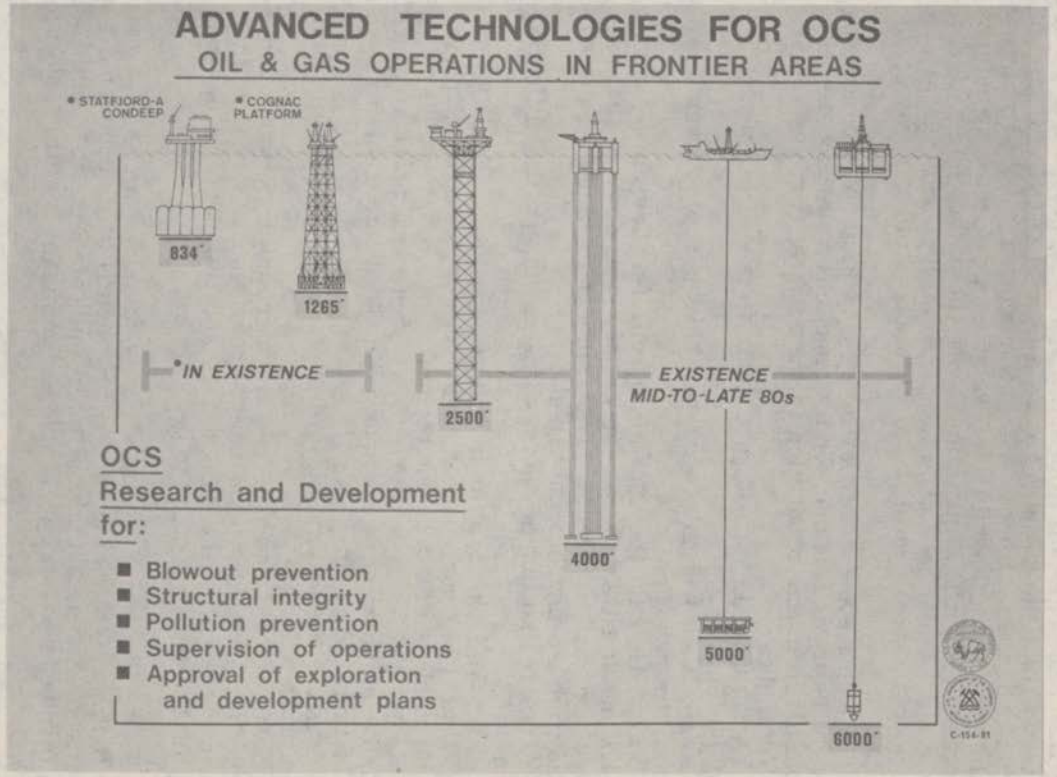
Mr. YATES. So far you have moved from the West Coast to the Gulf.

Mr. FREDERICK. If you are interested in the technology for the OCS, I can ask Mr. Kash again to explain what we are doing in that regard and what we think can happen.

TYPES OF PLATFORMS

Mr. YATES. Mr. Kash, do you want to tell us what can happen?

[The chart follows:]



Major research and development efforts concerning oil and gas platform technology on the Outer Continental Shelf are shown on this graphic.

Mr. KASH. As you know, the vast majority of production in the OCS around the United States has been from the COGNAC kind of platforms which are, almost without exception, steel structures. Over the years, the capability for water depth of those structures has increased. My first acquaintance with those, they had a kind of ceiling point of 700 feet of water and very clearly there is a breakover point where you have to go to some kind of new technology.

These are just some examples of varying kinds of technologies that might be used. This one, for instance, has a floating, semisubmersible platform and production to the surface. There are a variety of techniques——

Mr. YATES. How do you get production to the surface from that floating platform?

Mr. KASH. Well, basically what you have is a pipe going down, producing through there.

Mr. YATES. How do they get at the oil? Do they have to drill?

Mr. KASH. Oh, sure, but you can put the riser down in that kind of water and drill right now. That kind of drilling has already occurred from a semisubmersible platform.

Mr. YATES. Is that less or more expensive than putting a floating platform in?

Mr. KASH. Well, this is a floating platform.

Mr. YATES. I beg your pardon; is it more or less expensive than putting a stable platform on the bottom?

Mr. KASH. Well, it is less expensive. There is a point at which essentially the physical forces involved make it impossible to use a bottom-founded platform.

Mr. YATES. Is the bottom platform more desirable than the floating platform?

Mr. KASH. Well, it depends on the water depth. Bottom-founded platforms are more desirable now because you can predict their cost. These are still in the design stage and there is some question as to what the costs are going to be.

Mr. YATES. I see.

Mr. KASH. This work is really pretty far along and the assessments that we have had done, one of which is being completed by the National Research Council, really indicate that the technical people involved and our own people feel confident that this is just a step away.

Mr. YATES. Okay, thank you.

DESTIN DOME

What about the Destin Dome, Dr. Miller? Is that dead?

Dr. MILLER. Only half dead.

Mr. YATES. Only half dead, but moribund on the other side because the military is using it.

Dr. MILLER. Well, let me explain. They have drilled along the crest of the northern end and they have drilled the eastern flank of the northern half but I think many industry people still reserve in their own minds that there may be potential at the southern end or off the southwestern flank.

Mr. YATES. They haven't surrendered their leases?

Dr. MILLER. Some of them have.

Mr. YATES. Have they?

Dr. MILLER. I think they have kind of, if you do not mind my saying so, put it on the back burner now and are waiting. There are some companies who have been trying to get a joint group together to possibly do a COST well or something like that to explore some other possibilities further off, in the deeper water off Western Florida. However, to date, of course for many reasons nothing has been done.

EAST COAST AREAS

Mr. YATES. Now you are going up the East Coast, aren't you?

Dr. MILLER. Right. Basically, there are three major areas off the East Coast, the Northern Atlantic, the Georges Banks area, the Baltimore Canyon area, and the Southeast Georgia Embayment area.

There have been approximately six wells drilled in the Southeastern Georgia Embayment; they have been dry. The thinking and the speculation is that there may be potential further out in the deeper water because we have this area referred to here as the Blake Plateau, which is a large basin area at greater water depths.

In the Baltimore Canyon area, most of the drilling to date around what was referred to as the Stone Dome has proved to be dry. However, moving out to the edge they have discovered some indications of gas and one possible indication of oil. The potential is now thought to be further out at the shelf break and edge.

Moving north, of course Canada has been extremely successful in the Sable Island area and northward. So far we have leasing here (Georges Bank) but no drilling. However, we do have companies that are gearing up to drill, hopefully within the next year.

Mr. YATES. That covers the whole waterfront?

Dr. MILLER. Right.

ONSHORE POTENTIAL

Mr. YATES. What about on land? What about the overthrust?

Dr. MILLER. On land? Okay, on land, if you were going to look at the petroleum potential probably the best-looking areas for drilling in terms of near future exploration are, the overthrust and various areas in the Rocky Mountain Belt and across and down through into the Colorado Plateau area. The Nevada lease areas here are considered high-risk. There may be some potential but we know very little about it.

There is a fairly new exploration development in what is called the Smakover Trend that runs across through Louisiana and may have possible potential into Texas.

Mr. YATES. In the granite structures?

Dr. MILLER. No, not in the granite.

Mr. LOEFFLER. That is East Texas. You know, Mr. Chairman, there are about 254 counties in Texas. About six counties do not have production or potential.

Mr. YATES. Is that your district?

How about under the granite?

Mr. FREDERICK. I guess the question came up, "What about under the granite?" There may be some possibilities in the overthrust. I

am not sure about the Texas part but in the Overthrust Belt, the Western Overthrust Belt, there may indeed be some granite between the surface and some potential resources. I cannot promise anything in Texas.

Dr. MILLER. Now I have only addressed the conventional petroleum. I have not touched upon the areas of the unconventional possibilities, of the oil shales, the tight gas sands, the Devonian shale gas through the Appalachian Basin area.

Mr. YATES. How promising is that?

Dr. MILLER. It is promising. However, at this particular point we really do not have the technology. That has fallen into the area of research and development under the Department of Energy.

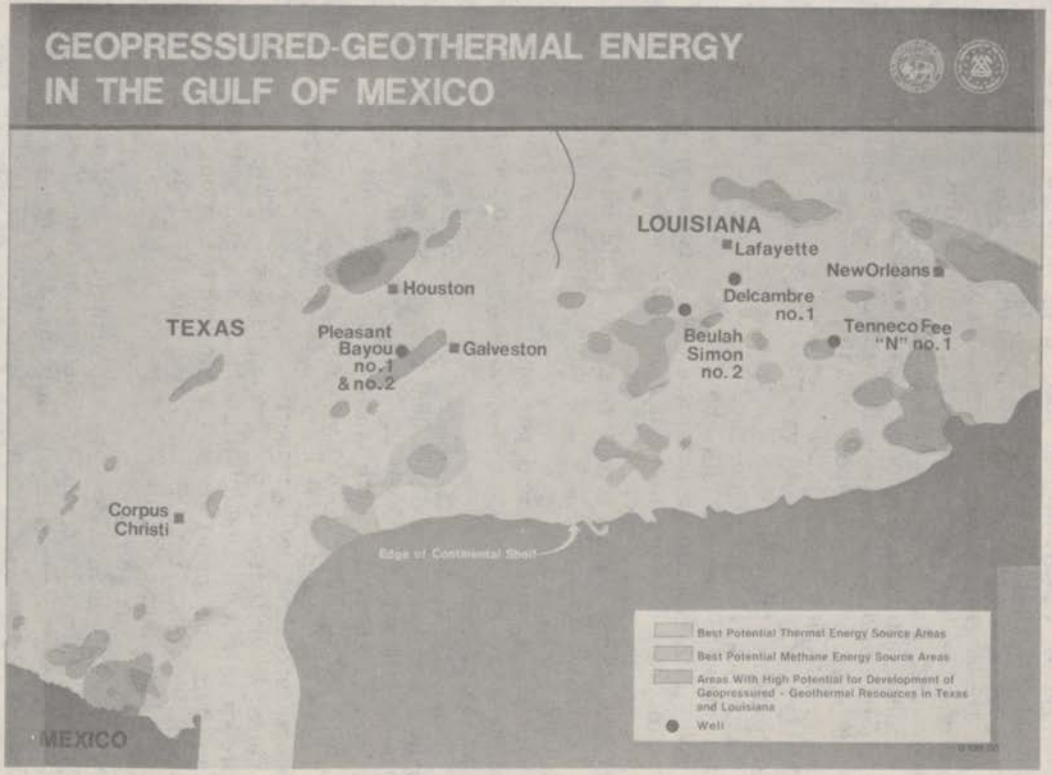
GEOPRESSURED ZONES

Mr. LOEFFLER. How about geopressurized gas in the Texas area?

Dr. MILLER. It would appear to be the opinion of many experts that we have high gas potential in geopressured zones but we do not have the technology of recovering that at this stage.

Here is an illustration of the geopressured-geothermal energy in the Gulf of Mexico and the basic areas, the major areas of the geopressured zones that you usually see in the literature are off the Texas/Louisiana coast.

[The map follows:]



This chart illustrates potential source areas of geopressured geothermal energy in reservoir fluids of the northern Gulf of Mexico.

Mr. LOEFFLER. The ability for technology to come on-stream is dependent upon what? What do we have to see?

Dr. MILLER. There are some major difficulties in terms of producing from these geopressured zones namely, the extremely high pressure and the feasibility of the equipment on the wells to keep from blowouts. There are extreme problems in terms of the salt water brines contaminating other formations and contaminating your Gulf area and so forth, fisheries problems and so forth.

Mr. LOEFFLER. When you speak of the intense pressure involved with this gas, explain what that is.

Dr. MILLER. Mr. Oden, would you like to address this? It is more of an engineering problem than a geopressured problem.

Mr. FREDERICK. Hillary Oden, sir.

Mr. LOEFFLER. When we talk about this area of geopressurized gases, essentially nonconventional gas to be recovered, what is the pressure involved that one must ultimately harness if we are to be able to utilize this as an energy resource?

Mr. ODEN. What pressure is it that we would have to harness?

Mr. LOEFFLER. The pressure that causes blowouts of the equipment on the wells.

Mr. ODEN. Up to one pound per square inch per foot of depth.

Mr. LOEFFLER. Now that sounds good to you. Tell me in layman's terms what that means.

Mr. ODEN. At a depth of 20,000 feet, you could have a pressure at the surface wellhead of about 20,000 pounds per square inch. The pressure that it would take to lift the overburden, to actually lift the ground, is generally slightly in excess of about a pound per square inch per foot of depth.

Mr. LOEFFLER. Therefore, it is potentially very dangerous at this point as far as technology is concerned.

Mr. ODEN. Well, there are deep sour gas wells in Mississippi that have pressures almost that high and they are successfully producing from them, although they had a dangerous blowout there a few years ago. However, that is on land; this is offshore, and that makes it a little more difficult.

Mr. YATES. Thank you, sir.

What does this mean? Are we exploring that technology now?

Mr. COHEN. Mr. Chairman, the Geological Survey does have a fairly significant program in the Gulf Coast geopressured zone, in part funded by the Department of Energy and in part funded by our own resources.

The amount of energy in the geopressured zone clearly is enormous, and there are three types of energy: mechanical energy associated with the abnormally high pressure in the geologic conditions, very high temperatures related largely to the great depth of burial, and methane gas in solution.

The engineering questions of how to handle this energy really are within the state of the art. The pressures can be contained and the hot waters can be handled, and methane can be extracted. The basic problem is one of economics. It is a fairly expensive operation.

ECONOMIC FEASIBILITY OF GEOPRESSURED ZONE

Mr. LOEFFLER. When will it become economically feasible?

Mr. COHEN. I understand that there are one or two wells that have been developed on an exploratory basis at a depth of somewhat greater than 15,000 feet, where conditions are such that I believe the estimates are $6 per thousand cubic feet, so we are getting into the framework of economic feasibility.

However, a great deal is known about the occurrence of geopressured gas, largely as a result of literally thousands of wells that have been drilled for oil, and there are very, very few wells that have the characteristics that I have just described to you. Our efforts are designed directly to attempting to map the occurrence of the highest potential zones for economic recoverability. The energy clearly is there.

HIGH PRESSURE POTENTIAL

Mr. LOEFFLER. Some of the areas that you have designated onshore as potential geopressurized gas areas are experiencing now drillings for wells in excess of 15,000 feet, and a high preponderance of the wells drilled in that area of Texas now are almost 20,000 feet. What happens if you hit a geopressurized zone? You have no way of knowing what you are going to get into when you go to that depth.

Mr. COHEN. The oil companies are very well aware, in fact, much of the information we have is derived from oil company data, some of which is public, some of which is private. The oil companies are very, very well aware of the potential for abnormally high pressures. Again, the technology is in place. You very rarely hear of a blowout these days. It can happen.

As a matter of fact, when they are looking for conventional gas, as is presently the case, they would prefer not to have to mess with it. When they find it they will collect some data and generally drill through it.

Mr. YATES. How far out do the tidelands go?

Mr. COHEN. I am sorry, sir, I do not——

Mr. YATES. How far out do the tidelands go? Can that be illustrated on your map there?

The tidelands are the areas where the States still have their jurisdiction and I wondered what the distance from shore would be, ordinarily.

Mr. KASH. Well, it varies, Mr. Chairman

Mr. YATES. I am sure it does.

Mr. KASH. The Congressman from Texas will know that Texas is always unique.

Mr. LOEFFLER. It is a great provider of energy. Put it that way.

Mr. KASH. I am trying to set a posture of being absolutely neutral here but it is basically nine miles off Texas, three miles off the rest of the United States except Florida, and that results——

Mr. YATES. Well, does the Federal Government recognize the 9-mile limit off the State of Texas?

Mr. KASH. In the State of Texas, sure. That is a part of the—well, it is basically a court decision, I think, on this.

Mr. YATES. Was there a court decision that extends the tidelands to 9 miles?

Mr. KASH. The State of Texas was a nation and was under six flags, I understand, and all of that makes some legal difference.

Mr. YATES. Okay.

Mr. KASH. If you go along here the line sort of runs out a ways, and then when you get over to Louisiana it drops back in. There has even been some expression of discontent in that on Louisiana's part.

PERSONNEL CEILING

Mr. YATES. All right. Thank you very much.

How many employees will you lose under the new budget?

Mr. FREDERICK. Sir, we will not actually lose any employees as a result of the new budget as we understand it at the moment. We will lose permanent ceiling on the order of about 241 or something like that from our proposed fiscal year 1982 ceiling.

Mr. YATES. Where will you lose them?

Mr. FREDERICK. Basically they will be distributed in those areas which have been reduced from the proposal.

Mr. YATES. Are Mr. Kash's inspectors going to be among them?

Mr. FREDERICK. We will try to preserve the inspectors at a reasonably high level.

Mr. YATES. Yes, but Mr. Kash said that 50 is not enough to take care of his field. How many more are you going to give him?

Mr. FREDERICK. I am not sure of the exact number but that program will not be reduced.

Mr. YATES. What programs will be reduced?

Mr. FREDERICK. The programs that are shown in the negative amendment will be reduced in terms of numbers of personnel. Mr. Chairman, the programs will generally be reduced across-the-board with certain programs left untouched in numbers of people.

Mr. YATES. What are the low-priority programs which are going to be touched? I am trying to find out where you are losing your people.

Mr. FREDERICK. We will lose people out of several different areas, including some of our basic mapping programs, some of the general hydrologic programs, some of our basic geologic activities.

We have not really allocated the cuts because we have just received them, and we really have not allocated them across the programs specifically to the program elements as shown in the budget request.

Mr. YATES. Would you prepare a table for the record, comparable to the one that BLM gave us, that shows where the losses in personnel are going to be taken?

Mr. FREDERICK. Yes, sir, we are prepared to do that.

Mr. YATES. Tell us where the losses will be with respect to each activity so that we know which are your higher priority programs and which are your lower priority programs.

Mr. FREDERICK. Sir, I am not sure you will be able to judge exactly on that basis but we will provide that.

Mr. YATES. All right.

[The information follows:]

Fiscal year 1982 reallocation of full time permanent positions

Fiscal year 1981	9,507
Fiscal year 1982 changes by program:	
Ground Failure and Construction Hazards	+1
Geologic Framework	+5
Development of Assessment Techniques	+3

Coal Resource Investigations	+8
River Quality Assessment (Federal)	−5
Regional Aquifer Systems Analyses	−5
Toxic Wastes—Ground Water Contamination	+5
Acid Rain	+10
Water Quality (Coop)	+7
Coal Hydrology	−25
Oil Shale Hydrology	−5
OCS Regulatory Programs	+10
OCS Resource Evaluation	−15
OCS Reserve Inventory	−20
Onshore Oil and Gas Leasing	+17
Oil Shale Lease Regulation	−5
Uranium Lease Regulation	+5
Royalty Management	+30
Barrow Gas Operations and Maintenance	−5
Net Change, SIR positions	+16
Reimbursable positions	−39
Net Change, USGS	−23
Fiscal year 1982	9,484

BUDGET REDUCTIONS

Mr. YATES. What is going to happen to Dr. Wesson's earthquake program? I noticed that the earthquake budget has been reduced by $3 million.

Mr. FREDERICK. Sir, we had a request for an increase of $3.8 million for fiscal year 1982.

Mr. YATES. That was not granted?

Mr. FREDERICK. We were reduced by $3 million of that $3.8 million. We still have an $800,000 increase in the earthquake program for fiscal year 1982.

Mr. YATES. You intended to take it up to $6 million?

Mr. FREDERICK. We intended to increase it by $3.8 million, sir. They reduced it by——

Mr. YATES. Over the increase of $3 million?

Mr. FREDERICK. No, sir. We went in with a total increase of $3.8 million, sir, for fiscal year 1982. In the negative amendment it was reduced by $3 million to $800,000.

Mr. YATES. All right, mapping has suffered the most, hasn't it? National mapping, Geography and Surveys—excuse me, not the most, but mapping has suffered.

Mr. FREDERICK. Yes, sir.

Mr. YATES. Geologic and mineral resource surveys and mapping were also cut back from your fiscal year 1982 request, weren't they?

Mr. FREDERICK. Yes, sir.

Mr. YATES. Water resources investigations were cut back. Are you going to be hurt in your water resources investigations by the cutback? Are you going to be streamlined?

I asked one of the witnesses who came in whether he would be hurt. He said, "Well, we have to become smarter."

Mr. COHEN. We are going to have a very, very strong program, sir.

Mr. FREDERICK. We had considerable input into——

Mr. YATES. It will not be as strong as the one you originally contemplated, will it?

Mr. COHEN. Not precisely.

Mr. FREDERICK. No, sir, it will not be as strong as the one we had contemplated. We think we can——

Mr. YATES. How badly are you hurt? I mean, I can look at this and see $6.3 million. Does that tell me how much you are hurt?

Mr. FREDERICK. No, sir. We will need to break that out for you to give you an idea of where those reductions were taken in our water resources area.

Mr. YATES. Let me put the question another way. If I were to ask you whether you need more money in any of your programs than what is shown by the Reagan budget, what would your answer be?

Mr. FREDERICK. It would probably be an evasive one but we could always——

Mr. YATES. I am getting kind of used to that, so far.

Mr. FREDERICK. Sir, we could always use more money, of course, but we do think this is not an unreasonable set of reductions considering the overall set of priorities that the administration has been given.

Mr. YATES. What about your priorities? Have your priorities been met by the Reagan budget?

Mr. FREDERICK. Our priorities have been taken into account in the development of this particular budget with respect to the Geological Survey. We had input and were able to make arguments for our programs and to make tradeoffs within that overall budget-cutting exercise.

Mr. YATES. What were your priorities?

Mr. FREDERICK. What were our priorities, sir?

Mr. YATES. Yes.

Mr. FREDERICK. We can give you only answers in very general terms. We obviously are concerned about the Geological Survey's fundamental programs and our basic research, including our basic mapping program, our basic geologic activities and analysis, as well as our basic hydrologic programs, plus of course we have to pay attention to our fundamental responsibilities in the area of energy and mineral resources, the leasing and the lease management responsibilities.

We tried to maintain the balance between our basic research and data-gathering and our ongoing operational responsibilities for energy and hydrology in that. One significant point to make is that we did look into our programs very seriously in terms of the way we are going about doing things, and we were able to make the $8 million cut in the geohazards work rather than a cut in some of our basic research programs. We think we can do the job with that reduction and still maintain the funds for some of the other programs that we consider significant.

Mr. YATES. Geologic hazards survey, that is the——

Mr. FREDERICK. That is the one we were talking about before, sir.

Mr. YATES. Well, let's look at your geologic hazards survey. [Reading:]

The $800,000 increase in the earthquake program will be used for field deployment of a two-colored laser measurement system for continuing monitoring of crustal strain expected to precede the next great earthquake on the southern San Andreas Fault.

Well, it is kind of interesting that you accentuate the $800,000 and not the loss of $3 million, isn't it?

Mr. FREDERICK. Yes, sir.

EARTHQUAKES

Mr. YATES. What will you lose with the loss of $3 million?

Mr. FREDERICK. Again, that was to be an increase in our program and——

Mr. YATES. I know, but for what purpose?

Mr. FREDERICK. Let's have Dr. Wesson explain that specifically.

Mr. YATES. What did you lose besides your left arm?

Mr. WESSON. Mr. Chairman, this entire $3.8 million increase was to focus on studies of these strange crustal movements that have been observed in Southern California over the last several years.

The $800,000 which remains of the original $3.8 million increase will be applied to conducting real time measurements of these movements using these multicolored laser distance ranging devices.

The studies which we will not be able to undertake which we had planned under the Carter budget would have included some measurements in deep holes to determine the nature of stress, and seismic reflection profiling through this region to try and understand the origin of these movements.

Basically, at the $800,000 level we will be able to monitor these movements. The additional $3 million was focused primarily on trying to understand the mechanism behind these movements.

There were two other aspects. We had also hoped with the additional $3 million to analyze strong motion data from the Imperial Valley earthquake and other earthquakes that we discussed last year, as you may recall, plus we wanted to do some additional work on developing a capability for issuing hazard warnings as we near the possibility of earthquake predictions.

Mr. YATES. How much would that cost?

Mr. WESSON. I believe the hazard warning was a relatively modest amount. We can supply the exact figure.

[The information follows:]

EARTHQUAKE HAZARDS WARNINGS

Of the original $3.8 million increase requested for the Earthquake Program, $300 thousand would have been applied to additional work on developing a capability for issuing hazard warnings.

HAZARDS INFORMATION

Mr. YATES. Should you have that?

Mr. WESSON. Well, Mr. Chairman, we are very concerned about our delivery system in effect for our hazards information overall for earthquakes, volcanoes, landslides and other geologic hazards. We have been focusing effort throughout the bureau on that. We have developed, I believe, a pretty strong capability but we had hoped to enhance that a bit.

Mr. YATES. How had you hoped to enhance it?

Mr. FREDERICK. Well, let me explain that one just a little bit. Specifically, through the volcano amendment we did devote some money to what Rob described as the delivery system.

We have existing, ongoing activities in the earthquake program, and in our environmental assessment office we have a specific function for taking the basic scientific information that we develop and getting it out on a timely basis to those decision makers who must act on that particular information.

Gene Thorley heads that particular office, and if you are interested in some more detail with respect to what we are doing, we can explain that. We think we still have a viable program in that particular area.

Mr. WESSON. Mr. Chairman, we are particularly concerned with developing an infrastructure, if you will, of people in State governments who understand the information we are trying to give to them about geologic hazards.

Mr. YATES. Suppose you have an incipient earthquake along the San Andreas Fault. Will this reduction hurt you or hurt the protection that the people of Southern California should have?

Mr. WESSON. Mr. Chairman, I do not believe at this point we are in a posture where we can say we are protecting them at the present time. We are doing the best possible job we can——

Mr. YATES. With the funds that are available?

Mr. WESSON [continuing]. With funds available of understanding the phenomena that are going on and explaining that, insofar as we are able, to the people and the government officials and so on.

These funds would have given us more capability to conduct investigations and to broaden our understanding of that but, given the current state of the art, I think it is not fair to say it would be a critical part.

Mr. YATES. All right. What you were really doing, then, was educating yourselves?

Mr. WESSON. I suppose, Mr. Chairman, you could apply that description to almost any research but the earthquake program is a very focused kind of research program with rather clearly spelled out social objectives. We are trying to predict earthquakes and to describe earthquake hazards such that protective actions can be taken against those hazards.

Mr. YATES. Well, is this the assumption of a risk that we ought to be taking? I know that the OMB says this is a risk we ought to take. Would you agree with OMB? I know you have to agree with OMB but would you agree with me that the degree of risk is increased or not?

Why did you ask for it in the first place, just to educate yourselves, or did you have something tangible in mind?

Mr. WESSON. No, sir, we remain concerned about the earthquake risk, particularly in Southern California, but within the context of the overall risks that we face from contaminated groundwater and everything else.

In particular, last year the——

Mr. YATES. What does that have to do with your activity, contaminated groundwater?

Mr. WESSON. Well, Mr. Chairman, it is all a question of adding the apples and oranges and coming up with a budget.

In last year when President Carter went to view Mount St. Helens and saw the destruction there, he directed Dr. Frank Press, then the President's Science Advisor, to carry out a review of what

other kinds of natural hazards might lead to catastrophes comparable with Mount St. Helens. Dr. Press led a study focused on the potential for large earthquakes in California.

Mr. YATES. Okay.

Mr. WESSON. As a result of that, we had worked closely with the Federal Emergency Management Agency, the Department of Defense, the Department of Transportation and the State government in California to carry out this study. I think significant progress has been made, particularly with regard to the Federal Emergency Management Administration and the State, in beginning to develop the capability for taking a prediction, should one arise, and going on with that.

PRECAUTIONARY MEASURES

Mr. LOEFFLER. Isn't it also true that there are a number of other institutions outside of the Federal Government that are involved in the type of precautionary study, the warning systems, et cetera, that can be implemented to provide safety?

Mr. WESSON. Mr. Loeffler, let me answer that question in two ways. With regard to the research program, of the approximately $32.5 million in Geological Survey's earthquake research program about $8 million are directed towards universities principally but also industry, to participate in that research program.

Mr. LOEFFLER. What is the participation rate?

Mr. WESSON. Excuse me?

Mr. LOEFFLER. At what rate do the private sector and the universities participate? What costs are borne by them? What is the split?

Mr. WESSON. Well, with regard to the research program, in our effort it is principally a one-way flow from our program to them. With regard to the actual implementation of earthquake-resistant activities, for example, in building codes, in land-use planning actions and so on, those costs are fully borne by the private sector.

For example, if as a result of our studies of the nature of very strong shaking near an earthquake some change is made in a building code, this change would be implemented through professional societies such as building code groups and so on, by local governments, and the additional incremental cost of making a building to meet that code would be borne by the private sector.

Mr. YATES. Okay.

Is this something that the States will take up now that the Federal Government is not going to finance it?

Mr. WESSON. I do not believe that the research which we have——

Mr. YATES. Certainly they will not do that.

Mr. WESSON. It will not be picked up but this research will be deferred.

Mr. YATES. I wonder whether it will not be picked up by the State of California, for example, because of the importance of knowing the kind of information you were seeking for their own protection.

Mr. WESSON. Mr. Chairman, it is true that the State of California is increasing their efforts for earthquake preparedness and increasing the expenditures of funds but the principle thrusts of their new

expenditures are in the area of preparedness and preparing for a prediction.

Mr. YATES. What about volcano expenditures? Is that part of this, too?

Mr. WESSON. No, it is not.

Mr. FREDERICK. No sir, not part of that specifically.

Mr. YATES. Has that been cut back?

Mr. FREDERICK. No, sir.

RESOURCE SURVEYS

Mr. YATES. Let's talk about land resource surveys now. You were cut back $2.4 million there and you say that the Geologic Framework Program will permit you to acquire seismic reflection data and geoelectric soundings across two areas instead of the originally-proposed five areas.

The areas not changed are one, Mr. Loeffler's ranch in the southwestern United States——

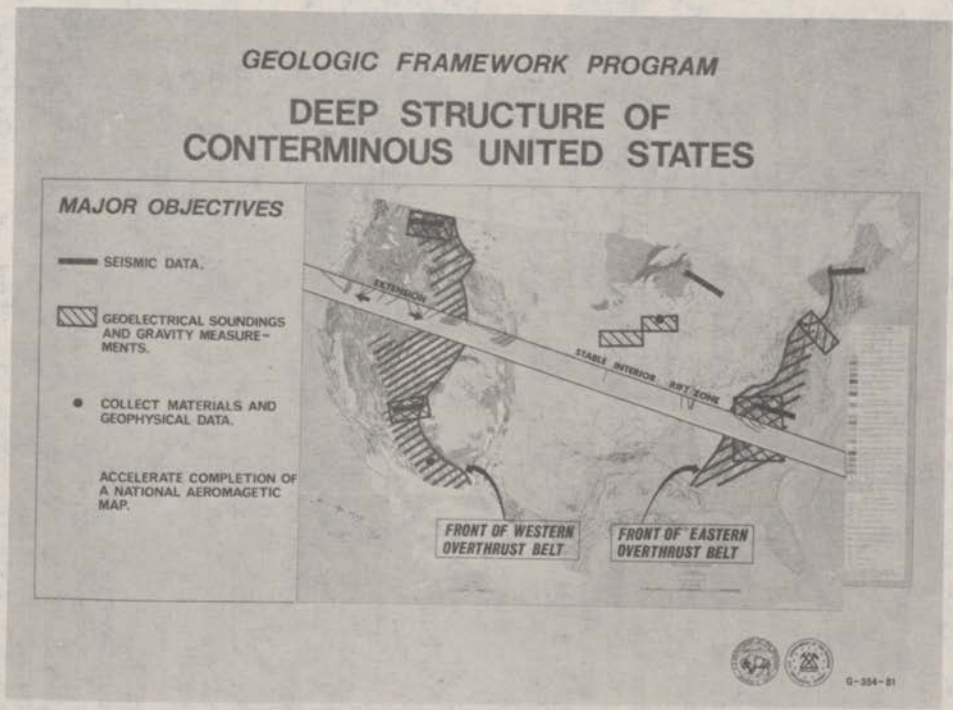
Mr. LOEFFLER. And, two, the overthrust belt in the northeastern United States. Which three areas were omitted?

Mr. FREDERICK. Let me ask Dr. Peck to respond to that question, sir.

Dr. PECK. The graph points out a number of areas which we are interested in studying over the next few years. With the cutback in the program, we will do the two that seem to be the most promising and then do some of the others in future years.

[The map follows:]

77-383 O—81—30



The tectonic map and generalized structure section of Conterminous United States illustrates the distribution and deduced configuration of selected geologic structural units of the continental crust. The exhibit shows sites proposed for study of deep crustal structure using seismic reflection surveys (heavy lines), geoelectrical and gravity soundings (black ruling), and deep drill hole (red dots) test methods. A magnetic anomaly map will be completed for the entire map area.

Mr. YATES. Why shouldn't industry do that rather than you?

Dr. PECK. The program is aimed at determining the deep structure of the United States and at identifying possible petroleum and mineral resource provinces that have been covered up. It actually relates to the problem of the Congressman from Texas who has granite at his place, because at least in some areas of the United States granite is not such a discouraging rock any more.

For example, work we did under our oil and gas program in the southeastern States, in the southern Appalachians, indicates that the granite and gneiss of piedmont, is underlain at a great depth by what may be sedimentary rocks which could be gas-bearing.

There is some indication that that may also be the situation in the Western Overthrust Belt in Arizona, and it is sufficiently promising that some of the oil companies drilled a well 15,000 feet deep in granite halfway between Tucson and Phoenix after a lot of seismic reflection surveys.

Mr. YATES. You left the money in this budget for the Congressman from Texas because one of the fields that remains is in the Southwest, is that correct?

Dr. PECK. It is this area in Arizona.

Mr. YATES. Not in Texas?

Dr. PECK. No, but we will certainly give some thought to Texas.

Dr. PECK. This is an ancient mountain range, the Appalachians, and it is buried under the Mississippi Embayment and then goes around through Texas. The Llano Uplift in Texas is really an extension of this same overthrust belt. I am really not kidding. There may be something to look for there.

Mr. LOEFFLER. This item is negotiable.

Mr. FREDERICK. Mr. Chairman, we were originally in for an increase for $4.5 million for this one, and again it was a priority judgment regarding the total program. We think it is fairly significant to better understand overall the basic development of the continent and areas where there might be oil and gas potential that we have not yet recognized.

Mr. YATES. I have examined the reasons behind your cut in the mineral resource surveys. Apparently those are some of your low-priority programs, aren't they?

Mr. FREDERICK. No, sir, that is an area where we do indeed have an increase from fiscal year 1981 to 1982.

Mr. YATES. That is not enough of an increase, apparently.

Mr. FREDERICK. Well, we think it is enough of an increase to make a sizable dent in the question.

Mr. YATES. What was the reduction in your energy resource surveys? You are being cut $1.5 million and that is for the reduction of oil shale investigations, right?

You are deferring it. Instead of three years for that you are making it four years.

Mr. FREDERICK. Yes, sir, we are stretching the program out.

Mr. YATES. Okay.

Dr. PECK. It is a supplement.

OIL SHALE INVESTIGATION

Mr. YATES. What is the oil shale investigation that you wanted to complete here? What do you want to investigate?

Mr. FREDERICK. We want to know more about the quality and quantity of the oil shale resource, especially in this category.

Dr. PECK. And its distribution. It is a program of systematic mapping and drilling in the Green River Basin with potential for oil shale, to determine the thickness of the oil shale horizons and their richness as far as oil, and the content of soda ash and other minerals that represent problems or represent possible by-products of oil shale production.

Mr. YATES. Is this on public lands or on all lands?

Dr. PECK. On both public and private lands but most of it is public land.

We are requesting a supplement for fiscal year 1981 of $1.6 million.

Mr. YATES. Will that offset this reduction?

Mr. FREDERICK. This leaves that increase in the program, sir. There was an additional increase in 1982 that we are pulling back in this case.

Dr. PECK. We think by refocusing that we can meet the BLM planning schedule.

Mr. YATES. That is really one of your priorities, then?

Mr. FREDERICK. Yes, sir.

OFFSHORE GEOLOGIC SURVEYS

Mr. YATES [reading]. Offshore Geologic Survey, you cut that back by $2.8.

This reduction will eliminate the proposed programs for geologic engineer studies in the frontier areas and the geologic evolution of the Atlantic Margin.

Well, isn't that kind of essential for work being done to prepare for leasing?

Mr. FREDERICK. Well, sir, there are two parts to that. The $1.8 million for the offshore geologic hazards was, again, a new program for fiscal year 1982 and a supplement to the other program. That was an increase for 1982 and it was backed off.

The whole question of engineering geology and geologic hazards for the frontier area remains—we think by internally re-looking at our entire activities having to do with the OCS and the OCS leasing process, we will be able to accomplish the overall objectives.

Mr. YATES. I would have thought you wanted to put much more work into the areas that are likely to bring in oil wells but you do not think that is that important?

Mr. FREDERICK. We will indeed put a great deal of work into those frontier areas that have potential.

WATER PROGRAM REDUCTION

Mr. YATES. Well we talked about The National Water Data System Federal Program didn't we? Here is an aquifer reduction [reading]:

> The proposed reduction of $500,000 will postpone the start of two new regional aquifer assessment projects scheduled for fiscal year 1982—

The Columbia Plateau in Washington and Oregon? My goodness. What happened to Senator Magnuson?

This year's delay in start will result in extending the completion date of the Regional Aquifer Systems Analyses Program from fiscal year 1988 to fiscal year 1989.

Well, Mr. AuCoin is not here today so I have no additional comment on that.

Federal/State Cooperative Program, a water use program [reading]:

This will result in reduced support in some States and possible withdrawal from the program in a few States. . . . lowest priority programs in the Federal/State . . . will be adjusted to accomplish the highest priority water use programs.

How do you know what the highest priorities are?

Mr. FREDERICK. We are in consultation with the States on this particular one. It is kind of a judgment between ourselves and the States.

Mr. YATES. We have not heard from the States on this. It cannot be very important.

Mr. FREDERICK. We think it may be important, sir. We are hearing from the States.

Mr. YATES. Are you? Well, if you are hearing I assume we will be too, then.

Minus $3.7 million for energy hydrology [reading]:

The increased funding for coal hydrology—$2.7 million—will result in a modest reduction of hydrologic data collection.

Okay, what about that one? You do not need that money now?

Mr. FREDERICK. Mr. Congressman, we think we can——

Mr. YATES. Defer it?

Mr. FREDERICK. We can defer that and still not impact the administration's coal leasing program. Basically, what we will do is pull back in some of the areas, mostly outside the presently-targeted high-priority coal leasing.

Mr. YATES. There is a $1 million cut for oil shale hydrology for the Green River Formation.

What about that one? Do you need it?

Mr. FREDERICK. No.

Mr. YATES. All right.

Mr. COHEN. The intention was to explore some of the deep aquifers as a possible source of additional water.

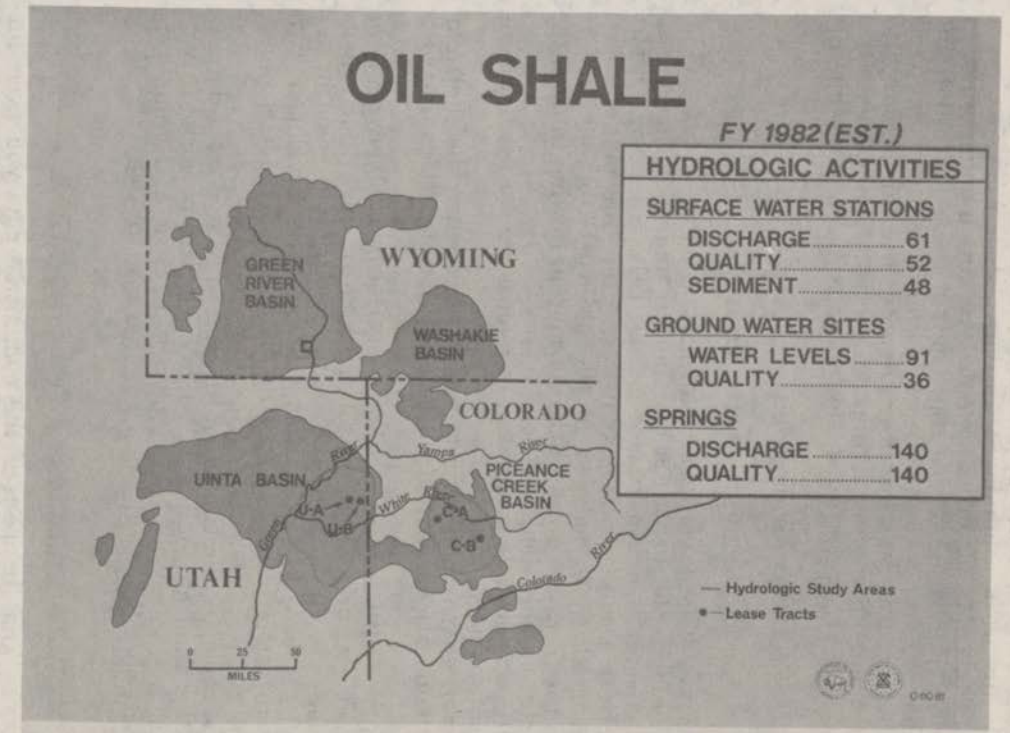
Mr. YATES. When are you going to do that?

Mr. COHEN. We have an ongoing oil shale program, and as we phase out ongoing work we would anticipate we would begin to pick up that work in the out years.

Mr. YATES. How important is it to know about this for our oil shale program?

[The chart follows:]

OIL SHALE



Ground water and surface water quality and quantity are monitored to provide background information to assess available water supplies for oil shale development and the implications of development on the hydrologic environment of a region. A computer model of the Piceance Creek basin is being developed to evaluate the future impact of water-supply development and in-situ retorting of oil shale on the hydrologic systems of the basin.

Mr. COHEN. It is and will be an increment of knowledge which would help support decisionmaking in the oil shale area.

Mr. FREDERICK. Mr. Chairman, we do have an on going effort, as Mr. Cohen explained. Also, this represents a fiscal year 1981 supplement that we proposed and the reduction is in fiscal year 1982. The 1981 money, if it remains, if you approve the supplement, will be used for the drilling and we think we can go ahead with some of the analysis, maybe at just a slower pace than we originally planned.

Mr. YATES. Go ahead, Mr. Loeffler.

PRIVATE SECTOR ROLE

Mr. LOEFFLER. Thank you, Mr. Chairman.

What role does the private sector play in many of these areas that the chairman is now asking about? Isn't there ongoing activity in the private sector as well that generates information? You know, if something is reduced in the ability that you have to proceed in the future, we still have information flowing in from the private sector as well, don't we?

Mr. COHEN. There is a great deal of hydrologic work being done in the private sector.

Mr. LOEFFLER. Why don't you talk about this when the chairman asks you the questions? Why don't you put that inflection into your response?

Mr. COHEN. With this particular area, the type of program we had planned, you are talking about the kind of work that private industry does not do. Normally, private industry will come in and build upon the base of information that we have developed. It is very rare to see private industry do this kind of developmental work.

As an example, as the chairman knows, we have done a detailed study of the Madison aquifer. We laid the framework. Private industry is in there now taking our framework and doing very detailed, site-specific work. That is generally the way the thing operates.

PROGRAMS BY PRIORITY

Mr. YATES. What happens if the committee cuts you even further? Do you do more streamlining?

Mr. FREDERICK. Yes, sir, I expect that is true. We hope you do not decide to do that.

Mr. YATES. Can you tell us which are your highest-priority programs and your lowest-priority programs?

Mr. FREDERICK. We can provide that information for the record, sir. I would not want to do that off the top of my head.

[The information follows:]

PROGRAMS BY PRIORITIES

In the high-priority list we have included core programs which are considered fundamental to the Geological Survey mission and suport directly high-priority national concerns. By listing a program as high priority, we intend to convey the message that the activity is very important and should be maintained at a reasonably high level. This is not to suggest that there are no changes possible. The fiscal year 1982 negative amendment reducing our original request by $37 million affects many of these high priority programs. Also, we are looking closely at our lease

support management activities to see if the process can be made more effective and efficient.

HIGH PRIORITY PROGRAMS

Basic topographic mapping.—Provides a planning framework for almost all decisionmaking activities having to do with the management and use of our lands and resources.

Hydrologic data collection and analysis.—Includes water data collection Nationwide and provides information to State, local, and National users. These data, always essential for proper resource development and management, will be even more critical in the next decade due to growing demand generally and increasing competition for finite resources, specifically between mining and agricultural users.

Lease management and support.—Effort includes activities to support onshore and offshore lease operations and subsequent mangement of leases on Federal and Indian lands. The programs provide an essential framework for the conduct of industry exploration and development activities on those lands. Without such a framework, industry energy and minerals development on Federal and Indian lands would be substrantially curtailed.

Energy and minerals investigations.—This program includes geologic investigations which support the fundamental understanding of the Nation's energy and mineral resources. The emphasis and effort in this area will in all likelihood increase due to accelerated efforts to understand and develop these resources.

Publication and dissemination of Geological Survey products.—This activity is essential in assuring that information collected and analyzed by the scientific programs of the Geological Survey is made available to users on a timely basis and in an understandable form.

LOWER PRIORITY PROGRAMS

NPRA.—We propose to eliminate the exploration program after this year and eliminate support of Barrow gas operations provided a suitable manager can be found.

Shallow hazards.—The OCS shallow hazards program will be scaled back in fiscal year 1982 as policy has been changed to rely on industry to demonstrate that drilling and production operations can be conducted in a safe manner.

Coal hydrology.—The objective of this program is to acquire and disseminate hydrologic information related to the mining of coal in support of Federal Coal Leasing objectives. This program could be reduced modestly and still meet the basic program objectives by restructuring the program to make it more efficient and effective.

Mr. YATES. Do you have any questions, Mr. Loeffler?

Mr. LOEFFLER. No, Mr. Chariman.

Mr. YATES. We are going to have a series of questions for the record and we will submit those to you.

[The questions and answers follow:]

Additional Committee Questions

NPRA

Question. Your justifications (GS-252) indicate that the Department plans to seek a contractor to operate and maintain the Barrow gas field for FY 1982.

- o Since your exploratory activity and some of the Navy activity is decreasing substantially in the future, have you discussed the possibility of the North Slope Borough taking over the operations of the field?

Answer. Yes. The Department believes that the responsibility for operating and maintaining the gas fields should be turned over to an entity of local or State government because it is an inappropriate function for the Federal Government, has resulted in a substantial Federal subsidy to a very small segment of the population, and places an inequitable tax burden on the general populace. Discussions were held with the North Slope Borough which explored the possibility of transferring to them, all rights, title, and interest of the United States to the natural gas located in the East and South Barrow gas fields. The transfer was not to include transfer of any lands but did include the transfer of all ancillary production facilities. As a result of these discussions, the Department met with staff members of the Senate Appropriations Subcommittee for the Department of the Interior and Related Agencies to propose an amendment to H.R. 7724. The proposed amendment provided for transferring the fields, as soon as practicable, after assuring that all production facilities would meet applicable Federal and State safety standards. Additionally, the proposed amendment repealed section 104(e) of P.L. 94-258 as of the date of transfer.

Question. What is your opinion of the chances of that occurring?

Answer. Because of the high rate of Federal subsidization in the current operation of the gas fields, it is highly unlikely that the North Slope Borough would accept the responsibility to operate the gas fields until they also had ownership of the gas fields and the ancillary production facilities. The Federal subsidy is the result of the difference in cost to produce the gas and the rate the users are charged. As a result of the direction to provide the gas at reasonable and equitable rates, the Navy established the rate to the native village of Barrow at $.324 per mcf. The Department of the Interior has continued to supply gas at the same rate. The Department is currently working with the Federal Energy Regulatory Commission to determine if the rates can and should be adjusted. The actual cost to produce the gas in FY 1981 is estimated to be $2.60 per mcf. Due to the loss of services previously supplied to USGS by the Office of Naval Research, the cost of production during FY 1982 will increase to $5.50 to $6.00 per mcf. The Federal subsidy to the Barrow natives is currently in excess of $2.00 per mcf and will exceed $5.00 per mcf in FY 1982. Actual subsidization is much higher in that the estimates provided are for gas field operation and do not include capitalization costs for the actual drilling of wells and construction and modification of the production facilities. Until the mandate contained in section 104(e) of P.L. 94-258 is repealed, or until ownership can be transferred, the Borough has no incentive to assume responsibility for the operation and maintenance of the gas fields. The Department of the Interior does not currently have the authority to affect such a transfer. Consequently, in order to assure the

continuing supply of gas to the native communities and Federal installations at or near Point Barrow, Alaska, the USGS is proceeding with a competitive solicitation for the operation and maintenance of the gas fields in FY 1982.

VOLCANOES - MT. ST. HELENS

Question. Please explain to the Committee what role the Survey played in providing warnings concerning the volcano, how you interacted with the variours governmental groups, and what overall effect you believe the Survey had in this regard.

Answer. USGS and University of Washington scientists, working together, first detected and monitored seismic activity at Mount St. Helens in early March. Subsequently, the USGS provided continuous warnings and hazard assessments to a wide range of officials in local, State, and Federal agencies. The USGS worked very closely with the U.S. Forest Service (USFS), the principal land manager in the vicinity. The USFS provided logistical support critical to the monitoring and warning efforts of the USGS.

These contacts with public officials were initiated as soon as scientists verified their judgments regarding the volcanic nature of the seismic activity. Public officials were briefed by March 24, 1980, although the official hazard statement from the the Director of the USGS was not sent until March 27. The agencies contacted included: Washington and Oregon Departments of Emergency Services, Washington and Oregon State Geologists, Federal Emergency Management Agency, Federal Energy Regulatory Commission, Nuclear Regulatory Commission, County Sheriffs, and news media. The official statement was updated three times to reflect major changes in the behavior of the volcano.

Public officials relied on USGS briefings for the scientific support of their policies, although the USGS was not involved in the actual policy making. For example, lumber companies used USGS information to determine basic survival requirements for working in the area and the State and USFS used our hazard assessments in determining the size and nature of the restricted-entry zones.

After the May 18, 1980, eruption and its declaration as a national disaster, Federal authority for response was delegated to a Federal Coordinating Office staffed by FEMA.

The USGS provided this Office with a technical liaison and several media spokesmen. These USGS liaisons provided information and assistance to the Federal Coordinator and, through this Office, to all the public and private organizations that responded to the disaster. Through this arrangement USGS scientists briefed the public and Congressmen at town meetings, and the Army Corps of Engineers was provided with hydrologic data used to reevaluate flood hazards, which in turn was used by FEMA to establish guidelines for relocating disaster victims. Also, the USGS helped establish and operate the Mount St. Helens Technical Information Network, a program to stimulate and update the flow of technical information about the eruptions.

Whenever the potential for flooding has arisen, the Survey has informed FEMA, the National Weather Service, the Corps of Engineers, and the Cowlitz County Sheriff's Department. In addition, sediment load data for the Toutle and lower Cowlitz Rivers and its potential for filling the channel and causing flooding has continually been provided to the Corps of Engineers and the National Weather Service.

Two examples of the effect of these communications are: 1) On May 27, 1980, the Survey provided the Corps of Engineers with the initial post eruption cross sectional plots of channel conditions for the lower Cowlitz River. This provided the Corps with the basis for its initial planning of dredging and diking work; and 2) On May 29, 1980, State, local, and Federal agencies and officials were warned by means of a Survey "Hazards Watch" announcement of the remaining flood hazards caused by reduced channel capacity of rivers.

We believe that our effort had a very beneficial effect. Some estimate that public policy, based on our information, saved thousands of vacationers from injury. USGS liaison to FEMA provided timely and efficient transfer of information and support to a large number of organizations.

Question. Do you have coverage of all the volcanoes in the chain or do you plan to expand this coverage over a period of time?

If you do not have complete coverage at this time, would it be prudent to have it at the earliest possible date? If so, what would the cost of such coverage be?

Answer. With presently available manpower and funding resources, we cannot cover all the volcanoes of the Cascade Range at this time, but we plan to obtain such coverage as rapidly as possible. According to our 5-year plan, assuming availability of personnel and funding, by FY 1983 we plan to establish or improve volcano monitoring networks on the potentially most hazardous volcanoes of the Cascade Range and of the Alaska Range, and at the same time continue the intensive monitoring of Mount St. Helens. The plan also calls for accelerated volcano hazards mapping and risk assessment activities, so that the most hazardous volcanoes of the Cascades will have been covered by the end of FY 1988. Volcano monitoring activites will continue over this period and will require increased funding to accommodate anticipated economic inflationary pressures. We believe that our 5-year plan is prudent in obtaining key information on the most hazardous volcanoes.

The total cost to complete volcanic hazards mapping and risk assessment of the 15 major Cascade volcanoes will be about $15 million (in 1980 dollars); present plans are to complete this mapping within the next 10-12 years. The total cost for establishment of monitoring networks (including seismic, deformation, gas and thermal arrays) will be about $12 million, to be completed over the next 3-4 years. Once implemented about $3.5 million/year will be needed to monitor and maintain these networks. If these plans for completion of hazards mapping and of establishment of monitoring networks were to be accelerated, additional personnel would have to be hired and additional funds would be required for helicopter and other logistical services. Additional funds would also be required to accelerate production of real-time seismic monitoring equipment.

Assessment of the hydrologic hazards associated with the volcanic activity of the major Cascade volcanoes would be about $12 million (in 1980 dollars). Presently, the Geological Survey plans to complete this effort in about 10 years.

The assessment of hydrologic hazards would include determination of ice and snow volumes, estimation of the magnitude of floods and mudflows, the route of the water or mudflows, and the area inundated. The cultural features--roads, bridges, communities, industries--likely to be impacted will be identified. The plan would also include the analysis of potential ash fallout on lakes, reservoirs, and rivers and water-management features--water and sewage treatment plants, irrigation works, fish hatcheries, etc. Rainfall-runoff characteristics would also be determined to provide an analysis of potential stream blockage after the eruption from erosion of mudflow, ash, or other volcanic debris.

Acceleration of this program could not be accomplished without hiring additional personnel. No long-term monitoring activites of quiescent volcanoes are contemplated.

Question. Please provide for the record a detailed breakout of the costs both in FY 1981 and FY 1982 of the various large segments of this program to include that related directly to Mount St. Helens and that related to other volcanoes, as well as the split between volcanic measurement and hydrologic measurement.

Why is the hydrologic activity included in the volcano program rather than in the water resources program?

Answer. As regards the geologic (including geophysical and geochemical) component of the program, in FY 1981 $3.4M are dedicated to the monitoring and associated hazards investigations of Mount St. Helens, and $3.8M are allotted for work on other volcanoes, including a small amount ($800K) on crustal dynamics-related investigations bearing on the association between volcanism and seismicity. For FY 1982, $3.3M is projected for Mount St. Helens, and $4.2M for other investigations.

FY 1981 funding for the hydrologic program is as follows:

1. Mount St. Helens

   A. Hydrologic Hazards Surveillance--collection of data, to monitor changes in snow and glacier ice volumes, streamflow, water quality, and stream channel morphology for flood warning system $1.1M

B. Interpretation of Land/Water Relationships

o Flood potential studies	$ 0.6M
o Geomorphology studies (to determine the nature and rates of erosion)	$ 0.6M
o Sediment transport	$ 0.55M
o Effects of volcanic ash on rainfall runoff	$ 0.3M
o Precipitation quality	$ 0.25M
o Toxic substances forming in lakes	$ 0.1M
Total - Mount St. Helens	$ 3.5M

2. Estimation of Hydrologic Hazards Potentials at other Cascade and Alaskan Volcanos (Mount Shasta and Lassen Peak, California; Three Sisters and Mount Hood, Oregon; Mount Rainier, Washington; and Mount Spurr, Alaska) $ 1.15M

Total for hydrologic program $ 4.65M

It is anticipated that in FY 1982, the same level of funding will be needed for each of the major program elements.

The hydrologic activity is included in the volcano program for budget presentation purposes and for coordinated management of the entire program. Final assessment reports on individual volcanoes will encompass both the geologic and hydrologic hazards. The day-to-day operational responsibilities of the volcano program reside within the separate geologic and water resources organizational units.

Question. Of how much value has the continuing work at the Hawaiian Volcano Observatory been in the assessments and predictions concerning Mount St. Helens?

Answer. The continuing work at the Hawaiian Volcano Observatory (HVO) provides an important basic resource in experience, training, and manpower for the Volcano Hazards Program. Because of the high frequency of eruptions of the active Hawaiian volcanoes, HVO continues to serve as the training ground for USGS volcano monitoring specialists and as the natural proving ground for the testing of the monitoring instrumentation and concepts. Were it not for the cadre of experienced volcanologists--present and past staff members of HVO--the USGS response to the renewal of eruptive activity at Mount St. Helens would not have been as timely or effective. The staff at HVO has served and will continue to serve as a manpower reserve of personnel trained and experienced in dealing with live volcanoes; in turn, in a major crisis involving a Hawaiian volcano, the staff headquartered at Vancouver monitoring Mount St. Helens can provide a pool of knowledgeable personnel. Having two well-staffed and well-equipped volcano "observatories"--one at Mount St. Helens and the other in Hawaii--offers a unique opportunity of

utilizing the differing styles of eruptive activity (explosive eruptions of the Cascades versus the generally non-explosive eruptions of Hawaii), to test and evaluate which monitoring systems are most effective under these contrasting types of activity.

Question. Your justifications (GS-71) indicate planning for "urgently needed upgrading" of the Hawaiian Volcano Observatory.

What kind of upgrading is needed and when will the upgrading be done?

What is the magnitude of the cost involved?

With regard to facilities, what kind of facility is expected to be constructed in the Mount St. Helens area and what kind of facilities are required to monitor the entire Cascade network?

Answer. The proposed upgrading is a joint U.S. Geological Survey-National Park Service effort, per a Memorandum of Understanding executed in November 1978, that would move the observatory staff out of the cramped, dilapidated 56-year-old building it now occupies into new quarters. Joint planning by the USGS and the National Park Service (NPS) to date has centered around the more efficient and expanded use by both agencies of the current site of HVO. Present plans call for the two agencies to use contiguous space: NPS to refurbish and occupy the space currently occupied by the USGS; and the USGS to move into a proposed new wing.

Neither agency can proceed independently of the other: the space (the current HVO facility) needed by, and to be refurbished for the NPS, cannot be vacated by the USGS until the construction of the proposed new wing is completed, so that the USGS can move into it without disrupting the continuous monitoring of the active Hawaiian volcanoes.

The need for upgrading is urgent because:

- HVO is the training ground for USGS and other foreign volcanologists because of the high frequency of eruption of Hawaiian volcanoes in contrast to the comparatively low frequency of eruption of Cascade volcanoes.

- HVO facilities are seriously overcrowded. The staff and visiting volcanologists are stuffed into old, cramped buildings as well as into two temporary trailers that the Park Superintendent of Hawaii Volcanoes National Park has requested be removed as soon as possible.

- Electrical wiring, plumbing, and heating are all substandard, and the current facilities and staff of HVO are housed in structures that are the most unsightly, dilapidated, and unsafe of any USGS installation in the country and do not meet OSHA (or any other) safety standards for earthquake and fire hazards. This situation has the continuing potential of posing severe liability for the U.S. Government in the event of a disaster affecting visitors or HVO staff members. The cost and funding of the proposed HVO upgrading have been updated. In an initiative for the FY 1981 budget cycle, the estimate of the proposed construction from the A-E contractor

(URS Corporation Hawaii, Honolulu) was $2.87M. With completion of the preliminary design (Title I services), the Basic Agreement with URS Corporation was not renewed, and construction documents (Title II) have been assigned to the engineers and architects of the Denver Service Center of the National Park Service.

Because of inflation and the inclusion of basement storage space in the proposed facilities, the current cost estimate is $3.86M. The HVO project is among the top five priorities of the Bureau's program for facilities' repairs, alterations, and construction.

With regard to the monitoring of Mount St. Helens and other Cascade volcanoes, the facility established in Vancouver, Washington, in FY 1981, will continue to function for the next several years as the principal focus of USGS efforts in the study of the entire Cascade Range. The Vancouver operations are currently housed in leased space (three separate but closely located buildings), and efforts are underway to acquire lease space sufficient to consolidate personnel and facilities in a single building. Planning for construction of a major volcano monitoring and hazards mapping center in Vancouver or elsewhere in the Pacific Northwest region continues, but such planning is contingent in large part upon long-range bureau plans whether or not to establish a regional center in the Pacific Northwest--a concept under consideration by a bureau-level task force.

Question. Of what assistance has your work in earthquake prediction been in the Mount St. Helens episode?

Answer. Precursory seismic signals, in earthquake prediction as well as eruption prediction, provide the most reliable and timely indicators of possible activity. Because there existed an adequate regional seismic network in the State of Washington, operated jointly by the University of Washington and the USGS and supported by the Earthquake Prediction and Geothermal Programs, the early warning signals from Mount St. Helens were detected as early as March 20, 1980, a week before the first eruption. This advance notice allowed the needed time to install additional stations required to more closely monitor the volcano. Especially important in this regard were the advances in the refinement and operations of "real-time" computerized systems for locating seismic events developed in recent years in connection with the Earthquake Prediction Program of the USGS.

WATER PROBLEMS

Question. What actions are being taken on local level to reduce consumption of water?

What action, if any, can be taken by the Federal Government to alleviate the problem?

Is the Federal Government doing anything in this regard?

Answer. State and local jurisdictions are invoking various restrictions on water use ranging from towns banning the washing of cars to the implementation of more stringent measures on a statewide basis (e.g. New Jersey). Officials in some States are considering such things as water hauling, interbasin water transfers, and emergency well drilling.

The Federal Government can, and is, providing technical assistance and advice. For example, the Geological Survey is currently giving wide distribution to a very popular handbook for designing a local water conservation plan. The handbook entitled, "Before the Well Runs Dry," was prepared in cooperation with the New England River Basins Commission. Also, the Survey is providing hydrologic information on surface and underground water resources throughout the drought-stricken section of the Nation.

Question. Please explain how the data that you gather in your water quality program, your State cooperative program, and your regional aquifer program could be used to affect water policy.

- o Is this done in any fashion?

Answer. Information from all of these programs provides a firm data base for design of effective management practices and for establishment of national, regional, or local policy. One major component of our national water-quality program is NASQAN (National Stream Quality Accounting Network). The data from this program have been used for several years in the preparation of the Annual Report of CEQ (Council on Environmental Quality) to describe water-quality conditions nationwide. One of the primary objectives of NASQAN is the detection of trends in water quality. Because of the natural variability in water quality, it takes several years of data to distinguish between trend and "noise." Now that 5 to 8 years of data exist at these stations, it is possible to describe the trends, and the Geological Survey is proceeding to perform and publish analyses of trends. These results will show the areas and the ways in which the waters are improving or degrading. This will provide policymakers with an indication of the effectiveness of programs and the need for new directions.

The Federal-State Cooperative Program provides information which is essential to the formulation of water policy. Data from this program forms the core of our knowledge of the Nation's water resources and has been the source of information on most of the Nation's water problems: drought, floods, ground-water depletion, and water-quality degradation. For example, over the last two decades there have been many cooperative projects dealing with the hydrologic impacts of surface mining of coal and oil shale. These studies have provided an information base for the development of policy and legislation concerning surface mining. There have been ground-water studies which have led to the development of State laws and interstate compacts dealing with ground-water management. Data from the Cooperative Program have been used in making decisions in emergency situations. For example, in the 1976-77 drought emergency in the western States, the Geological Survey's rapid response would not have been possible without the data accumulated by the Cooperative Program.

The first of the Regional Aquifer System Analyses (RASA) are only now entering the report-writing stage, but they will provide policymakers with necessary information and tools for evaluating impacts of changing patterns of water use in the areas studied. The Madison Limestone Project (the prototype study for the RASA program) has provided important information for evaluation of coal slurry pipeline proposals in the northern Great Plains.

Question. In general what is the trend in water quality in this country?

Answer. Over the past 8 years, the Geological Survey has implemented a national program for collection of water-quality data in streams and rivers. The constituents for which trend-detection has been attempted have shown worsening conditions in some areas and improving conditions in others. Some trends observed at the Geological Survey's 516 National Stream Quality Accounting Network (NASQAN) stations include the following: 1) sulfate concentrations are trending upward in the northwest, southern midwest and southeast, and downward in the northeast; 2) nitrate concentrations are trending upward in the northwest, much of the midwest and most of the east; 3) phosphorus concentrations are trending downward in the Great Lakes region and upward over the rest of the midwest; 4) fecal streptococcus counts are trending downward in most of the east and midwest.

For other constituents such as toxic trace elements and manmade organic compounds, it has only been in the last few years that instrumentation and methodologies have been available to obtain enough data at the appropriate detection levels and cost to be able to build a data base for the detection of trends. The data collected to date indicate no alarming increases in the concentrations of some manmade organic compounds in local ground-water supplies in many areas of the country. In many cases, these substances are thought to be from unregulated waste disposal sites 20 years old or older which have been forgotten about or unknowingly put to other uses.

Findings of recent studies of the quality of precipitation (acid rain) and its effects on streams and lakes in the northeast have been inconsistent. In New York State, some lakes show a definite trend toward higher acidities (lower ph), while others do not. In Pennsylvania, a study of several tributary streams in undeveloped watersheds showed no trend to higher acidities over the past 5 to 10 years. Precipitation quality data collected at several sites in New York for 13 years showed decreasing acidity at some sites and increasing acidity at about an equal number of other sites. At stations in small tributary streams in the Geological Survey's Hydrologic Benchmark program, acidity is trending upward (ph downward) in the western states and downward in the northeast.

- In terms of both quality and quantity, what are the major specific problems that we will face in the foreseeable future?

Answer. Supplies of surface water for agricultural, industrial, and domestic use appear to be adequate, in most cases, when rainfall is normal. But most supplies will be short during periods of extended drought. As recent examples, California experienced two successive winters, 1975-76 and 1976-77, of record below-normal precipitation and would have been severely stressed had the drought continued for a third year; much of the southwest, southeast, and northeast have had well-below normal precipitation for the

past year and are now beginning to experience crop losses and short domestic supplies. When surface-water supplies are short, ground water is used more extensively which increases drawdown in aquifers that are, in many places, overdrawn already. In drought conditions also, less streamflow is present to dilute the concentrations of dissolved constituents; thus the concentrations of all such constitutents will tend to rise, sometimes above levels required for protection of drinking water supplies.

Another potentially serious problem is contamination of surface and ground water from uncontrolled disposal of toxic wastes such as manmade organic compounds, acid containing high metal concentrations, and radioactive wastes. Contamination from leaching of mine tailings, shafts, and pits continues to be a serious threat requiring more study.

Runoff from urban areas contains high concentrations of a number of consitutents. In many cities, this water is impounded for percolation to ground-water aquifers or disposed to various surface-water courses. Studies of the long-term effects of this practice have been underway for the past few years but present knowledge of these effects is still fragmentary and incomplete.

o Are any actions being taken to alleviate these specific problems?

Answer. Although the Geological Survey has no regulatory authority, it is charged with the collection of data and the assessment of the Nation's water resources. The Geological Survey feels strongly that it is most important to build and maintain a nationwide network of surface and ground-water quality data collection sites, to continue programs of water resource evaluation, and to develop additional tools for data collection and evaluation. There is a continuing need to study the impact of current environmental priorities and actions as well as the impact of changes in those priorities and actions.

Question. With regard to the possible contamination of ground water by toxic waste, please explain what the Survey plans to do in FY 1982 (GS-157 and 158).

Answer. The Survey plans to initiate a new program for $1.0 million in FY 1982. The program will emphasize developing scientific understanding of phenomena and processes affecting the fate of toxic compounds in the subsurface. Activities in FY 1982 will include: (1) start the development of a nationwide assessment of ground water quality and related pollution problems; and (2) greatly enhance research on the chemical and physical processes of the movement of the multitude of contaminants in the subsurface.

o What is EPA's responsibility in this area and how will your work assist them?

EPA's responsibility is one of protecting the environment and the public from harmful effects of toxic wastes. Their regulatory function includes establishing legal standards and criteria for site performance and waste management, determining compliance with regulations, and enforcing regulations.

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The Geological Survey's program will assist EPA by (1) enhancing our in-house abilities to provide them with technical advice, and (2) providing information on scientific advances in the understanding of subsurface contaminant behavior, whereby EPA will have a more rational basis for establishing realistic standards and criteria and for developing feasible mitigation techniques.

- How would this work differ from that work that you do with regard to the burial of nuclear wastes and the study of the movement of those wastes through the ground water system?

The programs are closely related with considerable transfer of technology from the radioactive waste studies to the toxic waste programs. The toxic waste program will emphasize the wide range of inorganic and organic toxic compounds, as opposed to elemental radionuclides in the radioactive waste program. The physical, chemical, and biological processes affecting toxic compounds are largely different and less completely understood than those for radionuclides. For example, all radionuclides have a predictable half-life, but some toxic compounds and elements have little or no natural decay.

- How will the proposed reduction of $500 thousand in the program affect it?

Selection of sites for field research will be deferred 1 year. Research on contaminant behavior in the unsaturated zone will be deferred 1 year.

POSSIBLE THEFT OF OIL ON ONSHORE LEASES

Question. Please explain what portion of a lease is under the authority of the Geological Survey, and what items an inspector would typically review?

How is it determined both onshore and offshore?

What frequency and depth of inspection is required?

Answer. After a lease is issued either onshore or in the Outer Continental Shelf (OCS), the Geological Survey (GS) has the responsibility to approve applications for permits to drill (APD's) in consultation with other agencies, supervise all drilling and producing operations conducted on the lease, and collect the prescribed royalty on production. Jurisdiction begins with drilling and ends with the exhaustion of production, abandonment of the wells, and reclamation of the disturbed areas. On the OCS, GS has the added responsibility to administer geologic and geophysical exploration permits and for permitting certain pipelines.

The laws and regulations pertaining to onshore inspections do not specify the frequency at which the various types of operations are to be inspected; however, as a minimum, we believe each well should be inspected once while being drilled, once a year while in production, once while being abandoned, and once after abandonment. In addition, any accidents or oil spills should be inspected and all production measurement equipment checked at least once a year. When deficiencies are found, the well or site must be reinspected to verify that the deficiency has been corrected. The scope of the inspection is to examine all equipment and procedures at the site to assure that they are functioning properly and that they meet the standards prescribed by regulations.

ENERGY RESOURCES

Question. With regard to world-wide resources, what are the most promising areas in terms of future of oil production?

Answer. Most investigators believe that most of the rest of the world's oil will come from already producing areas, but several frontier areas likewise bear watching. Major producing areas outside of the Middle East OPEC that are promising and will add significant discoveries in the near term include: Southern Mediterranean (Algeria, Libya, Egypt), southeast Asia (especially Indonesia and northwest Australia), China (especially offshore), USSR, west Africa (offshore, south of Nigeria), Brazil (offshore, south of the easternmost land projection), Venezuela, Mexico, U.S. (especially Alaska), Canada (especially east coast offshore).

Frontier areas with significant but longer term potential include: Arctic areas of U.S., Canada, and USSR. The Beaufort Sea of U.S. and Canada is particularly attractive, as is the northern Bering Sea (Navarin Basin). Little is known about most of the USSR Arctic, but indications in general are favorable, the Barents Sea, on the Border of Norway, appears particularly favorable, is accessible, and will be a major international boundary issue. Western and southeastern China basins are very large and have many favorable petroleum characteristics. Offshore India in the Arabian Sea may be favorable and Sudan and Chad in central Africa are encouraging.

- In your opinion is there potential for increasing the overall annual production of the world outside of shut-in OPEC areas?

Not likely, certainly in the near term. Annual production is already at a very high level owing to early discovery of very large, accessible fields; and in recent years, discoveries have started to lag behind production. Just to stay even though, or arrest the downturn, will require a continuing extensive exploration and analysis effort that can be enhanced by U.S. Government awareness. Production, however, is not just a function of exploration. Required also is an incentive to produce, and most countries have little incentive to increase production beyond their ability to absorb petro dollars; reserve/production ratios, therefore, are likely to remain high thus limiting production even in non-OPEC countries such as Norway and Mexico. Once again, government awareness of the potential for countries to produce is important.

NATIONAL MAPPING AND GEOGRAPHY PROGRAMS

Question. With regard to your mapping program, what costs are charged to those people to whom you sell maps?

Answer. Costs for printing and distribution are recovered in the price of the maps.

Question. Has there been any consideration given to increasing the charges to various users of the maps that you provide?

Answer. The last increase in map prices was 1976. The prices of the maps are evaluated annually to assure the printing and distribution costs are being recovered. A pricing study is currently underway and appropriate recommendations will be forwarded to the Secretary of the Interior for approval.

Question. In the digital mapping area you propose to set up a separate account that will become at some point a self-supporting revolving fund. Your request for this item increases from approximately $2 million a year to $6 million in FY 1982.

- o Please explain why such a large increase is needed. For example your justifications (GS-255) show workload rising from 4,500 units to 9,500 units in FY 1982.

Answer. In FY 1980 and 1981 the GS has responded to Federal requirements primarily for the land net category and boundaries category of digital line graphics and for digital elevation models derived from standard mapping operations. The land net category and the boundaries category are the least expensive of the five categories to digitize. In FY 1982 the GS plans to digitize transportation and hydrography data to start meeting identified requirements of TVA, BLM, USFS, USGS, NPS, WPRS, and FWS.

Question. Why is there such a need for such a dramatic increase in the workload in this area?

Answer. The production of digital cartographic data to date has fallen short of the identified needs of Federal agencies. With OMB support, the Survey proposes to assume the role of principal producer of this data. Within the Federal sector alone, at least 16 agencies have varying capabilities to collect, analyze, and output digital cartographic data. Requirements for digital cartographic data are nationwide, and many areas have overlapping requirements for certain base categories of data. Multi-agency use and interchangeability of this data requires all digitizing for agencies be to common standards of content, format, and accuracy. This would be impossible to achieve without a central organization with authority and knowledge to assure adherence to common standards. Because of its expertise in conducting the national mapping program, which includes mapping of the traditional base categories, and its current leadership role in the R&D and production activities concerned with digital mapping, the Geological Survey is uniquely qualified to manage the digital production of basic map data. To ensure the GS can respond to the requirements of Federal agencies and demonstrate the leadership capability in the digital mapping field, the program requires production increases in the requested amounts.

Question. With regard to the fund, if it requires $6 million in FY 1982, what revenues will accrue to the fund for products sold in that year?

Answer. The Geological Survey digital cartographic data production in FY 1982 will be a positive response to high priority requirements from other Federal agencies. Therefore, it is reasonable to assume that the output for

that year will be sold at least one time. It is estimated that in FY 1982 about 10 percent of the previously produced Digital Cartographic Units (DCU) will be sold. Based on these assumptions and dependent upon unit pricing, estimated revenues for FY 1982 could be as much as $1 million.

Question. When do you project that revenue and cost will be approximately equal?

Answer. Present estimates indicate revenue will be higher than cost in FY 1988.

Question. How do you expect to be able to calculate a price that will give you a break even for the fund?

Answer. The GS is planning to contract for a detailed market analysis to identify the number of multiple users in the Federal, State, and local governments and private sector. This study is expected to determine the equitable price ranges acceptable to all users, and the extent of a distribution network to ensure all users have access to the data. The production costs for DCU's will be computed and combined with the market analysis for calculation of the price. The prices will then be reviewed on an annual basis and adjustments made as necessary.

Question. Do you expect to provide new equipment from the proceeds of the fund?

Answer. The GS presently has a budget element, "Modernization of Mapping Technology," which funds the purchase of new technology for the National Mapping Program. This technology involves both hardware and software and has the capability to be used in the traditional mapping program and the digital cartography program. The GS proposes to continue funding the hardware procurement from outside the fund and charge the fund for appropriate digital program usage time.

Question. If the fund will not be self-sufficient for several years, what is the urgency in setting up a revolving fund now?

Answer. Through a revolving fund the Digital Cartography Program can respond faster to market demands for digital cartogrpahic products by having the flexibility to use the money in the Fund more than once a year. Although present analysis indicates that the Fund will not be self-sustaining until FY 1988, establishing the Fund and the legal basis now for full-cost-recovery pricing will assure effective pricing policies as the program grows. The ability to use sales receipts for additional work will help to allow the demand to determine the size of the program.

Question. Please provide for the Committee an indication of who buys the product, what the various uses of the product are, and why there will be an increasing demand in the future.

Answer. In FY 1980 more than half of the purchasers of digital cartographic data were Federal agencies, followed by industry, academic users, State and local agencies, and individual users.

Preliminary findings from a study conducted by a marketing analysis firm indicated that the prime market areas outside of the Federal Government are:

- o Architectural, Engineering, Planning - site analysis, environmental assessments.
- o Computer service organizations - repackaging of the data including combining it with other data to develop information and/or products for applications consultants and decisionmakers.
- o Resource groups (oil, gas, coal, minerals) - resource assessments.

Users of digital cartographic data recognize the unique capabilities now available to combine the data with a myriad of non-cartographic data in modern computer systems to accomplish in a short period of time what they otherwise could not do or would find impractical to attempt, that is, evaluate alternatives based on many parameters that should be weighed. Data sets can be merged, analyzed, and evaluated to produce statistical data, matrix tables, graphs, drawings, maps, and charts designed for special purposes.

Major users of digital cartographic data are involved in solving environmental, energy, and natural resource problems receiving national attention. Many of the uses are to obtain data needed to effectively implement programs mandated by Federal legislation, such as the Clean Air Act, Clean Water Act, Surface Mining and Reclamation Act, Federal Land Policy and Management Act, etc. For example, combining of terrain and slope data with geologic data has been helpful in identifying potential landslide areas for incorporation in zoning plans. Slope and aspect data with snow data is used in avalanche studies in winter recreational areas, particularly western ski areas. Slope, timber, and meteorological data are being used in computerized programs to rapidly predict forest fire movements, and thus reduce losses in both life and property. Slope and grazing data are being used in developing new public rangeland policies. Terrain and coal core data are being used to calculate overburden data to determine mining alternatives and develop reclamation plans. Terrain, slope, soil, and agricultural data are used to identify and understand the movement of non-point pollution source. Terrain and meteorological data are used to create models to predict and reduce potential smokestack pollution problems and the environmental effects of changing from oil or gas to coal in fueling powerplants. Digital land net data, lease records, and digitizing geologic structure data are used to re-evaluate old and evaluate new oil fields for developmental purposes.

The aforementioned market analysis firm reports that there is currently a $250 million market including software/hardware/data/services and growing at a rate of 30 percent per year.

Question. With regard to digital mapping, are there any other agencies of the Government involved in producing digital maps?

Answer. Yes, many Federal map using agencies have at least experimented with producing digital maps or data to produce special purpose maps; however, most of their work has been with thematic data unique to their specific needs. Digitizing of some base categories of GS maps has been done

by other agencies due to the lack of this digital cartographic data. The utility of this digital data is often limited to the specific agency's needs and not suitable for inclusion in a data base.

Question. If so, how is the overall mapping activity coordinated?

Answer. The Secretary of the Interior has designated the Geological Survey as the focal point for digital mapping activities in the Department of the Interior. To facilitate information exchange at the working level, the Department of the Interior, in cooperation with the Department of Agriculture, has established a Digital Mapping Policy Committee that has representation from the major digital users. The committee is chaired by the Geological Survey and includes the Fish and Wildlife Service and Bureau of Land Management from Interior, and Forest Service and Soil Conservation Service from Agriculture. One major objective of the committee is to coordinate the overall digital cartographic activities within these agencies.

Coordination of digital cartographic activities with other Federal agencies is presently carried out with varying degrees of success under the implied authority of OMB Circular A-16. A new OMB circular which is under development and which specifically addresses Federal digital cartographic activities is badly needed.

Question. Would any of their mapping activity also be part of the data base that you use for producing maps?

Answer. Generally the Geological Survey digitizes only five standard base map categories, while other agencies digitize specialized thematic data pertinent to their program needs. Under the authority of the proposed new OMB circular, there may be occasions when user agencies may digitize base map data with Geological Survey concurrence to common standards for incorporation in a national cartographic digital data base. Major objectives are the coordination to ensure common standards and specifications such as formats, attributes, etc., for compatability in computer processing of data, and the resultant reduction in the production of single purpose data bases.

Question. Currently, what is your overall investment in equipment for the digital mapping program?

Answer. Most of the equipment serves both the digital mapping program and other mapping programs such as orthophotoquad production. This dual use equipment represents an overall investment of about $12,000,000.

Question. What equipment will you need in FY 1982 and succeeding years in order to run the program you propose?

Answer. GS will need to add to our basic equipment inventory in FY 1982 and thereafter to increase digital cartographic production. This new equipment will include instrumentation to digitize data from existing maps and aerial photographs and to edit digital data. Beginning in the mid-1980's, GS will need to acquire mass data storage equipment and software to process digital data in various modes necessary for operation of the digital data base.

Question. What is the current extent or coverage of digital maps?

Answer. Our current coverage of Digital Elevation Models (DEM) includes about 5000 7.5-minute quadrangles of which 700 were produced under the Digital Mapping Program and the remainder were a by product of orthophotoquad production. Coverage of Digital Line Graphs (DLG) includes about 2,800 7.5-minute quadrangles with land net and boundary categories digitized and 100 7.5-minute quadrangles with all categories (land net, boundary, transportation, and hydgrography).

Question. The cost of your primary quadrangle mapping program (GS-36) is estimated at $400 a mile in fiscal year 1982.

- What was the cost per mile in fiscal year 1980?

Answer. The given figure of $400 was the direct program cost for primary quadrangle mapping for FY 1980. An annual increase of 10 percent would be logical based on constant man-hour productivity, a pay raise of less than 10 percent, and a general inflation rate greater than 10 percent.

Question. At your current rate of mapping, when would you expect to have the entire country completed?

Answer. It is estimated that complete coverage will be attained in either published map copy or in the form of advance manuscript copy by about 1989. Complete published coverage should be achieved by the early 1990's.

Question. How much of the $6 million for modernization of mapping technology (GS-34-37) is for mapping equipment and how much is for the inventory control and distribution system?

Answer. Of the total funding for modernization, $500,000, is for the modernization of the inventory control and distribution system.

Question. When will the inventory system be fully operational? How long will the budget reduction delay implementation?

Answer. Under continued funding at $500,000, the system would be operational in FY 1983. With funding for this activity reduced to $200,000 in FY 1982 and beyond, full implementation of the system would be delayed until about FY 1987.

Question. What is the total investment that the Survey has in mapping equipment?

Answer. The original acquisition cost of the controlled equipment in the National Mapping Division Inventory is about $27,000,000. The replacement cost for this equipment would be severalfold this original acquisition amount.

Question. What effect will the budget reduction have on your modernization program? Will the reduction affect production of maps?

Answer. The modernization effort will be delayed in areas supporting the development of a high resolution camera which has the potential of eliminating some of the need for lower altitude photography, the digital cartography program by deferring the replacement of some present equipment with equipment capable of digital output, software development needed for advanced spatial data handling, and software development for the map inventory control and distribution system.

In the near term, the production of maps will not be affected. The long-range impact will slow the improvements in efficiency in the production process. For example, the high resolution camera would enhance most components of the National Mapping Program by improving basic source data. Other agencies would gain similar benefits from the camera.

Question. In your mapping revision program (GS-39) there is a considerable disparity between the cost of photorevision and complete revision.

- How do you decide which type of revision is necessary?

Answer. Quadrangles are selected for photoinspection based on anticipated need for revision, specific request, and State cooperative commitments. The GS photoinspection criteria identifies whether the amount of change in map content is sufficient to justify revision. The following factors are considered when determining the desirable type of revision: cartographic materials, amount of cultural change, contour interval, and accuracy.

About 90 percent of the revision program is photorevision, in which maps are updated from new aerial photographs, without field verification. Complete revision is, in effect, making new maps to replace existing substandard maps, some of which were mapped over 30 years ago when modern mapping methods were not available. Complete revision is also used in urban areas, after several photorevisions, where new subdivisions, highways, and other cultural changes have completely altered the topographic character of the map.

Question. You are requesting a $955,000 supplemental in fiscal year 1981 for orthophotoquad work in Alaska to support BLM needs under the Alaska Lands Act. You also request an additional $845,000 above this amount in FY 1982 (GS-41). Those amounts would provide, by the end of 1982, an annual rate of 360 photoquads per year for this purpose.

- How many years will this activity be required?

Answer. About 2900 orthophotoquads at 1:63,360-scale would cover Alaska. BLM's requirements for standard orthophotoquads in Alaska are about 2500, which can be met in 7 years with continuation of the requested FY 1981 and FY 1982 increases.

- At what levels will it be required?

Answer. Future years production would be maintained at about the FY 1982 level.

- Of your total budget in this area, how much is for Alaska versus other areas of the United States?

Answer. Of the total FY 1982 orthophotoquad budget of $6.5 million, $1.8 million is for the Alaska orthophotoquad program. The remaining $4.7 million supports the orthophotoquad program in the other 49 States.

Question. How much local support is there for your land use and land cover mapping activity (GS-47)?

Answer. The initial requirements by Federal agencies for land use and land cover data were in support of resource management activities. Since the program began, many States, regional, county and municipal planning agencies have expressed interest in this activity and many have suggested additional land use and land cover projects, to meet their specific requirements, for USGS consideration. To date, 14 States and several local governments have entered into cost-sharing agreements for the production of land use and land cover maps and data.

Question. On pages GS-47 and 48 you list five activities in which you are involved in this area. What is the relative level of effort of each?

Answer. (Dollars in thousands)

1	Land use and land cover map and data production	$1,844
2	Statistical data production	980
3	Experimental and demonstration land use and land cover map and data production	145
4	Geographic publication activities	540
5	Technical assistance	110

Question. How is your overall level of effort in this activity determined?

Answer. The overall level of effort in these activities was developed in order to have complete coverage of the lower 48 States by FY 1985 to assist legislators, planners, and State and local governmental officials to determine better land use policy, to project transportation and utility demand, to identify future development pressure points, and to implement effective programs for regional development. Yearly levels of effort are determined from Federal requirements and from State cooperators' requirements.

Question. You are requesting a FY 1981 supplemental for special maps for Alaska, again made necessary by the Alaska Lands Act.

- Please explain why such maps are necessary.

Answer. The 1:250,000-scale maps are the basic small-scale map series for Alaska. They are especially valuable to those agencies responsible for administration and management of the many new and/or expanded areas of the National Park System, National Wildlife Refuge System, National Conservation Areas, National Recreation Areas, National Forest System, National Wild and Scenic Rivers System, and National Wilderness Preservation System, all of which resulted from the Alaska National Interest Lands Conservation Act.

Question. Is this an annual requirement?

Answer. This will be a continuing program until all Alaska 1:250,000-scale quadrangles have been revised, and then the program will continue but at a reduced level to insure maintenance of these maps.

Question. Your FY 1982 justification (GS-50) states that 30 Alaskan maps "are revised annually" to support National Park Service and Fish and Wildlife Service. Why is there a need for annual revision?

Answer. 30 geographically different maps will be revised each year, and in about 5 years, all 153 of the Alaska 1:250,000-scale maps will be revised. Thereafter, a continuing revision program will be maintained at a reduced level.

Question. On an overall basis, how much of your effort in this program is geared to Alaska versus being aimed toward other parts of the United States?

Answer. The $900 thousand supplemental appropriation for FY 1981 will allow us to update about 30 geographically different Alaska 1:250,000-scale maps each year. We expect to spend about $1 million to revise an additional 30 maps each year in the remaining States.

Question. Your justifications (GS-53) list National Atlas Map activity as part of your special mapping activity.

- What work are you doing on the National Atlas?

Answer. The GS has been planning increased activity for the National Atlas program. The program will take advantage of the computer-assisted capabilities of the Geological Survey to create an automated information system for small-scale special subject data. The use of automated techniques will permit multiple use of the national overview data assembled for the National Atlas.

System data base content will include data assembled for the National Atlas such as physical features, public lands, agriculture, forestry, fishing, mining, manufacturing, construction, climate, coastal hazards, transportation and communications, etc. The initial emphasis of data acquisition will be on nationally significant data produced by earth science, environmental and resource programs.

Question. Is it your intent to produce a second edition of the Atlas?

Answer. Yes. The second edition would be produced on a continuing basis using a looseleaf approach as funds become available. The looseleaf format is compatible with information system concepts and procedures and permits flexibility in planning and scheduling the production of map sheets, prompt distribution of completed sheets, and timely revision of existing sheets.

The basic content of the second edition will approximate 200 map sheets, each 19 x 29 inches, printed on both sides in color. This will double the content of the 1970 edition.

The overall design of maps and map sheets will be similar to the 1970 edition.

Question. How out of date is the current edition?

Answer. The 1970 edition has not been reprinted because an estimated 80 percent of the maps are now out of date.

Question. What is the overall usefulness of the Atlas?

Answer. Federal agencies, primary users of synoptic information, need atlas maps, data, and other products to support planning, analysis, and reporting results. The Legislative Branch has been a primary user of National Atlas maps to support Congressional Research Service studies and Senate and House Committee deliberations.

Public and private libraries need up-to-date primary reference material. Without a central reference of information about the country, users are required to search elsewhere for the information usually without satisfactory results. For example, U.S. embassies and information centers abroad need official reference materials describing the character of the United States. Educators and students require single source documents presenting accurate summaries of the Nation's principal characteristics for teaching and learning.

The National Atlas serves as a source for authoritative special subject maps to be contained in commerical atlases, textbooks, and other similar publications and as a central reference for industrial planning and business forecasting.

Question. How much would it cost over what period of time to produce an Atlas?

Answer. It will cost about $8.0 million over a 6-year period to assemble the data and produce the 200 sheets containing the basic content for the second edition. The program should continue beyond the 6th year to produce selected new sheets and revise existing products.

Question. How much of that cost could be recovered through sales?

Answer. Sales of National Atlas map sheets are projected to increase to about $300,000-$400,000 per year when the second edition is completed. It is estimated that about one-third of the cost of the second edition could be recovered from sales.

Question. What do other countries do in this area?

Answer. Virtually all of the major nations and many Third World countries have produced national atlases or have programs underway for production or revision. Nearly all programs are funded by the National governments as a service to the country. There is a strong movement by many nations to apply

automated procedures to gain multiple-use benefit from the National Atlas data base.

Question. You are requesting a $500,000 increase in your Cartographic and Geographic Information activity to increase data collection activities.

- o Please explain what additional data would be collected and of what use it will be.

Answer. A program of acquiring information on locally held cartographic and geographic products through the 27 State Affiliates would be started. A pilot effort with the Texas Affiliate to acquire locally held data made significant additions to the Aerial Photo Summary Record System and the Cartographic Catalog. Much of the locally held information will have utility to Federal programs involving these areas and will consolidate State and Federal information for local users.

The second area of expansion will be the additon of selected map and chart information from map libraries throughout the country. Selected maps will be microfilmed and a computer description of each map will be encoded into the Map and Charting Information System. The information will get wide distribution for public use through the State Affiliates Offices.

A third area of expansion is to increase the acquisition of aerial photographs for entry into the EROS Data Center aerial photography film library. By funding this type of activity, the Geological Survey makes valuable data accessible to the public.

GEOLOGIC AND MINERAL SURVEYS

Question. Please provide some detailed breakout of the appropriations request for earthquake hazards reduction (GS-60) by the basic activities.

Answer. The appropriation requested for earthquake hazards reduction is principally divided among four main program elements.

Earthquake Hazards and Risk-delineation and evaluation of earthquake hazards on a national and regional scale with emphasis on urban areas with high seismic risk, and estimation of ground motion values and the effects of ground motion on structures.	$11,500
Earthquake Prediction - conduct research toward the reliable prediction of the time, place, and magnitude of major earthquakes and toward an understanding of the geologic principles involved.	16,499
Data and Information - acquisition and distribution of seismic data to the research community and the dissemination of data on earthquake occurrence to local, State, and Federal agencies and to the public. This program includes Earthquake Hazards Warning activities and operation of global seismograph networks.	3,864

Induced Seismicity - determine physical mechanisms responsible for earthquakes induced by the acts of man and establish risk mitigation procedures where induced seismicity is likely to occur.	1,223
Total Requests	$33,086

These amounts do not reflect earthquake hazards reduction's share of pending paycost supplemental or curtailment to activities that will result from currently undistributed travel, equipment, and personnel cost reductions contained in the negative amendment.

Question. What progress do you believe you have made toward earthquake prediction since the program has been instituted on a large scale?

Answer. Significant progress toward earthquake prediction has been made in many research areas and several of the more important advancements are summarized below.

Seismic "gap" hypothesis well established. Recurrence intervals for great earthquakes along crustal plate boundaries can be calculated given information on historical seismicity on a given segment of the plate boundary. This is, in fact, a long-term forecasting technique for the next major earthquake on a fault segment. Although the time of this event can be estimated only approximately, the data can be used to focus research efforts on areas of high earthquake potential as well as to begin taking appropriate mitigation steps in the area.

Regional strain variations associated with increased seismicity. In southern California, rapid variations in crustal strain during 1979-1980 have been observed using accurate surveying techniques. The rate at which strain accumulates appears to be highly linear even in regions as large as southern California. Nevertheless sudden widespread pulses may occur; for example, a rapid change in strain accumulation occurred in 1979. At the same time southern California had experienced a striking increase in seismicity. Such regional strain variations and seismicity increases have preceded large earthquakes in other parts of the world and may indicate that the seismic "gap" that exists in southern California may be filled by a major earthquake within a few years.

Fault zones show slow instabilities before the large dislocations of a major earthquake. Slow fault slip precedes some, if not all, major earthquakes by a few hours or days. This feature has been observed directly in laboratory experiments on small rock samples and in the field. If this phenomenon is characteristic of faults that are about to break, it may provide the key to short-term earthquake prediction at a specific locality on an active fault. The FY 1982 funding increase will be used for fault monitoring in an attempt to detect such fault slip. Associated strain and tilt near the fault zone, minute displacement across the fault zone, and geochemical, hydrologic, and magnetic variations may also be observable before the fault breaks in a major earthquake.

Operating instrumentation network. Instrumentation networks for earthquake prediction research purposes have been established in central and southern California, Utah, Missouri, and other locations to monitor and observe the various phenomena discussed above.

Question. Your justification (GS-65 and 68) indicates that the likelihood of an earthquake on the San Andreas fault is very high.

- o Knowing this, what mitigating steps, if any can be taken to either minimize damage or reduce the probability of an earthquake?

Answer. The accumulation of tectonic strain that produces earthquakes in California results from the relative motion between the Pacific and North American plates. Although acts of man cannot significantly affect this process (as we cannot prevent a hurricane from forming), our ability to assess the severity of a great earthquake, its location, and time of occurrence enable many hazard mitigation steps to be taken. Some of these include:

I. Development of plans for coordinated disaster relief. Federal, State, and local agencies will have to deal with the requirements for medical care, search and rescue, emergency debris clearance, emergency food and water supplies, demolition of unsafe structures, and many other activities. An important part of this planning is for the impact on communications and transportation systems that will be vital to disaster relief efforts.

II. Development of public education programs for effective loss reduction measures in the home and work environment. Develop local capabilities for self-sufficiency of families and neighborhoods in the immediate aftermath of an earthquake.

III. Promote the evaluation of unsafe facilities, building code enforcement, and identification of vulnerable critical facilities where structural reinforcement is necessary.

The relative importance of these mitigation steps depends on our ability to estimate the time of the impending earthquake. If a major earthquake was expected in a period of days to weeks, steps I and II are clearly most important. When the earthquake expected in a region could occur anytime within a period of several years to perhaps several decades (such as in Southern California) all the steps are important until a shorter-term warning can be issued.

Question. How accurately can you predict earthquakes from induced seismicity effects of reservoirs?

- o Is this a significant problem?

The impact of seismicity induced by reservoir impoundment, or by fluid injection, is well documented. Examples are the threat to public safety caused by earthquakes induced by disposal of hazardous waste in a well at the Rocky Mountain Arsenal in Denver; by the magnitude 5.7 reservoir-induced earthquake that caused severe damage in Oroville, California; and by small reservoir-induced earthquakes at the site of a nuclear power plant in South Carolina. Intensive investigation of the causes of reservoir induced

seismicity suggests that the potential for predicting its occurrence is quite good provided there are sufficient observations and measurements. More important, however, progress in understanding reservoir-induced seismicity is leading to a much greater capability for assessing the degree of hazard represented by a sequence of induced earthquakes, as well as a better ability for designing hazard mitigation procedures, siting, and construction codes.

Question. Please explain the difference between the Global Digital Seismograph Network and the Worldwide Standardized Seismographic Network.

- o Why is it necessary to have two such networks in existence (GS-66)?

Answer. The Worldwide Standardized Seismograph Network (WWSSN) was established in the early 1960's to provide standardized seismic data for seismological research. The Global Digital Seismography Network (GDSN) consists of much fewer, but very sensitive, modern digital seismographs established for the specific purposes of the Advanced Research Projects Agency in discriminating underground nuclear tests. Thus, broad coverage of world-wide seismic activity is provided by WWSSN and supplemented by the high quality data of GDSN at selected sites. The networks, therefore, are complimentary and not at all duplicative.

Question. On page GS-66 you describe research activity carried out on the internal structure of the earth. This research is located in a data and information services line.

- o Please explain why this is the case.

Answer. Knowledge of the internal structure of the earth is needed to locate and compute the magnitude and depth of distant earthquakes. Thus, in order for the National Earthquake Information Service to accurately locate and evaluate world-wide earthquakes, research on earth structure must be carried out as part of the Data and Information Services program. This research is specifically directed toward the goal of precise determination of the parameters of world-wide earthquakes and rapid dissemination of this information.

Question. Your justification for ground failure and construction hazards (GS-76) indicates that this program is a principal source of expertise to implement provisions of the Disaster Relief Act of 1974 concerning landslides, mudslides, and other ground failure hazards.

- o Please explain what those provisions are and what this program does to implement them.

Answer. The Federal Disaster Relief Act of 1974--Public Law 93-288 (88 Stat. 143), Section 202(a) states that "The President shall insure that all appropriate Federal agencies are prepared to issue warnings of disasters to State and local officials." In addition, Section 202(b) states that "The President shall direct appropriate Federal agencies to provide technical assistance to insure that timely and effective disaster warning is provided." The specific disasters included are "hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire explosion, or other catastrophes..." Subsequent redelegation of authority (described

in the Federal Register, April 12, 1977, pp. 19292-19296), identifies the Geological Survey with the responsibility for notifying appropriate Federal, State, and local authorities concerning geologic-related hazards (specifically: "earthquakes, volcanic eruption, landslide, mudslide, subsidence, or other geologic catastrophes), and for providing information as necessary to ensure that timely and effective warning of potential disaster is provided.

The activities of the Ground Failure and Construction Hazards program include research for more rapid and comprehensive assessments of the distribution mechanisms, and potential proximal causes of landslides, mudslides, subsidence, and related geologic processes having a significant potential for hazard. An important element of this program is an Information Exchange project which will collate, assess, and dispense information relevant to ground failures to State and local governmental agencies, nationwide information with distribution, causes, remedial measures (engineering practices) taken, and success of such to date will be included. This will allow States that have only begun to address the ground failure problem to benefit from the experience of those States which have had some success in dealing with them. Information Exchange activities will begin in FY 1982 with a focus on landslides and mudslides, and will later be expanded to include subsidence, swelling clay shales, and rock deformation hazards.

Another important aspect of the program is research leading to ground failure prediction. Development of successful predictive techniques will allow State and local governmental agencies and planners to intelligently deal with ground failure problems attendant to urban-suburban growth.

Question. How are the areas for study chosen?

- Do you receive any local support for your activity in these areas?
- You are asking for a million dollar increase in this program. Please explain what you will do for the increase in funds.
- Would you expect to get increased support from localities in this work?

Answer. Of many urban growth areas where information on landslide incidence and susceptibility are needed for planning and preliminary engineering design, major factors affecting selection are: (a) State or local agencies having demonstrated interest in the application of research, (b) sufficient basic geologic data are already available to provide a solid context for focus on landslide hazards research, and (c) a receptive planning group which will utilize the information.

Transportation corridors for commerce and for development of energy and mineral resources are particularly sensitive to ground failure hazards. Study areas will be chosen with consideration for needs identified by Conservation Division and other Federal agencies.

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Specific landslides offer opportunities for research on engineering parameters and mechanisms of failure, displacement, and deposition.

In addition to the activities described in answer to the foregoing question, the increase is intended to initiate a coordinated research effort on landslides and mudslides. Studies of processes will include development and testing of specific predictive models. Regional assessments will be aimed at development of probabilistic models for the distribution of relative risk.

Local support is received in some areas. Increased State and local support is expected to take the form of cooperative funding on a 50-50 basis. California and Kentucky State agencies have already presented long-range plans and legislative proposals to their respective legislatures.

Question. With regard to this type of hazards analysis, what level will it ultimately reach in terms of annual funding compared to volcano and earthquake work? Your justifications for the increase on page GS-78 state that you will establish a coordinated program for swelling clay hazards mitigation.

- o Please explain those hazards and how you would mitigate them.

On page GS-80 you state the same for landslide hazards.

- o How would you mitigate them?

Answer. The optimum sustained level of funding for the program is probably $7-10M. State involvement will ultimately far exceed Federal. The sustained level of effort should produce research leading to major reductions in projected losses within 10-15 years of first attaining the optimum funding level (it is estimated that 80-90% of the expected increases in losses can eventually be avoided).

Swelling clay-shales are commonly classed as "bedrock" for engineering purposes. Yet they have the capability to swell with the addition of water and to shrink when subsequently dried. When shrinking and swelling take place differentially, such as swelling under the sides of a house during wet weather while the center remains dry, the foundations are stressed and the distortion can severely damage the building. Mitigation involves: 1) Recognition, identification, and delineation of areas susceptible to this process; including the identification of the particular kind of clay mineralogy that is most likely to give rise to shrink/swell problems; and 2) Design and construction of foundations that avoid areas of swelling clay shales or accommodate for their presence by special techniques involving drainage or other protection of the soil beneath the foundations from severe changes in moisture content.

Mitigation of landslide hazards involves a multiplicity of tools, ranging from land-use planning to avoid or minimize exposure, to a number of engineering techniques for stabilizing slopes that have a potential for failure or for defensive works to protect buildings from impact and lateral stress. These tools have been described in a general way by W. J. Kockelman of the Geological Survey in Open-file report no. 80-487, 1980.

Question. Do you receive any funding for your Reactor Hazards Research Program from the Nuclear Regulatory Commission (NRC)?

Answer. We receive funding for research from the NRC (FY 1981 - $1,200k). These funds support eight research projects ranging from earthquake studies to volcanic hazards. In March 1981, results of our research of the source mechanism of the 1886 earthquake near Charleston, South Carolina, were used in the licensing proceedings of the Summer, South Carolina, nuclear power plant. The Geological Survey's position regarding this earthquake in relation to nuclear power plant siting was stated in a letter to the NRC and by oral testimony before the Advisory Committee for Reactor Safeguards.

Our NRC funded research in Volcanic Hazards is being used to estimate ash accumulations as part of the assessment of geologic hazards which could affect power plants so that the NRC will have an adequate basis for licensing decisions for thos plants nearing completion at Hanford, Washington.

Question. Your justificatons (GS-81) state that the information is directly applicable to siting of other major installations, such as coal or oil shale fuel plants, etc.

- In what manner do you provide the information to people making siting decisions for these facilities?

Answer. Regional studies of active tectonic structures, seismicity, subsidence and volcanism have been and are being used as a basis for decision making of energy related facilities, for example:

1. Auburn Dam, California - the USGS participated in the formal review of the geologic and seismologic reports for the proposed dam.

2. LNG Site, Point Conception, California - our research in geologic age dating, tectonics and marine terraces provides the essential basis for licensing decisions now in progress for that facility.

Information is made available through technical meetings, publications and informal reports, review statements, and direct testimony at proceedings.

Question. You say you will accelerate the completion of a national magnetic anomaly map (GS-90).

- Plese explain the significance of the map and when it will be completed under the assumptions of both budgets.

- What short term negative effects would there be if its completion is delayed?

Answer. The primary significance of a national magnetic anomaly map is its direct contribution to national programs in resource assessment and geologic hazards studies. Such a map provides valuable informaton on both local and regional geology, and contributes to an understanding of the structure and nature of the crust and its evolutionary processes. Through its acknowledged utility for delineating both surface and subsurface geologic

structure, aeromagnetic mapping provides information of use in regional petroleum investigations, mineral exploration, nuclear fuel and geothermal energy assessment, earthquake and volcano hazard evaluation, and ground water studies. As an illustrative example from the minerals area alone, aeromagnetic surveys have for years provided direct subsurface indication of the presence of some ore bodies, information on the favorable settings of others, and has allowed the subsurface mapping of major formations, such as greenstones (with which certain ores are associated) into areas where they are hidden beneath the overburden of soils and younger rock units.

The United States, which developed the airborne magnetometer at the close of World War II, remains the only major nation in the world that does not presently have a magnetic map of the country, despite repeated recommendations over the years by the National Academy of Sciences, the mining industry, the Society of Exploration Geophysicists, and industrial-academic workshops on the future of mining geophysics in the United States.

Under the proposed budget the aeromagnetic map will not be published until fiscal year 1985. As originally proposed the map would have been published in FY 1983. Completion of the map at the reduced level will require the Survey to stretch out the acquisition of data in areas currently unmapped or mapped at a density inadequate to define the host lithologies of ore deposits and geologic structures of potential resource or hazard significance.

The foremost impact on delaying completion of this map will be to postpone th availability of a needed exploration tool vital to mission programs of the USGS, the mining industry, and universities.

Question. The Survey has a $1 million Climate Change Program.

- o What is the total scope of the national program and who else is involved?

- o Please explain how the work you will be doing will tie into the overall program.

Answer. The U.S. program in climate research has as its goal to aid effectively the Nation in its response to climate-induced changes, their domestic and international aspects, and to identify man's impact and influence on climate change. The National Climate Program (NCP) is administered in National Oceanic and Atmospheric Administration (NOAA); the National Climate Program Office's (NCPO) whose primarily role is to prepare annual reports and 5-year plans, advise Office of Management and Budget (OMB) on program priorities, and generally coordinate Federal Climate Program money. NCPO provided a 5-year plan, approved by President Carter on November 13, 1980, describing its activities and principal thrusts. Included is the annual $1 million USGS program out of a three-year total of about $140 million for FY 1979, 1980, and 1981. The NCP includes programs in Commerce, Interior, Agriculture, Transportation, Defense, and Energy Departments, NASA, and the National Science Foundation (NSF). The scope of these programs includes research and monitoring in meteorology, oceanography, atmospheric sciences, geology, paleontology, carbon dioxide, agriculture, hydrology, glaciology, and solar studies with the goal of using these data for prediction, impact assessment, information services and diagnoses.

The USGS plays a unique role in the NCP as the Nation's premier geological research organization. Specifically, the role of the USGS in the NCP is to determine past climatic variation and attempt to determine the natural precursors to climatic change which can be used to predict future changes and their effect on the Nation's land and water resources by using paleontologic, geochemical, geomorphic, radiometric, glaciologic, and other earth science data to determine rates and magnitudes of paleoclimatic changes. It is impossible to predict future climate change and its effect on our land and water unless we understand the causes and trends of climate fluctuations which can only be accomplished through paleoclimate study. Climatic modelers who attempt to predict future trends require these empirical, physical, and chemical data to erect, verify and improve their theoretical models and predictive capabilities. Benefits from full implementation of the USGS Climate Program include improvements in our capabilities for prediction and management of agricultural belts and food production, flood hazards, coastal zone hazards and sea level changes, water and air temperature, wind erosion, hurricanes, glacier hazards, and water supplies.

Significant results of the USGS Climate Program which are summarized below meet program goals by providing data on history of past climatic variation and on the causes of climatic change (i.e., astronomical parameters rather than volcanic activity), by determining impacts of climatic change on sea level and U.S. coastal zones, by determining the effects of the last major climatic warming on vegetation in the mid continent, by developing isotopic techniques to determine paleotemperature trends in Western United States over the past several thousand years, and by developing a paleontologic technique (chrysomonad cysts) which serve as a monitor of pH changes in lakes resulting from acid precipitation.

Question. On pages GS-93 and 94 you explain several significant results.

- Please review them and indicate what the significance of these results is on an overall basis.

Answer.

- Searles Lake Cores provides a record which indicates that continental and oceanic climatic records are in phase for the past 125,000 years. Prior to that time, they could not be correlated with climatic events indicated in deep sea cores.

- Modern geochemical and paleontologic techniques of dating marine deposits and of determining paleotemperatures from the flora and fauna of the marine deposits support the theory of astronomical causes of climate change.

- Although volcanism has been cited as a direct cause of climate change, studies of several thousand oceanic cores indicate no correlation between included volcanic material and higher or lower temperatures. The study did not, however, disprove the possibility of volcanism as a causitive factor because the studied intervals of volcanic activity may not have been sufficiently intense or prolonged to create climate change.

- The 11,000 year varved lacustrine sediment record from a Minnesota lake yields a year-by-year record of climatic and vegetation change.

- Chrysomonad cysts, previously largely unrecognized as a paleoclimatic tool have been found to be widespread in Pleistocene to recent lake sediments. They have potential for determining paleo pH and thus a potential for determining trends in lake acidity required for acid precipitation studies.

- Isotopic variation in stalagtite records mean annual temperature variation through time and are being used to determine Pleistocene paleotemperatures in the Western United States. Most other paleotemperature indicators record elements of annual temperature variation rather than the more useful mean annual temperature.

Question. Please explain the need for the large acceleration in the Alaska mineral resources surveys requested in both a fiscal year 1981 supplemental of $3.6 million, and an increase above that, in 1982, of $1 million.

- With this acceleration, how many quadrangles will be completed and when will your overall survey of Alaska be done?

- Without the acceleration, when would the survey be done?

Answer. The acceleration in the Alaska Mineral Resources Surveys is in response to provisions of the recently enacted Alaska Lands Act, (Section 10.10 and 10.11), which requires the USGS to accelerate its mineral and energy appraisals of Alaska. Without an acceleration, the appraisal of 100 Alaska mineralized quadrangles, would have been completed after the year 2020. With the increase the appraisal is targeted for completion in the year 2000. Completion of the assessment in 20 years rather than 40 years was determined by DOI to be a realistic target to meet the legislative intent of the act.

Question. How does your overall level of effort in Alaska compare to that in the United States?

Answer. At base funding levels, the overall level of effort in mineral resource assessment in Alaska is lower than that in the Conterminous U.S. in terms of staffing and funding. The difference in the levels of effort is demonstrated by the fact that the Alaskan program has four quadrangles in the fieldwork stage at the present time, whereas the Conterminous U.S. program has six quadrangles in the fieldwork stage. Likewise, there are five quadrangles in the compilation stage in Alaska (fieldwork completed) and six quadgrangles in the compilation stage in the Conterminous U.S. program. Both programs are now inadequately funded, however, in respect to meeting the stated long term goal of providing an assessment of the mineralized areas of the U.S. which contain Federal lands by the year 2000. The requested FY 1981 and 1982 increases for the Alaska Program will bring the program up to the funding level needed to meet the long term goal.

Question. On the schedule you have for the Conterminous United States, how long will it be until mineral surveys are completed in those areas with significant mineral potential?

Answer. The original long-term goal of the Conterminous U.S. Mineral Resource Assessment program was to assess the mineral resource potential of the 125 $1^{\circ} \times 2^{\circ}$ quadrangles which contain both significant mineral potential and Federal lands by the year 2000. Because the present level of funding is inadequate, however, the mineral resource assessment of the 125 quadrangles will not be completed until at least 2030--and possibly later. To meet the long term goal of the Conterminous U.S. Program, funding increases similar to those requested for the Alaska program are required.

Question. Will the required wilderness review of the Alaska lands contained in the Alaska Lands Act be performed under the Alaska mineral surveys or under your normal wilderness mineral survey activity?

Answer. The wilderness review of the area north of 68 degrees latitude and between the NPRA and the Wildlife Refuge will be performed under the Alaska mineral surveys.

- With the anticipated funding from the supplemental and fiscal year 1982 budget request, will you be able to complete your wilderness studies within the eight years as required by the Alaska Lands Act?

Answer. The requested funding increases will make possible the compilation of these wilderness studies within the required eight year period.

Question. Of the $4.7 million for resource informaton and analysis, how much is for computer and information systems, and how much is for other types of studies?

Answer. Approximately $2.0 million is devoted to mineral information systems based on computer applications, 2/3 of this in the CRIB system. An additional $0.2 million is for research in application of computer technology to mineral resource problems. Thus, the total for computer application is about $2.2 million and about $2.5 million for other activities, principally the geologic study mineral commodities (with emphasis on strategic and critical commodities.)

Question. Is there any connection between your Computerized Resource Information Bank (CRIB) and any Bureau of Mines systems, such as their minerals information system?

Answer. Aside from files in process of preparation, CRIB represents an open system emphasizing the geological aspects of resources and it is accessible, (via General Electric and the University of Oklahoma) to any potential user. On the other hand, MAS emphasizes reserves and includes proprietary information and thus must remain a closed system to preserve the confidential information. Without the guarantee of secrecy, industry would be reluctant to transmit confidential data such as ore reserves or production to the Bureau of Mines. Even the Survey's commodity specialists do not have direct access to MAS.

Question. You originally requested a 40% increase in your development of assessment techniques activity (GS 104). The increase is now $1 million instead of $4.5 million.

- Please explain the activities you will undertake in this area and why it is of importance to increase this activity. What won't you do now that the budget is lower?

Answer. The principal thrust will be the formulation, development, and testing of mineral occurrence models. A small expenditure will be designated as "seed money" to explore the possible options for a cooperative among Government, industry, and universities. Mineral occurrence models are an essential next step in improving and accelerating GS resource assessments of public lands. Such models provide an explicit set of criteria--agreed upon by experts--that assist in the recognition of concealed or incompletely exposed deposits of base, precious, and strategic metals. When occurrence models are coupled with grade and tonnage models, general estimates of metal amounts can be developed.

The cutback in the increase has caused us to postpone part of the mineral occurrence model effort, to omit the systematic acquisition of grade/tonnage data for ore deposits, to omit expansion of the development and testing of advanced exploration techniques, and to omit plans to support ongoing research through scientific drilling.

Question. How does this relate to increased activity in the geological framework area?

Answer. All programs which lead to a better understanding of the earth also lead to a better ability to find resources. The Geologic Framework program seeks to understand the major geologic features of the earth's crust and the processes that influence their behavior. The increased activity in deep crustal structure and properties of the Framework program will reveal new geologic terranes and may well identify promising areas for more specific mineral resource investigations in the northeastern and southwestern areas of the United States.

Question. Are there any short-term benefits to increasing your work in the minerals assessment area?

Answer. Within two years, the length of time it will take to develop a minimum set of models, there will be a basis for improved resource assessments in proposed wilderness areas and other public lands cast in terms of exploration models such as industry uses to identify exploration targets.

Question. How much of this work would be inhouse versus being done in universities or industry? What kind of research centers would you set up? Where?

Answer. Under the presently anticipated $1 million increase no research centers are anticipated, inhouse or outside. However, the need remains for more effective use in evaluation of resources of the considerable scientific and technical talent in universities and industry. Thus, we propose to initiate discussions with industry, universities, and other Government agencies, (especially our sister Interior Bureaus, State Geological Surveys, the NSF, and others) regarding an effective cooperative program for the future.

Question. What kind of minerals or mineral occurrences would you concentrate on at the beginning?

Answer. Because of our in-house need, we shall approach many model types simultaneously; this is not as difficult as it seems because we have many persons who will contribute. Several bases for priorities exist, and we must deal with them all: (1) Strategic materials receive highest rank, including Co, Mn, Cr, Ti, Al, Cb, Ta, Ni, and Pt. (2) Major deposit types for which we know that we have some world-class deposits and want to preclude missing additional ones; these include Mississippi Valley lead/zinc deposits, porphyry copper deposits, porphyry molybdenum deposits, Carlin-type gold deposits, phosphate deposits, kuroko-type massive sulfides, Cyprus-type massive sulfide deposits, sandstone uranium deposits, Bushveld-type Cr, Pt, Co, Ni, V, Cu deposits, and many others. Each of these listed may have several variants. (3) Deposits for commodities having very active current industrial interest, such as those of gold and silver.

Question. How would the new work differ from the work in the base program?

Answer. The base program includes diverse types of metallogenic studies and support activities essential to land resource evaluations in progress. The development of models that will be accomplished under the incremental program element prepares a rigorous basis for a new generation of more rapid and replicable resource assessments two years hence.

Question. Please explain the relationship that your Coal Investigations Program (GS-106-110) has to the BLM Coal Leasing Program.

Answer. The BLM coal leasing program involves a two-stage process: Inventory/Land-use Planning (which preceeds tract selection) and Coal Activity Planning. The coal investigations program provides coal geology, stratigraphic, and coal resources data (quantity and quality) for the land-use planning through the regional, 1:100,000-scale coal folio program. Beginning in FY 1980 this coal folio program was accelerated to begin to meet BLM's data needs at the land-use planning stage of the leasing process.

Question. What specific types of information do you provide the program?

Answer. The Coal Investigations Program provides various maps and reports such as coal-bed thickness maps, coal-bed correlation networks, drill-hole data, coal geology maps, and coal quality reports which are important in the land-use planning stage for multiple land-use decisions. These reports provide the necessary information for the preparation of coal development potential maps which are used by BLM to delineate areas having low, medium, and high development potential.

Question. Why is there a need for a $3 million increase in fiscal year 1982 for the program?

Answer. The Federal Coal Management Program mandated considerable restructuring of the Survey's coal programs. The Geological Survey and BLM, in conjunction with the Department of the Interior's Office of Coal Coordination, have examined the needs of BLM for land-use planning in advance of detailed tract selection and tract evaluation leading to a sale. A request by the Geological Survey for expansion of its Coal Resources Program is a result of these mutual investigations. The requested increase

will provide additional funding for Geological Survey to initiate fifteen more 1:100,000-scale coal resource appraisals in order to complete them on a six-year cycle in BLM's first priority areas and to meet the deadlines required by BLM in their land-use planning cycle in advance of their decision to initiate coal leasing. Data gathered will be formated, stored, and retrievable from the Coal Resource Data System (NCRDS) and the system will be brought to full responsive level as defined in the Coal Data Task Force Report.

Question. What is the relative effort involved in your coal resource program versus the environmental program?

Answer. The coal resources and environmental program are the two complementing components of USGS's coal folio program. These two subprograms plan to carry out investigations on the approximately 100 high priority 1:100,000-scale quadrangles identified by BLM as important for land-use planning and coal leasing activities. The coal resources subprogram characterizes the resources base; the environmental subprogram characterizes the physical geologic environment of resource-related rocks. The relative efforts of these two programs for FY 1981 and FY 1982 are given below:

	FY 81	FY 82	(planned)
Coal Resources	$6,155K	$9,485K	(+$3,000K)
Coal Environmental	$5,622K	$5,924K	

Question. Do you put out a separate set of maps for each program or is your mapping a combination of the two?

Answer. All maps produced by these separate subprograms are combined into a coal folio format for each 1:100,000-scale area. As such, there are maps displaying coal geology, the 4 to 6 principal coal beds in the area, coal-bed correlation networks, coal resources tables depicting quality and quantity, engineering geology maps, hazard maps, and surficial geology maps. All are implemented through coordination efforts of mapping, drilling, and special activities.

Question. The GAO has issued a report critical of your coal resource occurrence coal development potential maps.

o How do these maps tie into your Coal Investigation Program?

Answer. The CRO/CDP mapping program has been terminated by USGS. The intent of these maps was to meet the land-use planning needs of BLM for the first leasing in FY 1981. This BLM land-use planning need has now been supplanted by the regional 1:100,000 coal folio program of the coal investigations program.

o What actions have you taken to increase the quality of these maps?

Answer. Existing maps are being reviewed and corrected and data contained on these maps are entered into a coal resources data system in order to ensure that information can be utilized by DOI Coal Management Program.

- Are the maps the same maps that you produce for the BLM leasing system?

Answer. The CRO/CDP maps, which were at 1:24,000-scale, are to be supplanted by the regional 1:100,000-scale mapping program for which the FY 1982 increase is requested.

Question. In your Onshore Oil and Gas Investigations Program (GS-111 and 112) your justifications refer to both offshore studies and foreign studies, as well as onshore oil and gas investigations.

- What really is the scope of this activity?
- How is it related to your world energy assessment program?
- How is it related to your offshore energy assessment program?
- Do other agencies provide additional funding for this activity?
- What have been the most significant results of this activity over the past few years?

Answer. The principal objective of the Onshore Oil and Gas Investigations Program is to provide assessments of the Nation's undiscovered recoverable oil and gas resources. However, the scope of the Program is a broad spectrum of oil and gas research activities that ranges from investigations on the origin of oil and gas to the various methodologies used in assessing how much oil and gas is left to be found. There is a group of scientistis within the Survey (the Resource Appraisal Group or RAG) who are experts in oil and gas appraisal techniques. Working with scientists in both the world energy assessment program and the offshore energy assessment program, they are responsible for making all undiscovered oil and gas assessments. The only outside funding for this activity comes from the Department of Energy (<$100 K) to support oil and gas appraisals of foreign areas. The Onshore Oil and Gas Investigations Program recently has generated several major publications on petroleum geology and resource appraisal for selected areas (e.g., NPRA and the William O. Douglas Wildlife Range) but certainly the most significant has been the 1981 update to the 1975 publication, Geological Survey Circular 725, Geological Estimates of Undiscovered Recoverable Oil and Gas Resources in the United States. This document has been a "best seller" for the USGS.

Question. With regard to world energy resource assessment, please explain what you are doing in Fiscal Year 1981 with the funds added by Congress.

Answer. Program objectives for FY 1981 are divided into two categories: 1) Regional investigations by country or major basin (80% of total budget), and 2) topical studies of particular significance to energy resource occurrence but not well reported in the literature (20% of total budget). The regional studies focus initially on some major petroleum occurrence areas of the world with the intent of developing a geologically based understanding, and hence predictive capability, of production and exploration potential of the principal petroleum energy areas. Regional areas of investigations in FY 1981 include, Trinidad, Venezuela, the Middle East countries, Indonesia, Malaysia, Mexico, USSR, and offshore producing fields of the world. It is the intention of this program to complete preliminary resource assessments in FY 1981 in all regional areas of investigations. Significant products of the regional assessment program are available for inspection or briefing.

The topical part of the program will operate in support of regional investigations by gaining critical insight (and projecting that into the regional studies) into two major oil occurrence factors that are as yet not well developed in the literature: 1) The occurrence and distribution through time of petroleum source rock, and 2) the positions of major continential units and the effect of those positions on geologic structure and depositional environments relative to the worldwide occurrence of petroleum and other minerals. Topical investigation are coordinated with the existing domestic activities.

- How will the activity that you do differ than that normally done by the CIA, State Department, or DOE?

Answer. CIA, State, and DOE, as well as DOD and other U.S. Government Departments, have no geologic analysis capability and rely entirely on GS for such work. Depending on the skills and interests of other Department entities, their work is commonly complementary in the areas of economic, political, other technical, or national security analysis of GS resource information.

- How do you coordinate with these agencies?

Answer. Coordination with other Department units is both formal and informal. A joint program under a MOU is carried out with DOE on Foregin Energy Supply Assessment (FESAP); State Department work is commonly on boundary issues taking the form of an administrative report, on request. CIA in the past has requested information on the geologic potential of certain areas which we have supplied in the normal course of our scientific publications. Certain of our scientists have full security clearances to enhance the coordination.

- If, as in your request, this would only be a 1-year program, why are you developing a computer data system and of what use would it be in the future years if you do not have funding?

Answer. The Survey is not developing a computer data system. We purchase on contract the computer system capability and have developed methods of manipulating and of distributing the data to the various workers in the program located in different geographic areas. Data purchases from an International Oil Scouting Service are on annual contract and amount to about 4% or $60,000 of the total budget.

Question. With regard to your oil shale investigations, how much work was done prior to the current prototype leasing program and relatively how much more work is necessary for another leasing program?

Answer. Geologic mapping with associated stratigraphic mineralogic, and resource assessment work by the Geologic Division began in the late 1940's well prior to establishment of an oil shale line-item budget sub-activity. A substantial expansion of the Division's activity in oil shale began in the late 1960's and continued, with minor interruption, through implementation of the first prototype leasing program. Since that time (1977), the oil shale subactivity has continued at a much reduced level.

Because of the Division's reduced oil shale effort over the past half decade, the acquisition of essential geologic data for the initiation and implementation of the permanent leasing program must be significantly accelerated. Additional effort will also be required for the site-specific second prototype program. Preparation for both the second round of prototype leasing and the permanenet leasing program requires quadrangle mapping, compilation of folios, and associated stratigraphic, mineralogic, and resource assessment studies, as well as core-drilling, laboratory support and environmental evaluation.

GS feels that the most useful and efficient support of a permanenet oil-shale leasing progrma is a regional folio format that delineates and quantifies the high-grade oil shales. This, coupled with site-specific studies as needed within the overall study area, offers the most cost-effective approach to satisfying the data requirements of both the second-round prototype leasing (by 1983) and the implementation of a permanent leasing system (by 1985) for those areas in Utah, Colorado, and Wyoming that have high-grade oil deposits.

- What is the schedule for a second round of prototype leasing and for a complete new leasing program?

At the time of the budget submission, the second round of prototype leasing was scheduled for late 1982 and for regular leasing by late 1983. However, the oil shale leasing program is under review by the Secretary at which time the current schedule will be confirmed or a new schedule will be developed.

- Is the collection of information basically for environmental purposes or for valuing the leases upon receipt of bids?

Answer. The oil shale resource investigations program is directed toward the collection and interpretation of both resource and environmental information that is viewed as a prerequisite for a successful leasing program. Both types of data are needed to determine if it is advantageous to offer specific tracts of oil shale land for leasing, to determine the environmental impact of leased tract development, and to assist in estimating a fair market value of the tracts for which bids are received.

Question. You are requesting a million dollar increase in your uranium/thorium investigations program

- What is the overall resource base in the country for uranium, that is, how many years supply of uranium do we have at currently economic prices?

Answer. At the current price of about $25 per pound, much of our 645,000-ton reserve (requiring up to $30 per pound in production costs not yet incurred) is not economic, for a number of reasons (sunk costs are not recoverable, the reserve has many owners, it is not of uniform grade, costs of exploitation are rising, etc.). By about 1985 or shortly thereafter, production in part must come from economically producible reserves that have not yet been delineated.

- Why is there a need to increase the level of activity in this area?

Answer. The level of activity in the search for additional reserves must be increased in order for the Nation to maintain an adequate reserves-to-production ratio. Already some U.S. companies are ceasing production because decreasing grade in their deposits makes it uneconomic to continue operating. The Geological Survey's Uranium/Thorium Program at this time should be bolstered. With the sharp reduction in DOE funding of Uranium resource assessment and associated research and exploration-technique development, it is all the more important for the Survey to maintain its program in these activities. To avoid waste and to aid the Uranium and other strategic minerals programs, scores of millions of dollars worth of largely unused data (aeroradiometric; geochemical, etc.) purchased by the National Uranium Resource Evaluation (NURE) Program should be analyzed and assimilated by the Survey into data systems for access by all.

Question. Your justifications (GS-229) state that you would resume research activities and investigations to identify world-class Uranium deposits in crystalline terrains which are being recessed in 1981 due to budget reduction.

- o Please explain the importance of such possible deposits.

Answer. Many of the recently discovered world-class deposits in foreign countries are large-tonnage deposits and, even more important, are high-grade making them highly profitable to mine. This can make it difficult for convential lower-grade deposits to compete. For the U.S. to be assured of an adquate and secure supply of Uranium, USGS research should continue toward development of exploration guides that will focus on domestic world-class deposits. Because several years of lead time are needed to find a deposit and develop a mine, a delay can be fatal to a large segment of the U.S. Uranium-mining industry.

- o Why are investigations in this area not more important than your investigations of more dilute areas in the country?

Answer. If investigations of world-class deposits can result in truly major discoveries, then such investigatons might be more important than continuing investigations. However, present investigations are approaching a culmination of many man-years of multidisciplinary effort on the development of working models to be applied both to exploration and to improved methods of resource assessment. For this reason, the present investigations on these "bread-and-butter" deposits of the U.S. should be continued until the results are clear.

- o What is the status of the National Uranium Resource Evaluation (NURE)?

Answer. The NURE Program has been greatly reduced since its October 1980 summary report was released. Individual quadrangle folios are being completed, some analytical work is still being done, and other projects are being completed. Little of the NURE Program is expected to remain after the end of FY 1981.

- o How much of your effort is involved in this activity?

Answer. Formally, our involvement in NURE amounts to about one-fourth of our effort. However, virtually the entire uranium/thorium effort is directly, indirectly, or ultimately related to the NURE goal of understanding and assessing nuclear fuels resources.

- How much of that effort is funded by the Department of Energy?

Answer. About 25 percent of the Survey's FY 1981 effort is funded by DOE.

Question. Your figure on page GS-121 shows involvement in site-specific exploration and selection of sites for geothermal programs.

- Please explain why you are involved in this activity with DOE and industry.

- What specific geothermal studies are you involved in in fiscal year 1981 and what are your plans for fiscal year 1982?

Answer. With regard to the "selection of sites" activity, the USGS is directly involved with DOE in two ways:

(a) The national inventories of the various types of geothermal resources prepared by the USGS and the technical expertise and advice of USGS geothermal resource specialists are employed by DOE to determine locations of their site-specific studies to confirm and evaluate reservoirs with the greatest potential for utilization.

(b) The inventories provide the fundamental resource information that is required by DOE to develop national goals and production estimates for utilization of geothermal resources.

With regard to the "site-specific surface exploration" activity, the USGS is directly involved with DOE by providing a great deal of the basic geological, geochemical, geophysical, and hydrological information that DOE used to formulate a strategy for a more detailed exploration of their reservoir confirmation sites.

The USGS is not involved with industry in either of these two activities, except indirectly through DOE and its interface with industry.

Major FY 1981 studies of the USGS Geothermal Research program are:

(a) a wide variety of projects in the Cascade Range of northern California, Oregon, and Washington to assess the significant geothermal potential of this region through a better understanding of the active volcanic, tectonic, and hydrothermal processes that characterize the region.

(b) the first quantitative assessment of the low-temperature (90°C) geothermal resources throughout the US that are useful for direct-heat (non-electric) purposes, to result in estimates of the occurrence, distribution, and magnitude of these resources on a nationwide basis.

(c) hydrologic, geochemical, and geologic investigations of the geopressured geothermal resources of the Gulf Coast to determine resource recoverability factors, for refining the current national assessment of these resources in USGS Circular 790.

(d) an analysis of a considerable amount of surface survey, borehole, and mapping data for the northern Great Basin (northern Nevada and surrounding areas in Oregon, Idaho, and Utah) to be able to recommend further studies of the significant geothermal potential of this region.

(e) continued research on developing geochemical geothermometers for estimating subsurface temperatures.

Plans for FY 1982 include:

(a) continuing emphasis on the major regional assessment of the Cascades, presently planned for completion in FY 1983-1984.

(b) completion of the national assessment of low-temperature resources.

(c) incorporate resource recoverability data into the regional assessment of geopressured geothermal resources of the Gulf Coast, and extend studies of these reosurces to deep sedimentary basins elsewhere in the US.

(d) development of studies to complete a major regional assessment of the Great Basin.

Question. Please explain to the Committee the extent of your work on mineral resources on Indian lands.

Answer. The Geological Survey program for mineral resources investigations on Indian lands consists of a two phase approach similar in scope to our Forest Service and BLM wilderness reviews.

Phase I consists of a literature search which summarizes available information on the mineral and energy potential of all reservations in the conterminous States.

- One hundred Phase I reports will cover all reservations, 98 will be completed by the end of 1981, and the remaining two in 1982.

Phase II geologic, geochemical, and geophysical field investigations are then done only on those reservations that have mineral resource potential--as indicated by the results of Phase I--and whose tribes are willing to have such a study done.

- Nineteen Phase II field investigations have been undertaken, seven are completed. Present plans call for starting at least five more.

- On a conservative basis mineral deposits already identified from Phase II studies have a current value in excess of $2.4 billion (200 times the $12 million spent for these studies to date).

Once phase II studies have been completed the tribes can elect, if they wish, to have Phase III studies done.

Phase III studies, which the Geological Survey does not perform because they are the purview of private industry, are very detailed large scale geologic mapping coupled with dense geochemical sampling, in turn followed by closely spaced drilling to outline ore bodies and determine grade and tonnage of ore. Phase III studies are performed by exploration and development companies.

A special effort is being made as part of Geological Survey studies to involve young members of various tribes in order to make it as much of a training program as is possible. We are also preparing a high-school level version of the geology of the Navajo Nation to attract the attention of Indian students to earth science so that in time, Indians will have their own experts in this field.

Question. How much funding is provided by the Bureau of Indian Affairs?

Answer. In 1981, the Bureau of Indian Affairs provided $0.5M for Phase I summaries and $2.8M for Phase II field investigations, a total of $3.3M. In 1982 we anticipate funding of $0.25M to complete Phase I, and $4.0 for Phase II, a total of $4.25M.

From the inception of the program in 1975, Bureau of Indian Affairs has provided a total of $2M for Phase I and $12M for Phase II studies. We anticipate the program will be completed by 1990 for a total cost of about $35M.

Question. How do you go about performing these investigations?

Answer. Phase I studies involve a literature search to determine what information is already available and to identify areas within the reservation which may warrant special attention.

Phase II field investigations consisting of, 1) geologic mapping to determine rock units favorable for the concentration of minerals, 2) geochemical sampling to look for indication of ore deposits, 3) geophysical surveys to locate anomalies that may identify ore deposits, and 4) a limited amount of drilling to determine the thickness, number, and extent of coal beds. Phase II field studies are designed to provide tribes with a level of information so that they can be in a favorable position to approach exploration companies.

Question. The Council of Energy Resource Tribes criticizes the three-phase programs the Survey employs, which are: Collecting and summarizing of existing data in Phase I, generating new data through limited on the ground exploration in Phase II, and performing of detailed studies, including drilling in Phase III. The Council asserts that after Phase I, feasibility studies should be conducted rather than going ahead with your Phase II and Phase III operations.

What is your response to this observation?

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Answer. It is neither prudent to attempt, nor possible to perform, marketing feasibility studies until you know exactly what you have--and how much. Phase I literature search and summaries do not provide these kinds of information.

Phase II field investigations to determine favorable mineralized target areas are a minimum level of information, and preferably Phase III studies to determine grade and tonnage are necessary before worthwhile marketing feasibility studies can be done.

Question. In your offshore geologic survey program and in your Conservation Division program a considerable amount of funds are expended on seismic data and related efforts for both resource and environmental surveys.

- What is the approximate total cost of all of these as they relate to the leasing of offshore areas?

- Are there any ways that the total amount of data collected can be reduced without endangering the environment or reducing substantially your ability to judge the economic value of leases?

Answer. A) In our Geologic Division's program on "Offshore Oil and Gas Resources" the amount of funds expended on seismic and related (gravity, magnetics) data is 72% of our appropriations. This includes the acquisition of the data by ship-borne surveys, the related support and logistics functions, travel associated with crew changes, data processing and interpretation of the results. In FY 1982, these funds will support five regional geophysical surveys for purposes of resource assessment, and completion of seven marine geologic framework studies. The remaining 28% of the funds are to be expended for support of related topical research studies (such as petroleum geology), for computer support, mapping and administrative functions.

With respect to our program on "Energy-related Environmental Investigations," 71% of the funds are directly used for the acquisition of seismic and sonar data, sediment coring and sampling for data processing and for analyzing and interpreting the results. The remaining 29% supports corollary research in geochemistry and sediment transport, the operation of computers, preparation of maps and necessary administrative functions. In FY 1982, these funds will be used to implement 12-15 regional geohazard surveys for OCS lease sales on schedule past FY 1982. The surveys are conducted in a period of 1 to 3 years prior to sales, and consist of at least one high-resolution seismic survey and one coring/sampling survey for each OCS area.

The total cost of the resource and energy-related environmental surveys combined is $14.73 million in FY 1982, which represents a reduced level of operation compared to FY 1981 and previous years as BLM pass-through funds for hazards surveys are not anticipated to be forthcoming.

Total expenditures from the start of the program through FY 1980 by the Conservation Division were $67.4 million, $32.9 million was spent for procurement of data needed for resource evaluation and $34.5 million for high resolution seismic data needed for geologic hazards determinations.

During this time period an estimated 8,970 OCS tracts were evaluated and 3,738 tracts were leased which brought in a total of $26.1 billion in bonus bids alone.

B) We believe that regional studies require the current level resource and environmental support. However, we are in the process of evaluating, at the Secretary's request, our entire leasing-related activities in order to streamline our efforts. As a part of this review, we have recommended for FY 1982 a reduction of high-resolution tract specific data. Further analysis may make additional reductions possible.

The Conservation Division can reduce the number of miles of high-resolution seismic data acquired relative to the number of acres offered for leasing and still address the problem of geohazards that might occur in a proposed sale area. The Department of the Interior has modified its policy of acquiring tract-specific high-resolution seismic data on all tracts tentatively selected for leasing but will acquire data on a selective basis for those tracts where professional judgment indicates the possibility of the presence of significant geologic hazards which could preclude oil and gas activities.

Question. You originally proposed a new program of environmental studies of marine frontier areas (GS-130-134). Your revised budget deletes it.

- Please explain how this program would differ from your current environmental investigations.
- What are the unique problems of frontier areas that need to be investigated?
- What makes these areas different than areas where you have previously done studies?

Answer. A) The current marine environmental geology investigations are aimed at regional reconnaissance of geologic hazards investigated by means of ship-borne surveys. In-situ or downhole long-term measurements of sediment behavior are not within the scope or mandate of this program. The goal of the proposed program, therefore, is to understand the strength properties of marine sediments using measurements of the causes and effects of soil failure. Furthermore, the program is designed to investigate these problems in marine frontier areas, specifically Arctic and deep-water areas. In this manner the program adds an engineering geology element to the study of offshore geologic conditions and processes (including hazards), in the same manner as land-based geohazards are now evaluated using principles of soil mechanics. These principles can be, but have not yet been, applied to the marine environment in a systematic, regional manner; industry uses the concept but in site-specific tests only. This program has evolved from and supplements our environmental program for two reasons: (a) we are being asked increasingly by BLM, DOE, coastal states and industry to provide quantitative answers, in the regional or topical context, about the strength of marine soils, the susceptibility of sediments to failure, the rate of movement of submarine landslides, the bearing capacity of unusual seafloor soils (such as volcanic ash or carbonates), and the geotechnical character and behavior of ice-bonded soils; (b) we are attempting to attain a higher

level of understanding for offshore engineering concerns in order to substantially reduce chances of delaying leases, and conversely to help accelerate oil and gas exploration and production after leasing. Results of this activity will be useful not only to OCS petroleum development, but also to ocean mining, site surveys for OTEC, ocean margin drilling, and other future concerns about offshore development.

B) The unique problem is that neither the Government nor industry is quite prepared to develop deep-water and Arctic mineral resources, because regional investigations fundamental to appraising options to development have not been started, much less concluded and the problems understood. Issues include the foundation design options for platforms on submarine slopes, the influence of offshore permafrost on subsea and downhole completions, the stability of gravel islands and pipelines in the Arctic Ocean's fast-ice zone, the engineering constraints on drilling caused by gas hydrates below the Continental Margins, the distribution and range of sediments too weak for conventional foundations, ocean waves and strong-motion earthquakes loading and liquefying marine soils, and the stability of submarine landslides relative to pipeline design, routing options and burial techniques.

C) Deep-water and Arctic areas are different from the Shelf in how geologic processes operate. The seasonal freezing and thawing of soils in the Arctic offshore, the daily modification of the seafloor by ice scraping and gouging it, the episodally triggered but very rapid downward transport of sediments in submarine canyons are among the important concerns that do not exist on the Continental Shelves in temperate areas. We have begun to map hazards of the deep-water areas, and recognize the existence of these geologic conditions and processes, but we cannot quantify their hazards potential and effects on resource development. Our resource studies and subsequent nominations by industry indicate that deep-water areas are economically interesting and should be developed rapidly. We believe that addition of an engineering geology phase to follow the environmental studies should speed up leasing. On account of the high resource estimates, we also have a special interest in the Arctic OCS. Here the lease areas are very large, the problems are more diverse than in the offshore of the lower 48 states, and our operations are restricted by the weather and ice cover. A major portion of this program is, therefore, dedicated to studies of selected, critical marine cold-regions problems in view of the accelerated leasing of the Arctic OCS.

Question. You also requested $900,000, to initiate a program to study the United States Atlantic Margin (GS-135 & 136). Your revised budget deletes it. This program is evidently dependent on the timing of an NSF drilling project.

- Is that drilling project slated to be continued under the new revised budget?

- What would be the major benefits of this activity and at what relative level would it need to be funded in future years to be effective?

Answer. A) Our proposal suggested a one-time (maximum two-year) activity. During the first year (FY 1982) of this program the GLOMAR CHALLENGER

drilling vessel was to drill 5 or more holes for us on the Continental Slope and Rise Off New Jersey. The timing of this drilling was dictated by the sechdule of the Deep Sea Drilling Program (DSDP) of the National Science Foundation (NSF). We intended to use the drillhole data from offshore New Jersey to improve our understanding of how the Atlantic Continental Margin formed and changed during its existence, and to improve our knowledge and estimates of the petroleum that it may contain. The project as proposed would have taken advantage of the availability of this drillship in FY 1982; however, without the USGS' involvement in the NSF program, drilling off New Jersey will probably be deleted and the ship will be rescheduled to conduct other research for the Deep Sea Drilling Program.

B) The program should be an essential part of all resource work on Continental Margins, because the modeling phase, using the drillhole and our existing seismic data, promises to effect cost savings in the regional resource investigations conducted by the USGS. According to the arrangements with NSF, drilling by the CHALLENGER would cost but $1 million on an annual basis in FY 1982-1983 (plus modeling and analysis costs), in contrast, comparable data obtained through commercial drillships may cost ten times that amount. We estimate that a continued program past FY 1983, aimed at deeper penetration into the seafloor and in greater water depths would cost $2-3 million annually using the CHALLENGER.

WATER RESOURCES

Question. Please provide a funding breakdown for your Data Collection and Analysis Program by activity, for fiscal years 1981 and 1982 (GS-139-141).

Answer. The funding breakdown for the Data Collection and Analysis Program is as follows:

Activity	FY 1981	FY 1982
	Dollars in Thousands	
Hydrologic Data Collection	$ 8,541	$ 9,284
National Water Quality Networks	6,276	6,825
River Quality Assessments	1,159	394
TOTAL	$15,976	$16,503

Question. On page GS-139, your justification states "there remain serious deficiencies in geographical distribution and in the kinds of data available." What are you doing to correct these deficiencies in your collection and analysis activity?

Answer. Requirements for more and improved water-resources data by Federal, State, local, and non-government users are steadily increasing. However, each year brings a new imperative to reduce the scope of operations to accommodate available funds. This results in discontinuance of selected sites, decreasing frequency and intensity of data-collection visits to other stations, and postponing repair, rehabilitation, and equipment replacement to the extent that quality control and safety aspects of operations are becoming suspect.

Every effort is being made to continue the highest priority stations.

Question. What will be the effect of an $800,000 reduction in your River Quality Assessments Program?

Answer. The major objective of the Federal River Quality Assessment Program--the development of approaches for assessing river-quality management alternatives--has been accomplished. Three of the present four federally funded studies will end in FY 1981. The $800,000 decrease for FY 1982 is therefore a planned redirection of funds to the Federal/State Cooperative Program to support cooperatively funded river quality assessments. The $364,000 remaining in the Federal Program in FY 1982 will be used to complete the Potomac Estuary Assessment, the seventh and last of the federally funded studies. New river basins to be studied in FY 1982 will be selected through negotiations with State cooperators.

Question. What have been the major results of your river quality assessments?

Answer. River Quality Assessments have been completed in the Willamette River, Oregon; the Yampa River, Colorado-Wyoming; and the Upper Chattahoochee River, Georgia. Assessments are being completed in FY 1981 in the Truckee-Carson Rivers, Nevada-California; the Schuylkill River, Pennsylvania; and the Apalachicola River, Florida.

The major result to date is that intensive assessments of the type conducted can define the cause-effect relationships of river quality to provide decisionmakers with a suitable basis for evaluating the pros and cons of various management alternatives. For example, the Willamette Assessment found that advanced waste treatment was not necessary to meet stringent water-quality standards established for the river. Based on the study, State resource managers have used other less expensive alternatives, and the General Accounting Office estimates that the study potentially could save Oregon and the Nation tens of millions of dollars.

Question. Please explain how your activity in Subsurface Waste Storage is tied to the regulatory process.

- o Do you assist regulatory agencies in reviewing the storage of waste?

Answer. The Subsurface Waste Storage program is designed to support investigations into the movement of waste and waste-derived leachate through aquifers; the results of this research provide technical guidance to regulatory agencies charged with the protection of ground-water resources from contamination. Investigations include geochemistry, microbiology, solute-transport modeling, absorption, and desorption of contaminants.

The Subsurface Waste Storage program also provides for coordination between the Geological Survey and regulatory agencies, through which, at the regulatory agency's request and normally on a cost-reimbursable basis, the Geological Survey does provide assistance with specific waste disposal investigations. For example, the Geological Survey is helping the U.S. Air Force (USAF), in cooperation with the U.S. Environmental Protection Agency

(EPA), to investigate the trichloroethylene (TCE) contamination beneath the Wurtsmith Air Force Base in Michigan in an effort to resolve ligitation between the State of Michigan and USAF. The Geological Survey has also signed several Memoranda of Understanding with EPA. Under these agreements, the Geological Survey provides technical support to EPA in matters involving the Resources Conservation and Recovery Act, the Safe Drinking Water Act, and the Underground Injection Control Act. The activities include technical advice, report review, general ground-water resource assessment, and occasionally provision of expert witnesses at court proceedings.

Question. The revised budget would postpone the start of two regional aquifer studies for a year. Do the two affected areas have any serious water problems?

- Who has expertise in the study of this area other than the Survey?

Answer. There are numerous local problems relating to ground water in the Columbia Plateau of Washington and Oregon; these include declining water levels due to heavy pumpage, competition between water users for limited supplies, some water logging of agricultural land due to poor drainage, and some loss of water by vertical leakage through improperly constructed wells. Similarly, a number of ground-water problems have developed in Puerto Rico. Along the south coast of the island, there has been a shift in pumpage from agricultural to industrial use, causing a decrease in return flow of water to the ground-water system. In north coast limestone areas, waste disposal practices have created the potential for serious contamination problems, and pressures are declining in artesian aquifers which have been tapped for industrial use.

All of these problems could be addressed more effectively on the basis of the hydrologic information and understanding which the RASA studies are designed to provide. The proposed cuts will mean a 1-year delay in obtaining this information; however, we believe that the Nation is in a better position to accept this delay than to accept delays in meeting other water information needs, which would have resulted from alternative program cuts.

To our knowledge, the Geological Survey is the only agency with experience in ground-water studies of the scope of the RASA investigations. There are no Federal agencies other than the Geological Survey which have attempted the analysis of ground-water flow systems on a regional scale. No State agencies in Washington or Oregon have undertaken ground-water studies on this scale, nor has any agency of the Commonwealth of Puerto Rico.

Question. Your Flood Hazard Analysis activity (GS-152 and 153) is expected to prepare approximately 140 flood area maps in FY 1982. Your justification states that up to 5,000 maps may be required to cover areas with high potential for flooding.

At the current rate it would take between 30 and 40 years to complete the program.

- Is the program at a sufficient level?

Answer. Yes. Most of the urgently needed flood-hazard mapping has been completed. The 5,000 additional maps represent a best definition of possible future needs. The project also includes defining improved flood-estimating procedures.

Because most of the urgently needed mapping has been completed, a projection of about 140 maps in FY 1982 was considered sufficient to keep pace with developing needs. The effort to improve flood-estimating techniques is commensurate with availability of manpower.

- What is the danger if the program is not done at all?

Answer. Termination of the program probably would not present any great danger in any identified areas but would restrict coverage of newly developing areas and would substantially delay progress toward improvement of flood-estimation techniques.

Question. You requested $500,000 to begin a program in Cold Regions Hydrology (GS-154 and 155). The revised budget deletes the program.

- What size of program would you expect this program to attain in the future?

The Cold Regions Hydrology Program is projected to reach a funding level of 2.0 million in 1984 and continue at that level.

- What is the significance of this activity?

Cold region hydrologic processes are significantly different from temperate climates--long periods of ice cover influence water availability, surface reservoirs, movement and impact of pollutants; permafrost effects ground water availability; changes in land use can cause extensive erosion and fluvial sediment movement, etc. However, these processes are not well understood. Scientific knowledge on these functions is very important to decisions involving development of energy and minerals and commercial and population development in general. This research will be directly supportive to the Federal and State needs under the Alaska Lands Act.

- Why is it not critical to begin this effort now?

It is desirable to begin this work as soon as possible. However, personnel experienced in cold regions hydrology will have to be recruited for this activity and there is only a relatively small pool to draw from. For this reason, and because of the need to reassess the fiscal aspects of the Geological Survey's program, it is recommended that the start on the Cold Regions Hydrology Program be delayed until FY 1983. In the 1981 and 1982 budgets $300K is being redirected to begin this research in a limited way.

Question. Please explain the scope of your program on toxic wastes, expected to begin in FY 1982 at a level of $1.0 million (GS-157 and 158).

Answer. The scope of the program in FY 1982 will include: (1) an inventory of information on waste disposal sites with hazardous potential; (2) expanded fundamental research into physical and chemical processes affecting the fate of toxic contamination in ground water; (3) providing information to water resource managers and regulatory officials.

- o How will you coordinate this program with EPA?

Formal coordination will be accomplished through a USGS-EPA Memorandum of Understanding which is currently being completed. According to that agreement, the USGS will review and advise EPA on geotechnical matters relating to legal action taken against polluters, provide technical review on work and recommendation of EPA's consultants, and perhaps participation with EPA on some field site studies.

- o How will it be tied to a regulatory program, if at all?

USGS role will be one of reviewer and technical advisor to EPA. We would not have direct regulatory role other than perhaps providing expert testimony at hearings and litigation actions.

- o What other government agencies are involved in such studies?

None to our knowledge.

- o Ultimately, what do you expect the annual cost of this program to be?

The currently planned program may require an expanded effort over the next 3 to 4 years to adequately address the scope of the problem.

Question. In your Federal-State Cooperative Water Program you are requesting a $2.8 million increase in data collection and analysis (GS-165 and 166) for increased collection of water quality information.

- o Please explain what specific types of information you will be looking for with this increase and what particular areas of the country you will be collecting this data from.

- o What would be the effect of not providing the additional funds in FY 1982?

Answer. The Federal-State Cooperative Program covers all 50 states and the District of Columbia--therefore, the entire Nation will be the area from which the data will be collected. Specific types of information obtained will include the chemical, biological, and physical quality of the Nation's water resources. Special emphasis will be placed on ground-water quality, river quality assessments, acid rain, and the impacts of energy development and urbanization on water quality.

The need for water quality information has increased beyond our ability to satisfy even the highest priority needs through redirection of resources. The health and well-being of the Nation will be seriously affected unless these studies are undertaken as soon as possible.

Question. You requested a $1,100,000 increase in the Water-Use Program in your cooperative program (GS-167 and 168). The revised budget deletes it.

- Please explain specifically what the increase would have funded. For example, you state that additional water-use data information categories will be covered. What categories would these have been?

Answer. The increase would have allowed those States which have recently started Water-Use Programs to expand their programs from a few categories into all categories of water use. These categories of use include: public supplies, industrial, commercial, agriculture irrigation, agriculture non-irrigation, and electric power generation.

- What kinds of information have you discovered since the beginning of the use of this system that you feel justify its continuing support?

Answer. There is little water-use information available in most States that would provide a consistent, timely, accurate, and orderly data base for assessing water use on a statewide basis, much less a regional or national basis. We have discovered a general lack of reliable information.

- Your explanation of the revised budget shows a significant impact on some states. What is the practical effect on state programs? Would the states prefer a general decrease in the cooperative program instead, so they could choose where to cut?

Answer. Seven states now in the planing phase of the program will not be able to advance past this phase. Some States now in the data collection phase will be able to collect data for only one or two categories of use and will be required to expand the timeframe to include all categories of use. The value of the cooperative program is that the States have an equal voice in the work that is undertaken. Through the cooperative program, we can address important State water-resources issues and high priority national issues at the same time. Water use is a high priority program and is well suited for the cooperative program. The States would not like to see a general decrease in the cooperative program.

Question. Please explain how the data you used in your national coal hydrology program is used in the leasing of coal (GS-171).

Answer. For leasing of coal on public lands two levels of hydrologic data are needed. The first is regional in scope and broadly describes the existing hydrology (baseline surface and ground water quantity and quality) for input to regional EIS's. Once lease tracts are delineated within the EIS regions, more detailed site related hydrologic information is needed to determine the suitability for mining and reclamation.

Question. How does it assist in assessing current coal mining activity?

Answer. Water quality and quantity data, collected at several thousand sites in areas of both private and public ownership, are being analyzed and preliminary results released in a series of coal area hydrology reports.

These data are very revealing as to the impacts of coal mining Nationwide. For example, while there are areas significantly impacted by acid mine drainage, this does not appear to be as extensive a problem as once thought. Serious impacts of mining are revealed by the current water quality data; future data should logically reveal improvements as a result of reclamation practices.

Question. Please provide more data on the effect of reducing the budget by $2.7 million.

Answer. Our plans in the event the $2.7M budget cut is realized are:

- Reduce or eliminate data acquisition in lower priority coal areas such as in Iowa, Kansas, Missouri, Oklahoma, and Arkansas. Thus, there would be less impact on the major coal producing States.

- Curtail planned new areal hydrologic investigations in the lignite areas of Texas, Arkansas, Mississippi, and Alabama. New programs in these areas will be undertaken after completion of work in the larger coal producing States.

Question. If you reduce the number and type of measurements, what happens to the quality of your results?

Answer. The interpretation of water data will be based on fewer measurements and, thus, the analyses of potential and actual mining impact will be less accurate than planned. However, we believe that the analyses will still be within reasonable limits.

Question. If leasing is increasing, why shouldn't the work in coal hydrology increase?

Answer. The proposed program for FY 1982 can be adjusted to accommodate anticipated increased coal leasing.

Question. What is the status of your activity in low-level nuclear waste hydrology (GS-173?

- When will you be able to develop criteria to allow regulatory agencies to determine the location of future sites and how they should be managed?

Answer. The low-level nuclear waste program has progressed well in the past 4 years. Reports on field research studies at six low-level waste sites have been completed and will be released this year. A comprehensive overview report on geologic and hydrologic considerations for low-level waste site selection and operation is in preparation using results of the field studies and basic research developments. This report, which should be completed in 1981, will provide guidelines to NRC, EPA, DOE, and State agencies responsible for regulating low-level radioactive waste management. (The USGS is not responsible for establishing technical criteria for low-level waste regulations.) The USGS has been working closely with NRC, EPA, DOE, and the States, to provide appropriate earth science input to their regulations, criteria, and guidelines. Thus, results of USGS investigations are already being implemented in new low-level waste management programs.

Question. What is the current schedule for selecting a site for a test of high-level nuclear waste disposal?

Answer. The current schedule of the Department of Energy (DOE) is to select a site for a test of high-level waste disposal in 1985 from three host-rock types: (1) Basalt (Hanford Reservation); (2) Tuff (Nevada Test Site); (3) Bedded or dome salt (geographic area to be identified).

- o What is your exact role in this process?

The USGS receives funds from DOE to conduct geologic and hydrologic investigations and research in support of DOE's program. Objectives of the USGS effort are to (1) identify a test disposal site underlain by tuff at the Nevada Test Site, (2) characterize selected areas underlain by bedded salt in the Paradox Basin, Utah, and (3) define regional geohydrologic conditions pertaining to the transport of waste radionuclides in the vicinity of selected salt domes in Louisiana and Mississippi.

Our support to DOE also includes reviewing, in a consulting capacity, selected aspects of its earth science research related to the waste management program and specifically the selection of sites for tests of high-level waste disposal.

In addition, the directly funded USGS program (GS-174) includes generic earth science research applicable to DOE's task of selecting a test disposal site.

- o Will you help choose or characterize the site or sites?

The task of choosing a test site is the responsibility of DOE. Our program will provide earth science information to assist in making the selection.

A large segment of the directly funded USGS program is devoted to developing techniques and methods for geologically and hydrologically characterizing the site environment and host-rock properties. The extent of which the USGS will be involved in characterizing the test disposal sites will depend on whether the DOE requests the assistance of the USGS staff.

- o When do you think a site can be chosen?

A site for testing can probably be chosen in 1985.

- o Is your program at a level such that the required information for site selection will be available to meet the Department of Energy's schedules?

The USGS program in high-level nuclear waste investigations is at the level necessary to provide the DOE with information for the selection of a site for a test of disposal. Much of the needed information will come from investigations funded by DOE at specific sites under consideration and designed to meet its schedules.

Question. You originally requested a million dollar supplemental for oil shale hydrology in FY 1981 and continued that level in FY 1982 (GS-175).

- What increased information will be lost by reducing the level by $1 million as you have done in the revised budget?

Answer. Information lost as a result of reduced funding relates to the hydrology of the aquifer systems in the principal oil shale areas of Colorado and Utah. The basic activities associated with evaluating ground water supplies (planning, drilling, testing, and modeling) will be postponed without serious disruption to the overall program.

Question. What kinds of information can you get from the currently active leases?

Answer. Currently active leases provide information on the hydrology and geology of the particular lease sites only. They do not provide the qualitative and quantitative information relative to the types of waste products, their areal migration, and their fate in the water environment.

Question. Is lease information included in your baseline program?

Answer. The baseline program provides a broad, general picture of the hydrology in the oil shale regions. When potential sites for leasing are identified, extra effort is devoted to developing a more detailed understanding of the surface and ground water hydrology in the vicinity of each site.

Question. If the existing data collection network is adequate as you state in the revised budget, why were funds originally requested? What data are you foregoing?

Answer. The revised budget emphasizes the adequacy of the existing data network to support regional hydrologic appraisals. As indicted above, those types of studies do not provide the in-depth knowledge required to respond to site-specific questions related to availability of water supplies and environmental impacts of mining and oil-shale retorting.

Question. What areas does your base budget cover in its monitoring program?

Answer. The oil shales areas in Colorado and Utah; principally, the Piceance, Parachute-Roan Creek, Green River and Uinta Basins.

CONSERVATION DIVISION ACTIVITIES

Question. Please provide for the record a more detailed breakdown of the costs both in FY 1981 and 1982 of your activities under the Outer Continental Shelf Lands Program in the Conservation Division (GS-179).

Answer. The detailed breakdown in the activities under the Outer Continental Shelf Lands Program in the Conservation Division is:

	FY 1981		FY 1982	
	Base	FTP Pos.	Estimate	FTP Pos.
Regulatory Program	$32,674	423	$34,774	423
(Reg. of O&G Oprs.)	30,487	415	32,487	415
(Research & Development)	1,147	3	1,747	3
(Platform Verification)	1,040	5	540	5
Resource Evaluation Program	$37,958	476	$41,208	476
(OCS Leasing - Lease Tract Selection & Evaluation)	34,165	433	38,015	433
(Reserve Inventory)	1,289	40	689	40
(OCS Information)	2,504	3	2,504	3
Total OCS Lands	$70,632	899	$75,982	899

Question. The OCS Lands Act Amendments required a scheduled inspection at least once a year for OCS activity.

- o Do you meet this criterion?
- o On what basis do you establish your schedules and what kind of frequencies have been planned for inspections?
- o With regard to inspections, your justifications on page GS-183 suggest that underwater structural inspection will be required soon. Why?

Answer. Yes, we meet the criteria of inspecting each and every facility on the OCS at least once per year. In recent years, we have managed to inspect each facility on the average of every 8-9 months.

Schedules for inspection activities are based on several requirements including the legal mandate to inspect each facility once a year; the need to conduct field investigations of proposed industry actions including applications for permit to drill, well workovers, and well abandonments; and the need to followup on industry's correction of deficiencies and shortcomings noted during previous inspections. To ensure efficient utilization of inspection personnel, the Geological Survey maintains a computer-based information system which assists in scheduling and records the results of inspections to serve as a guide to determining inspection priorities.

Regarding underwater structural inspections, we have asked for comments from the public through the Federal Register as to the merits of issuing regulations for structural inspections. At this writing, we are reviewing comments and have made no decision on such inspections.

Question. What is the effect of reducing the platform verification program by $500,000 as your budget indicates (GS-185)?

Answer. Because of the substantial budget implications of proceeding with implementation of the Environmental Data and Information Management System (EDIMS), the Geological Survey has elected to proceed with a more modest

approach to acquiring the environmental data which would be used to perform the verifications of proposed platforms. Under the revised approach, the Division will acquire wind, wave, current, bottom stability, and other pertinent geologic data on a case-by-case basis to perform the necessary verifications rather than assembling a comprehensive data base of environmental factors which should be considered in the engineering reviews of the structural integrity of the proposed platforms.

Question. Please provide for the record the details of the additional $2 million requirement for regulation of operations in the OCS that is included in your budget justification (GS-185).

Answer. Operations in the Gulf of Mexico will require the processing of more applications for permit to drill (APD's), approval of more exploration and development and production plans, and more inspections. In order to handle the expected increase in workloads that are associated with accelerated OCS leasing and price deregulation, the Survey will require additional personnel and increased helicopter services to perform supervisory responsibilities adequately.

Question. You are requesting a $600,000 increase in R&D to accelerate technology studies relating to the requirement for use of best available and safest technology (BAST) as specified in the OCS Lands Act Amendments (GS-185). Please explain the various types of technology that are available and what kind of choices need to be made in order to arrive at these decisions.

Answer. As industry moves into frontier areas such as the deeper, rougher Atlantic Ocean and the ice-covered Arctic, new kinds of operations are required. In the deep ocean, conventional structures will yield to tension leg platforms, guyed towers, floating platforms, and subsea systems. The predominant structures problem will be holding bottom and withstanding the forces of the ocean flowing against them not to mention underwater inspection. Drillers will have to operate equipment such as blowout preventers which are located on the ocean floor, thousands of feet below the surface of the ocean. For the ice-covered Arctic, in addition to gravel islands, ice islands which may be natural or artifically reinforced will probably be used. These operations will present new design and regulatory problems, and both industry and government will be coping with them simultaneously. Whereas industry will determine their operational methodologies from economic considerations, government will have to identify the acceptable risks.

The R&D program will devise and apply statistical modeling techniques to analyze operational risks and failure probabilities as well as failure consequences. From these studies, insights into "Best Available and Safest Technologies" may be obtained.

The British and Norwegians recently have embarked on risk assessment for their offshore operations because of the escalating costs of operations and inspection. They have requested our participation in a joint program in order to share the costs of collecting statistical data. They have much rougher water operating experiences and the British, in particular, have spent millions on the large scale fatigue testing of structures. Risk assessment will encompass all aspects of OCS operations, for example, structures integrity, helicopter operations, and blowout prevention.

Question. On page GS-190 it is stated that the OCS Oil and Gas Information Program (OCSIP) allows the Conservation Division (CD) to avoid litigation with affected States.

- What kind of litigation is involved, and how does this program avoid it?

Answer. The OCS Oil and Gas Information Program provides regional and, in some cases, state-specific planning information concerning offshore activities and their onshore impacts. This program was established so that the pace and level of offshore oil and gas exploration, development, and production are not delayed because of gaps in information that the States require for making decisions within their jurisdiction. The kinds of information provided to the States include data on regional geology, exploration, development, and production activities, transportation strategies, and onshore facilities. This information is provided to States after lease sales are held, and is updated approximately every 6 months. The kinds of litigation that could arise in the absence of OCSIP involve requests for data and information that are public but are not released in any published format. This program avoids litigation through the processing of large amounts of publically available data and information into succinct and accessible sources of planning data. Through the 2 years of close consultation with the States, OCSIP has found that providing this type of information on a continuous basis provides States with an opportunity to provide input to Survey's responsibilities associated with the OCS minerals leasing process.

Question. The system (OCS Oil and Gas Information Program) is also supposed to provide limited technical assistance to States.

- What kind of assistance is involved?

Answer. States that receive Summary Reports and Indexes may determine that the information provided to them is adequate, but the State does not possess the expertise to assess the next steps that may be required of them. OCSIP can offer to these States advice and technical assistance on these matters. One area that seems to be lacking in all but a few States is expertise on facility siting. Through our expertise in other regions, OCSIP can assist a State in developing for itself a siting methodology consistent with their laws and regulations. Other forms of technical assistance might include summarizing geologic hazard data or providing sources of information on specific research topics that a State may wish to pursue.

Question. What is the effect on your Outer Continental Shelf (OCS) Reserve Inventory Program (GS-193) of a $600,000 reduction as contained in the FY 1982 budget?

- What quantitative effect will it have on the accuracy of the inventory?

- What operational effect does it have on OCS programs, if any?

Answer. The number of field reserve estimates completed will be reduced from approximately 30 in FY 1981 to 17 in FY 1982 as shown on the workload

table on page GS-193. Work will continue in the collection of geologic, engineering, economic, and production data and the estimation of reserves on new fields. The total number of fields not completed will increase from 25 percent in 1981 (129 fields) to 28 percent in 1982 (152 fields). To the extent that the inventory is incomplete, its reliability is less than desired.

The program provides essential information to other OCS programs such as (1) lease sale evaluation where tracts are offered for sale in proximity to discovered oil and/or gas fields; (2) plans of development and production rate control; (3) unitization and enhanced recovery and the OCS Oil and Gas Information Program wherein accurate oil and gas reserves information is a factor utilized by State and local governments in their planning decisions.

Question. A May 5 memorandum to the Assistant Secretary for Energy and Minerals from the Inspector General suggests that higher royalties could be gotten by taking Outer Continental Shelf (OCS) gas royalties in kind rather than on a dollar basis. The memo states that an increase of $50 million a year in royalties would occur. Please explain how this would work, and what your assessment of the suggestion is?

Answer. We believe that the taking of OCS gas royalties in kind is not cost effective, and that any current losses in revenue result from system inadequacies that are being addressed.

Most OCS gas sales contracts contain price escalation features which provide that prices can be increased up to the maximum permitted by Federal regulations. These prices are based on specified schedules issued by Federal Energy Regulatory Commission (FERC) under the Natural Gas Policy Act (NGPA). However, some OCS gas sales contracts do not contain price escalation features and the current gas sales price under these contracts is substantially less than the maximum permitted by Federal regulation.

The Secretary of the Interior clearly has the authority to take royalty in kind. However, Section 302(b)(5) of the Department of Energy (DOE) Organization Act transferred from the Secretary of the Interior to the Secretary of Energy those functions under the OCS Lands Act, the Mineral Leasing Act, the Mineral Leasing Act for Acquired Lands, the Geothermal Steam Act of 1970, and the Energy Policy and Conservation Act which relate to specifying the procedures, terms, and conditions for the acquisition and disposition of Federal royalty interests taken in kind. DOE has not issued any regulations for the disposition of royalty gas.

Section 27(c)(a) of the OCS Lands Act, as amended, states:

"Except as provided in paragraph (2) of this subsection, the Secretary, pursuant to such terms as he determines, may (sic) offer to the public and sell by competitive bidding for not more than its regulated price, or, if no regulated price applies, not less than its fair market value any part of the gas (A) obtained by the United States pursuant to a lease as royalty or net profit share, or (B) purchased by the United States pursuant to subsection (a)(2) of this section, (Emphasis added)."

If competitive bidding is required for royalty gas, as we believe it is, then the proposal loses the simplicity of implementation which makes it so attractive. There are certain practical considerations which must also be considered. Assuming the Secretary has the authority to implement the policy and sell royalty gas, what do we do if the existing gas purchaser refuses to purchase the royalty gas from the government at the higher price? It would be difficult for the U.S. Geological Survey to actually market the gas itself because of restrictions imposed by existing distribution systems and existing service commitments. If the royalty gas were sold to other than the existing gas purchaser, additional conflict might ensue with FERC because of possible charges of "abandonment of service" under Sections 4 and 7 of the Natural Gas Act, 15 USC 717c and 717f. Knowing this, the existing gas purchaser might refuse to buy from the government so as to cause the proposal to fail.

We believe that losses of royalty revenues from gas sales, if any, occur due to shortcomings in production valuations. We presently attempt to ensure that the prices upon which royalties to the government are based are the highest prices paid regionally for like products, regardless of actual selling prices.

We are in the process of replacing our royalty accounting system which will permit the auditing of product values to ensure that the highest legal price is used in calculating royalties. This, together with the administrative objections recounted above, causes us to recommend against the Inspector General proposal.

Question. Please explain the specific need for increases in your oil and gas activity onshore in FY 1982 (GS-198).

- Will this allow increased inspection activity?
- How much of your activity is oriented to developing information for the private leasing of the National Petroleum Reserve in Alaska?
- Your revised budget reduces the amount for NPRA by not reviewing all tracts in detail. Those not reviewed will be the ones with sufficient bidding competition. Why is competition a measure of the USGS role? Is this a different approach than that used on the OCS?

Answer. The increase in FY 1982 will be primarily oriented to increasing the efficiency of the available inspection force by providing additional air transportation, i.e., fixed wing and helicopters, so as to reduce the travel time to and from remote inspection sites. A second aspect is to provide additional effort in the processing of the increased number of Applications for Permits to Drill which are being received.

The USGS has a major role in assuring that the government receives fair market value for tracts leased in NPRA. As part of the streamlining of leasing procedures that is mandated by the policies of the current administration a polciy decision has been made that, although a thorough geological analysis will be made of all tracts offered for sale, detailed discounted cash flow analyses will be conducted only on those tracts receiving less than three bids. This will include the interpretation of

geophysical data acquired from companies operating on NPRA under permits issued by the Bureau of Land Management. The competition inherent in a tract receiving three or more bids indicates that fair market value has been achieved, if the bids are not anomalously low. A similar streamlining of leasing procedures is under consideration for the OSC leasing process.

Question. How much oil and gas is produced onshore of Federal and Indian lands?

- o How many outstanding leases are there?
- o Of those leases and of the production, how much was leased on a competitive basis?
- o If more land were leased on a competitive basis than currently is done, would that increase or decrease your workload? How?

Answer. The latest complete production data available is for year 1980. Therefore, the responses are related to that time period.

As of September 30, 1980, there were 116,101 Federal land and 14,249 Indian oil and gas leases in effect.

During FY 1980, 151 million barrels of oil and 1,049 billion cubic feet of gas was produced from Federal leases and 22.5 million barrels of oil and 116 billion cubic feet of gas was produced from Indian leases.

All Indian leases are competitive and, therefore, all Indian production is from competitive leases. Based on the percentage of production from competitive Federal leases in 1979, we estimate the percentage of such production in 1980 to be 32.1 million barrels of oil and 3.8 billion cubic feet of gas. During FY 1979, 313 competitive Federal leases were issued embracing 62,447 acres.

More competitive leasing would result in more work for GS. GS cooperates with BLM in tract nomination, preparing the notices of competitive lease offering, and checking land status. Once the notice is complete, GS is solely responsible for establishing the value of the tracts to assure a fair market return is received when the tracts are bid upon.

Question. Please explain exactly what would be done under your Alaska lands oil and gas evaluation (GS-199 and 200) which is requested both as a supplemental in FY 1981 and as an increase above the supplemental in 1982?

- o Please describe how your activity ties in with the mineral resource survey activities of other parts of the Geological Survey in these same areas.
- o How much of the work done here and in the mineral resource surveys will be field work versus evaluations of existing data?
- o What results are expected of this work and in what timeframe?
- o How long is this work expected to continue?

The supplemental justification indicates that one goal of your activity is the establishment of an onshore leasing program in one or more of the areas south of the Brooks range which are currently designated for leasing suitability analysis.

- o What is the timing involved in doing this analysis and deciding on the establishment of a leasing program?

Answer. The Alaska Lands oil and gas evaluation activities will not tie directly to the mineral resource activity surveys. The mineral resource surveys will be primarily focusing on priority areas for critical and strategic minerals. However, any information developed as a result of the mineral resource surveys such as presence of oil seeps, structural information developed (such as anticlines), potential source of hot beds noted in outcrops, etc. will be integrated into the oil and gas evaluation activities.

Very little of the oil and gas evaluation work will involve field work except where necessary to inspect operations conducted under industry exploration permits or leases or where a question can quickly be resolved by a limited field survey. No formal field mapping projects are planned. The evaluation and decisions will be made primarily on evaluation of existing data.

Conversely, much of the work done in the mineral resource surveys will be field work (mapping, geochemical sampling, etc.).

The results of the evaluation for the Arctic National Wildlife Refuge Coastal Plan will consist of exploration regulations and an accompanying EIS on exploratory activities, an estimate of the oil and gas potential, and an overall report to Congress, outlined in Section 1002(h), including recommendations with respect to whether further exploration for, and the development and production of, oil and gas within the coastal plain should be permitted. The exploration regulations and EIS are to be prepared in 1982 and the report to Congress by December 1985.

The evaluation of the Federal lands (about 5 million acres) between NPRA and the Arctic ANWLP will result in recommendations to BLM on the areas which have the better potential for oil and gas, the conditions under which exploration should take place and the terms for possible leasing. BLM is planning, if funding and other priorities permit, to complete the study required by Section 1001 by 1985.

The results of the non-North Slope Federal lands evaluation (Section 1008) will consist of designation of favorable petroleum geological provinces, refining the boundaries of the provinces from the results of industry geological, geophysical, and other assessment activities, establishing operating regulations for industry activities under lease, evaluation of lands proposed for sale under competitive bid, etc. The "favorable" areas will be initially defined during 1981, and the other activities will be conducted so that leasing can take place by at least 1983.

The summary results of this work will be the initiation and maintenance of a permanent, ongoing oil and gas leasing system for all leasable Federal lands

in Alaska exclusive of NPRA. It is the policy of the Secretary to expedite leasing. Although we do not yet have a timeframe for opening each area for leasing, it is assumed that we are on a fast track, and that the program will be maintained over several years as oil and gas leasing and development occurs in Alaska.

Question. In your coal program justifications (GS-202) you state that workload for supervision of coal mining operations has increased due to new responsibilities under the Federal Coal Leasing Amendments Act (FCLAA).

o Please explain what those increased responsibilities are.

Answer. The responsibilities of the Geological Survey (GS) under the FCLAA amendments to the Mineral Lands Leasing Act (MLA) have been expanded greatly. Increased post-lease activities include: (1) analyzing and approving Logical Mining Units (LMU's); (2) monitoring diligence and continued operations; (3) reviewing and approving or rejecting requests for royalty reductions; and (4) the increased engineering input into the multitude of prelease activities including tract delineation for competitive sales, exchanges, and unsuitability petitions.

Coal development has been rapidly increasing on Federal and Indian lands. Since 1972, coal production has increased 500 percent and the number of producing leases has doubled. Consequently, the standard responsibilities of the GS under the MLA, prior to enactment of the Surface Mining Control and Reclamation Act (SMCRA) and the recent MLA amendments, have increased accordingly for such actions as monitoring of production for royalties and prevention of coal wastage.

The GS requires one inspection per quarter for these MLA responsibilities. This is a conservative requirement when compared to similar regulatory inspections carried out under the SMCRA on a monthly basis. Under GS and Office of Surface Mining (OSM) regulations, the GS maintains total responsibility for exploration on leased and unleased Federal coal outside of the immediate area of mining. Supervising activities under exploration licenses is an important new program function.

Coordination under the MLA amendments and SMCRA has also increased GS responsibility and activities for such actions as land exchanges and unsuitability petitions concerning Federal lands. The GS reviews mine plans and is the lessee's contact for all MLA responsibilities.

Question. What is the current operational status of the two active oil shale leases in Colorado?

o When is it expected that production will begin on the leases?

Answer. Rio Blanco Oil Shale Company, using the first experimental modified in situ (MIS) demonstration retort on a Federal lease, produced a total of 1750 barrels of shale oil from tract C-a by the end of February 1981. On the same tract, by May 1981, the second retort should produce 25,000 barrels of shale oil. In May 1981, construction will start on a 4,400 ton-per-day surface Lurgi Retort to be completed in January 1983, which will produce 2,200 barrels per day of shale oil. The shale for the retort will be produced from an open pit.

Tract C-b is leased to Occidental Oil Shale, Inc. and Tenneco. Site development work thus far has cost nearly $200 million, including $70 million in lease bonus bid payments. Annual average development cost of $30 million will increase significantly in calendar year 1983. Shafts are collared for proposed 2,000-foot deep ventilation and retort off-gas operations. Phase I (MIS) retort development has begun, and construction of surface retort train 1 and 2 is initiated, requiring the work force of 2,000. First combined MIS-surface retort shale oil production is expected in late 1985 at 7,000 to 10,000 barrels per day, increasing rapidly to 94,400 barrels per day by 1990.

Question. Your supplemental justifications for a $1.4 million increase in oil shale programs state that the program will include evaluation of development proposals and regulation of operations.

- Is this increased activity on the two currently active leases or expected activity on new leases?
- When do (you) expect to receive proposals for new lease sites and when would you expect (them) to be let?
- Will a new environmental impact statement be needed prior to implementing a new prototype lease program?
- Please explain how the acceleration of oil shale leasing will lessen the USGS requirements in FY 1982 by $1 million as is stated in the revised budget. Why wouldn't they increase?

Answer. The increased activity will encompass both continuing operations on the two active leases, as well as anticipated activities on possibly two additional leases.

A Secretarial decision supporting either an extended prototype leasing program or a permanent leasing program would prompt a call for tract nominations. The response to a call for nominations would indicate industry's interest in specific areas subject to lease. The adoption of either type of leasing program would support some leasing as early as FY 1983.

An extended prototype leasing program would be accomplished following a site-specific environmental analysis and management framework plan amendment and supplemental to the prototype Environmental Impact Statement (EIS) all of which will be accomplished by the Bureau of Land Management (BLM) as "lead agency" with advisory support provided by the Geological Survey. A permanent leasing program would require support for a programmatic EIS followed by a Resource Management Plan and EIS. BLM would serve as "lead agency" for the programmatic EIS, with support from other agencies and contractors. The servicing agencies would have to have budgeted support funds.

The acceleration of oil shale leasing under the FY 1982 budget would emphasize development based only upon existing technologies. These

technologies were assessed as part of the existing prototype program. New or different technologies are not expected over the near term, that is, before the mid-1980's.

Question. Please explain the need for a $500,000 increase in uranium leases.

- Is this related to increased leasing activity or better supervision of current leases?

Answer. There are a number of emerging hydrologic, reclamation, and recovery problems that the Uranium program must address. The disposition of waste and ore piles, disposition of high walls/slope stability, flash flooding/surface water quality, soil replacement/revegetation, subsidence, ground water hydrology/geochemistry, air quality/radon emissions and dust, and socioeconomic factors have created an intense public and tribal awareness. The requested $500,000 will begin to address the serious reclamation problems that exist now and will continue in the future as uranium development accelerates.

This effort will result in more efficient supervision of existing conventional mining operations (excavation methods).

The $500,000 increase is needed for two reasons:

- Better supervision of existing conventional mining operations (excavation methods).

- Supervision of newly proposed technology, i.e., in situ leaching at greater depths than previously attempted. This will require review and approval of more complex plans and constant monitoring of operations.

Question. Please provide for the record a breakdown of the production data and for various nonenergy minerals on Federal lands.

Answer.

MINING OPERATIONS
PRODUCTS AND LANDS
CALENDAR YEAR 1980

Product & Land Category	PRODUCTION TONS	PRODUCTION VALUE ($)	ROYALTY VALUE ($)
COPPER	15,290	6,026,653	301,333
ACQUIRED	2,416	3,488,321	431,760
INDIAN	17,706	9,514,974	733,093
TOTAL			
FLUORSPAR			
ACQUIRED	7,275	1,114,051	50,132
LEAD			
ACQUIRED	429,953	222,052,333	11,102,646
LIMESTONE			
ACQUIRED	1,890	14,515	726
PHOSPHATE			
PUBLIC	5,027,582	41,640,737	2,503,347
ACQUIRED	189,391	2,249,442	113,749
INDIAN	1,460,590	14,548,959	1,454,896
TOTAL	6,677,563	58,639,138	4,071,992
POTASH			
PUBLIC	3,948,370	262,587,277	11,363,036
SAND-GRAVEL			
PUBLIC	285,736	483,700	32,651
INDIAN	1,863,100	2,603,339	473,448
TOTAL	2,148,836	3,087,039	506,099
SODIUM			
PUBLIC	2,834,673	223,346,164	11,074,198
ZINC			
ACQUIRED	101,949	23,798,041	1,189,482
OTHER			
PUBLIC	19,769	354,334	44,625
ACQUIRED	85,656	484,039	30,868
INDIAN	211,032	731,575	51,385
TOTAL	316,457	1,569,948	126,878
TOTAL ALL PRODUCTS	16,512,880	805,623,480	40,218,273

Production from Federal and Indian leases account for about 14, 84, 54, and 50 percent of the total U.S. production of phosphate, potash, sodium, and lead, respectively.

Question. Your workload data for nonenergy minerals (GS-206) indicates a doubling of inspection of mines with the same number of personnel.

- How were you able to do this?

Answer. The number of inspections of active nonenergy mines indicated for FY 1982 is an error. Instead of the indicated 2,010 inspections, it should be 1,210.

Question. Please explain how you will continue the old system and overlap it with the new royalty management system.

Answer. A detailed carefully conceived Installation Plan Report has been produced, dated December 15, 1980, prepared by the Improved Royalty Management Project Team, which describes the strategy, schedule, and impact of the systems conversion. Accounts will be converted on a U.S. Geological Survey office-by-office basis, requiring a high degree of cooperation and coordination with industry. Page V-3 of the Installation Plan (copy enclosed) shows a summary of the conversion schedule. The old system, per this schedule, finally would have been abandoned in December 1982 upon the completion of the conversion of all Tulsa, Oklahoma, accounts. However, recent events involving contracts procedure have caused us to delay the entire conversion process by about 6 months.

Question. Please explain the components of the workload of this system and the importance of each, and how the new system will address them in a better manner than the old.

Answer. Due to the accelerated rate of growth of the domestic energy industry, the current U.S. Geological Survey Royalty Collection System has become critically outmoded. It has become inadequate primarily due to the following workload factors:

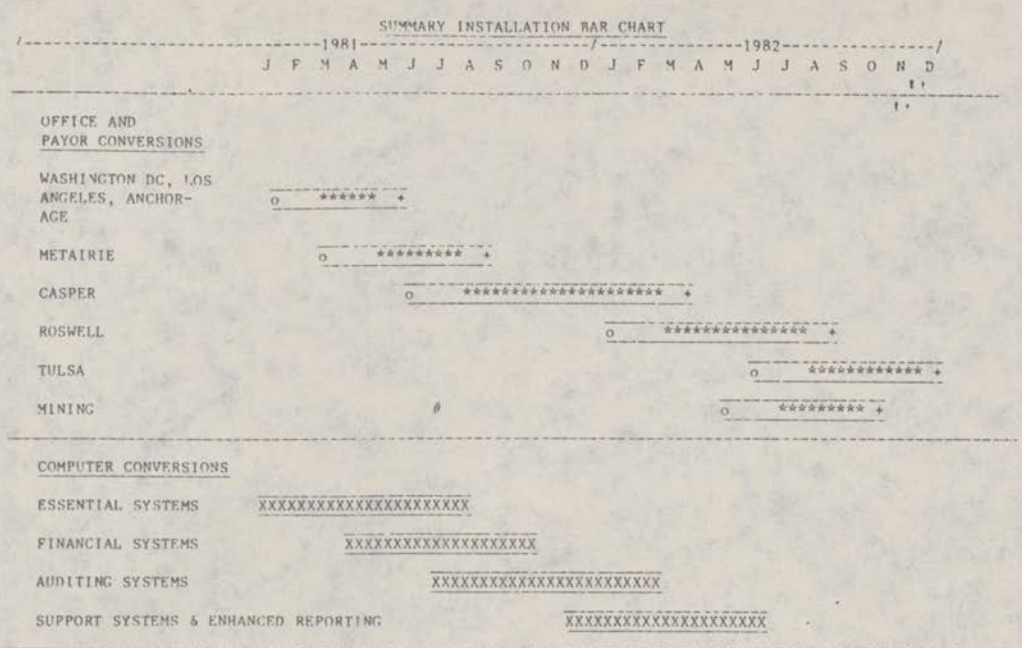
- An ever increasing number of producing leases (from 11,127 in 1968 to 17,800+ in 1980);
- Increased fractionalization of ownership and reporting and paying interests within these leases;
- Increased complexity in reporting lease revenues as a result of complicated marketing agreements and pricing regulations, and
- A staggering increase in the royalties earned on Federal and Indian leases (from $480 million in 1971 to an estimated $4.0 billion in 1981).

The new Improved Royalty Collection System will provide the following benefits:

- Simplified Regulations and Paying Instructions. New system will reduce the reporting burden of industry. An extensive but easy-to-read Payor Handbook is being developed, and training seminars are being held to assist industry in reporting and paying royalties.

EXHIBIT J

SUMMARY INSTALLATION BAR CHART



o Notify payers to begin AID assignment

* AID assignment and conversion

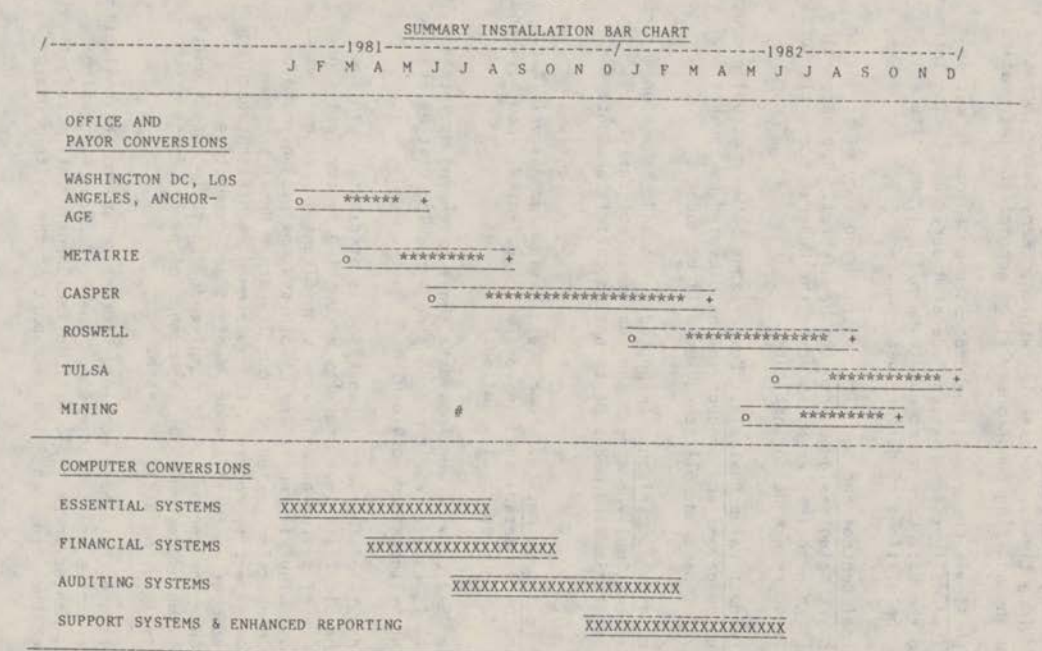
+ Reporting converted to Lakewood

Current mining royalty program to be centralized into Lakewood Accounting Center

X Computer system conversion segment in progress.

EXHIBIT 2

SUMMARY INSTALLATION BAR CHART



o Notify payers to begin AID assignment

* AID assignment and conversion

+ Reporting converted to Lakewood

Current mining royalty program to be centralized into Lakewood Accounting Center

X Computer system conversion segment in progress.

- Automated Recordkeeping. A centralized computerized accounting data center is being established where information will be updated and maintained in a timely, accessible fashion. Many labor-intensive accounting and auditing functions will be accomplished automatically.

- Faster Cash Flow. Checks will be processed by automatic machines and deposited daily to the Denver Federal Reserve Bank. The interest savings to the U.S. Government due to more timely deposits will amount in the millions of dollars per year.

- Good Internal Control and Security. Strict and secure accounting procedures are being designed into the new system. The accounting principles and practices recommended by the General Accounting Office and U.S. Treasury are being instituted.

- Accurate Product Value Analysis. Comparisons between actual product values used by payors and product values dictated by the National Gas Policy Act or crude oil schedules will be made.

- Production/Sales Comparisons. Reported sales and production reports will be systematically compared and subjected to statistical tests and other criteria as a means of targeting certain accounts for audit.

- External, Follow-up Audits. Four field Review and Analysis Audit Offices are being established to verify the validity, accuracy, and propriety of reported royalty collections.

Question. On page GS-210, your workload data shows a tremendous increase in output in FY 1982. Is this a result of reducing a backlog that exists, or is it brought about by increased workload?

Answer. The rapid rate of increase in workload is attributable to the conversion from the old lease-level royalty accounting system to the new payor or sublease-level system as well as a significant increase in workload related to crude oil Windfall Profit Tax. Both systems will have to be maintained over a conversion period of about 2 years. Until the conversion is accomplished, we expect to continue to experience significant backlogs in performing lease account reconciliations, audits, and product value determinations. Once the conversion is completed, growth in output units will tend to approximate the growth in the number of payors, many of whom share in paying royalties on a single lease.

It should be understood that these workload factors relate to the collection and accounting for monies only. Factors for the Production Accounting System, to be implemented in FY 1983, will be included in future budget justifications once they are identified as a part of the systems design effort.

Question. The price of oil has now been deregulated and the price of natural gas will be deregulated by 1985. What effect will deregulation have on your royalty management program?

Answer. Deregulation will cause a significant increase in workload in product valuation in ensuring that government and Indian lessors receive a fair market revenue for the resources removed from Federal and Indian lands. It is estimated that annual royalty revenues will increase by $11.1 billion from 1980 as a result of deregulation of gas in 1985.

Question. Your supplemental justification includes several legislative changes with respect to this Windfall Profits Tax. What is the status of these changes, and what would be the effect of their not taking place?

Answer. The Geological Survey's supplemental justification includes an amendment of the Crude Oil Windfall Profit Tax Act of 1980 that would exempt Federal royalty oil from the tax. More specifically, our proposal would add Federal royalty oil to the definition of "qualified governmental interest" in the Act for purposes of including royalty from Federal leases in the definition of "exempt oil." Also, the bill would provide for certification of tertiary recovery projects as qualifying for the tier 3 oil tax rate on State and private lands by the Department of Energy or other appropriate agency rather than the Geological Survey.

Currently, the Act imposes an excise tax on the increased revenues that result from decontrol of domestic crude oil prices. The tax is paid by the producer of the crude oil and collected by the first purchaser. All domestic oil is taxed except "exempt oil."

Besides the tax on Federal royalty oil, the Act defines "jurisdictional Agency" as the United States Geological Survey (GS) in the case of an application involving a tertiary recovery project on lands not under Federal jurisdiction if the Governor of a State fails to designate a State certifying agency within 180 days. Such applications are filed for certification for tier 3 tax treatment of incremental tertiary oil.

Our draft bill and rationale, therefore, currently are being reviewed in the Office of the Secretary of the Interior. Without the above described changes in the law, the GS would need an additional 100 people to carry out the responsibilities in connection with the tax. We have not yet determined how much additional personnel would be required for the certification responsibility, inasmuch as tertiary recovery projects on any large scale on State and private lands are only beginning to be constructed.

Specifically, as to the effect of the tax on Federal royalty oil, the new requirements have very substantially increased the workload for the GS's royalty management program in requiring the GS to: (1) obtain tier breakdowns for each property (lease, unitization, and communitization agreement); (2) compute and pay the tax if custody transfer of the oil is off the leasehold; and (3) file quarterly and annual tax returns on the Federal royalty income on oil from producing oil and gas leases under Internal Revenue Service regulations. The GS is required to submit reports to DOE on oil and gas reserves on Form EIA-23.

EARTH SCIENCE APPLICATIONS

Question. What is the status of the transfer of Landsat processing to the National Oceanic and Atmospheric Administration (NOAA)?

- Once this function is transferred, what will be the function of the Sioux Falls Data Center?

Answer. The most recent Administration budget (March 10, 1981) does not provide funding for the transfer of Landsat data processing functions from EDC to NOAA at the Goddard Space Flight Center. Current plans are for EDC to continue this activity under suitable agreements with NOAA at least through 1988.

Following the ultimate transfer of all Landsat data handling and processing to the private sector in the late 1980's, the EROS Data Center will continue to be operated by Interior to support the specific information needs and requirements of Interior resource managers and scientists. These include the archiving and processing of Interior-held aircraft data, applications research and development, analytical services, training and technical assistance, and development of systems for handling, integrating, and accessing digital spacial data sets.

Question. What is your environmental impact statement workload in FY 1982 compared to other years?

- Is this a result of reducing a backlog that exists or is it brought about by increased workload?

Answer. A. The base program EIS workload expected for FY 1982 will involve the Survey in approximately 44 EIS's. This effort includes: (a) the preparation of an estimated 21 EIS's either in a lead, joint-lead, or cooperative agency capacity on energy related and mineral development projects, and ; (b) preparation of an estimated 23 EIS's with BLM on coal leasing projects.

A comparison of the projected FY 1982 EIS workload with those of previous years is provided below:

	FY 1980	FY 1981	FY 1982
EIS preparation (General)	20	21	21
EIS preparation (BLM-coal related)	--	21	23
Total Base Program EIS Workload	20	42	44

B. The training program is a product of the needs of the Survey to comply with NEPA and companion legislation. Preparation of training aids, course outlines, briefing material, decisionmaking tools, seminars, workshops, and needs assessment will continue to build on the base established in 1981.

NEPA orientation training for project approving officials will continue. One to three workshops are planned to familiarize attendees with the Survey NEPA Handbooks on internal initiatives, and interagency participation, as well as categorical exclusion review (CER) procedures.

Training in writing environmental documents for use in the decisionmaking process will be done commensurate with the Survey's role in leading or assisting the preparation of environmental assessments (EA) and EIS's. One or two courses are planned for preparation of EIS-EA's. If the need arises, a special course(s) on EA's or CER's alone will be given.

Other NEPA compliance training aids, seminars, and workshops will be prepared and developed as needed or requested. Probable areas are use of the USGS Land Resources Sourcebook, including use of Multics (1-3 seminars); integrative assessment techniques (1 seminar); Survey compliance requirements related to Cultural Resource Preservation, Endangered Species Protection; and Wilderness Act (2 to 4 seminars).

General assistance will be given to Division training officers for NEPA-related requirements within operational areas, e.g., geologic or hydrologic field data collection.

Question. What are the major activities in FY 1981 and 1982 of your Land Resource Data Applications Program (GS-220-222)?

Answer. Major activities conducted by LRDA in FY 1981 and 1982 fall into three primary categories--Multidisciplinary Earth-sciences applications studies; Planning assistance and education; and Hazards information and preparedness. These activities include:

Multidisciplinary Earth-sciences applications studies
Provide support for preparation of derivative, interpretive products addressing resource planning and management information needs based on research and data acquisition completed in regular Water Resources and Geologic Division mission programs. During 1981 we are participating in 18 projects, and planning on supporting 20 in FY 1982.

Two examples of these products are:

1. Preparation of liquefaction (a type of ground failure) potential maps of the Monterey Bay, California, area. These types of maps have been adopted by local planning authorities for zoning and building codes.

2. Preparation of a non-technical version of an existing publication with an assessment of water quality in coal producing areas in Ohio. This publication will address the effect of reclamation of abandoned coal mines on local water quality in a manner readily understandable to public decisionmakers.

Initiating capability-building projects (using "seed money") with State Geological Surveys or other agencies to stimulate development of earth-sciences applications activities at State and local levels. In FY 1981, projects will be funded in Michigan, Maryland, New York, Tennessee, and with the Great Lakes Basin Commission. During FY 1982, projects will be initiated in six areas, including Idaho.

Planning assistance and education

LRDA conducts workshops in cooperation with State chapters of the American Planning Association and State and local agencies and universities. These workshops are primarily for local planners and decisionmaking officials and are designed to increase their awareness of the availability of earth-science information and its uses in helping to resolve land use planning, resource development, and environmental problems. During FY 1981, seven workshops will be presented in Seattle, Atlanta, Houston, Orlando, St. Louis, Columbus, and Minneapolis. During FY 1982, eight workshops are planned, including--Indianapolis, Helena, and Kansas City.

Implement cooperative projects with State and local agencies, academic institutions, and professional associations to improve earth-science information availability and delivery. During both FY 1981 and 1982, four projects each year will be implemented. Examples of this effort are: aid in developing the Illinois Coal Basin planning assistance reference system and workshops designed to assist State and local planners and managers in dealing with the impacts of coal development; present research and planning workshops in hazardous waste treatment and disposal siting.

Hazards information and preparedness

Issue hazard warnings to Federal, State, and local officials documenting geologic-related hazards identified through GS program activities. Based on our current knowledge, we anticipate issuing ten notifications in 1981 and ten in 1982.

Develop and distribute brochures, pamphlets, and audiovisual presentations to increase the awareness of public officials and citizens of geologic-related hazards and potential measures for their mitigation. We anticipate producing three of these specialized products in 1981 and approximately the same number in 1982.

Planning assistance and education

LRDA conducts workshops in cooperation with State chapters of the American Planning Association and State and local agencies and universities. These workshops are primarily for local planners and decisionmaking officials and are designed to increase their awareness of the availability of earth-science information and its uses in helping to resolve land use planning, resource development, and environmental problems. During FY 1981, seven workshops will be presented in Seattle, Atlanta, Houston, Orlando, St. Louis, Columbus, and Minneapolis. During FY 1982, eight workshops are planned, including--Indianapolis, Helena, and Kansas City.

Implement cooperative projects with State and local agencies, academic institutions, and professional associations to improve earth-science information availability and delivery. During both FY 1981 and 1982, four projects each year will be implemented. Examples of this effort are: aid in developing the Illinois Coal Basin planning assistance reference system and workshops designed to assist State and local planners and managers in dealing with the impacts of coal development; present research and planning workshops in hazardous waste treatment and disposal siting.

Hazards information and preparedness

Issue hazard warnings to Federal, State, and local officials documenting geologic-related hazards identified through GS program activities. Based on our current knowledge, we anticipate issuing ten notifications in 1981 and ten in 1982.

Develop and distribute brochures, pamphlets, and audiovisual presentations to increase the awareness of public officials and citizens of geologic-related hazards and potential measures for their mitigation. We anticipate producing three of these specialized products in 1981 and approximately the same number in 1982.

Question. Please provide for the record a dollar breakout for fiscal year 1981 and 1982 of the total general and administrative expenses (GS-235) in the various support areas, such as Equal Employment Opportunity, Financial Management, Personnel Management, and other types of services. Also include the total manpower required in those areas for fiscal year 1981 and 1982.

Answer.

(Dollars in thousands)

Area	FY 1981 Funding	FY 1981 FTP	FY 1982 Funding	FY 1982 FTP
Executive Direction	$ 4,934	48	$ 5,511	48
Employee Compensation Payment	890	--	882	--
Equal Employment Opportunity	821	21	850	21
Financial Management	2,764	78	3,200	78
Personnel Management	4,922	129	5,250	129
Procurement Services	4,557	114	4,900	114
Management Analysis	1,041	20	1,171	20
Data Base Administration	215	4	240	4
Office Servics	3,796	103	3,990	103
Total	23,940	517	25,994	517

Question. Please show what your actual travel expenditures are estimated to be in fiscal years 1980, 1981, and 1982 and explain the rationale for any increases involved over the years. What effect will the reduction of travel in the revised 1982 budget have on programs?

Answer.

Source of Funding	Actual FY 1980	Estimate FY 1981	Estimate FY 1982
	(Dollars in thousans)		
Direct Funding - SIR	$12,363	$16,925	$19,987
- NPRA	151	300	50
- Digital Cartography	--	--	193
Total Direct Funding	12,514	17,255	20,230
Reimbursements	3,613	6,097	6,721
Total - USGS	16,127	23,322	26,951
Less: Reductions	-1,392a/	-2,332b/	-1,517c/
TOTAL Available	14,735	20,990	25,434

a/ FY 1980 reduction mandated by Section 112 of House Joint Resolution 412 (P.L. 96-86) which imposed travel reductions on all Executive Agencies.

b/ FY 1981 reduction per OMB Bulletin 81-7, dated January 24, 1981, subject: Fiscal Year 1981 Travel Reductions.

c/ FY 1982 reduction contained in the FY 1982 proposed amendment.

Total obligations for travel of persons in FY 1980 were $14,735, or $3,780 less than the $18,512 obligated in FY 1979. The reduction in FY 1980 caused extreme hardships in accomplishing mission goals. In many instances field work was either severly restricted or cancelled in an effort to live within the statutory limitations imposed by P.L. 96-86.

The increased amount available for FY 1981 represents the additional requirement necessary to cover increased program activities, common carrier costs, increases in per diem and other inflationary costs. Even at this increaed level it has become apparent that even more restrictive guidelines will have to be imposed in order that the highest priority field oriented mission goals can be accomplished. Increases in FY 982 are to cover estimated increased program activity in energy related activities and for inflationary costs.

Travel is a very critical and continuing major cost element in conducting the Survey's program a tivities. Without substantial travel many of the essential programs may not be accomplished. This is especially true for national mapping, geologic and hydrologic surveys and investigations, and oil and gas field inspection work.

Question. You have installed a solar heating system at your EROS center in Sioux Falls, South Dakota, and estimate its savings at $100,000. (GS-239)

- What was the cost of this system and how many gallons a month of fuel does it save?

Answer. The original oil-fired system for heating water has been replaced with a solar energy system and two electrical water heaters. The cost was $576,600. The modification to existing hot water system cost $500,000, and the conversion from oil-fired burners to electric boilers cost $76,600. Approximately 8,000 gallons of oil will be saved each month.

Question. In fiscal year 1981 and 1982 you show small amonts to survey your facilities for conservation activities. (GS-240).

- If such activities are undertaken, where will the funds come from?

To survey our facilities for conservation activities, $70,000 has been earmarked in FY 1981 and $187,000 is earmarked for FY 1982. Funds will come from program activities that occupy the facilities surveyed.

Mr. YATES. In the meantime we will consider everything you have told us about streamlining, the new, streamlined Geological Survey. I guess you have to go on a diet, don't you?

Mr. FREDERICK. A bit of a diet, except that we still are in an area where we have an increase between fiscal year 1981 and 82 for our total program.

Mr. YATES. You still have a little fat upon which you can fall back.

Mr. FREDERICK. No, sir, not fat. We still have some moderate growth.

Mr. YATES. That is all muscle?

Mr. FREDERICK. All muscle, sir.

Mr. YATES. Okay.

Mr. LOEFFLER. This has been an interesting hearing, and I have enjoyed being with the chairman as well as the witnesses but I assume we must be very careful when we enter into final deliberations on this particular budget request, because streamlining has become a very pronounced word here in the course of this hearing. Probably the logo at USGS is going to need wings on it.

Mr. YATES. The new logo will probably be a skeleton, I would think.

Thank you very much, gentlemen, ladies and doctors.

WEDNESDAY, MARCH 4, 1981.

BUREAU OF MINES

WITNESSES

DR. HERMANN ENZER, ACTING DIRECTOR
CHARLES B. KENAHAN, DEPUTY DIRECTOR, MINERALS RESEARCH
DR. THOMAS A. HENRIE, CHIEF SCIENTIST
DR. JOHN D. MORGAN, JR., CHIEF STAFF OFFICER
WILLIAM D. OYLER, BUDGET OFFICER
JOSEPH W. GORRELL, DEPUTY DIRECTOR, OFFICE OF BUDGET

OPENING REMARKS

Mr. YATES. You are the Acting Director, Dr. Enzer?

Dr. ENZER. Yes, sir.

Mr. YATES. You have to be confirmed by the Senate?

Dr. ENZER. I am just acting, Mr. Chairman.

Mr. YATES. All right. Mr. Reporter, show the hearing as coming to order.

We are pleased this morning to hear the testimony in support of the Carter budget for the Bureau of Mines.

Appearing in support of that budget we have Dr. Hermann Enzer, the Acting Director, Bureau of Mines; Mr. Kenahan, Deputy Director, Minerals Research; Dr. Henrie, the Chief Scientist; Dr. John D. Morgan, Jr., the Chief Staff Officer. How long have you been testifying, Dr. Morgan? Has it been 90 years?

Dr. MORGAN. At least 35, sir. I am still surviving.

Mr. YATES. We have never been too tough on you.

We have Mr. Oyler, Budget Officer, and Mr. Gorrell, Deputy Director.

OPENING STATEMENT

Mr. YATES. Dr. Enzer's biography will go into the record at this point as well as his statement.

[The statement and biography follow:]

Statement of
Hermann Enzer
Acting Director, Bureau of Mines
Department of the Interior
House Subcommittee on Appropriations
on the Department of the Interior and Related Agencies
March 4, 1981

Mr. Chairman and Members of the Committee:

We are here today to discuss with you the Bureau of Mines budget request for 1982.

If there is a theme to our budget, it is a greater emphasis on strategic and critical minerals than in previous years. You provided the initial impetus, Mr. Chairman, a year ago at our budget hearing, by directing the Bureau of Mines to do disruption studies for some of our most critical minerals; evaluate the technological substitution potential for several important minerals; and accelerate our supply assessment capability for platinum. We are doing all these things. In particular, we are participating with other departments and agencies in an interagency effort to examine our options which would put us in a better position in dealing with a disruption in supply of critical minerals from southern Africa should such a disruption occur. We hope to have recommendations ready for the President this year.

A few months ago Congress expressed its concern over the availability of minerals and materials by passing the National Materials and Minerals Policy, Research and Development Act. This Act requires that the President, the Secretary of the Interior, and other Department Secretaries improve the coordination and information base of the Federal Government, increase the level of R&D efforts on materials and minerals, and report back to Congress in October of this year. Specifically, the Secretary of the Interior is to initiate actions to improve the capacity of the Bureau of Mines to assess international minerals supplies; increase the level of mining and metallurgical research by the Bureau of Mines in critical and strategic minerals; and improve the availability and analysis of minerals data in Federal land use decisionmaking.

Also, at the end of last year, the President designated the Bureau of Mines as the focal agency in the Federal Government for minerals data collection and analysis, and directed the Secretary of the Interior to convene through the Bureau of Mines an interagency committee which is to coordinate and improve the minerals information systems of the Federal Government.

Finally, we are developing in the Department of the Interior a critical minerals index which will be used as an early warning system. In this index we will assess both the risks of potential disruptions for critical minerals and the impact of disruptions on the U.S. economy. We plan to perform such an assessment at least once a year in cooperation with minerals experts of other agencies, and recommend measures through the Secretary to the White House which will improve our state of preparedness with respect to critical minerals.

Mr. Chairman, the 1982 budget request for the Bureau of Mines has taken account of these recent events, and I wish to highlight the programs included in our request for you at this time.

Highlights of 1982 Budget

The budget before you was submitted by the previous Administration. As you know, the current Administration is in the process of reviewing the previous Administration's budget decisions. This review is now being completed and the results will be made public in the President's budget message to Congress scheduled for March 10, 1981. At this time I am prepared to discuss with you the general thrust of our programs with special reference to the theme of strategic and critical minerals.

Research Programs

Our request for research programs provides funding for Minerals Health and Safety Technology, Minerals Environmental Technology, and Mineral Resources Technology.

The request for the Minerals Health and Safety Technology program, which is authorized by the Federal Mine Safety and Health Act, will allow continuation of efforts to improve health and safety conditions for coal and other types of miners.

Funding for the Minerals Environmental Technology program will provide technology needed to reduce the undesirable environmental impacts associated with mining and mineral processing.

In the Mineral Resources Technology program, we are developing technological solutions to reduce requirements for critical and strategic minerals through conservation, substitution, and increased recovery of minerals and metals from domestic resources. This is one of two areas for which we are asking for increased funds to advance the state of minerals science and technology, develop some low-grade domestic resources, and work toward the development of materials which will be needed to withstand the extremes in temperature, pressure, and corrosion in synthetic fuel facilities.

To give you an idea of the type of projects our research programs are engaged in, I would like to mention some awards the Bureau has received in the past year. Each year, the Industrial Research and Development magazine honors researchers, innovators, and developers by selecting 100 of the most significant new "products" developed during the year. The winners are selected on the basis of their importance, uniqueness, and usefulness from a technical standpoint. In 1980, the Bureau of Mines received four of these awards for the following developments:

- A two stage oxygen breathing system which allows the miner to carry a lightweight 10-minute unit that provides ample time to reach the central storage area where a 60-minute unit and the smaller unit are coupled together providing an uninterrupted supply of oxygen.

- A lightweight, inexpensive nitrogen dioxide device for accurately measuring a worker's average exposure to this gas produced by diesel engines and in residual gases from blasting.

- A cement-grouted roof bolt system that uses low-cost gypsum cement and yields superior protection from roof falls in underground mines.

- A hydraulic borehole mining system that uses a high pressure water jet to erode ore and a slurry pump to bring the fragmented ore to the surface. It is a relatively low-cost method of mining certain small, low-grade deposits without using men underground.

Minerals Information and Analysis Programs

Included in our request for information and analysis programs is the Data Collection and Analysis program and the Land Assessments program.

The Data Collection and Analysis program collects and makes available information on approximately 100 nonfuel minerals. Using this information, analyses are performed to provide input to policymakers, including some assessments of international minerals supplies. This is one of the areas highlighted in the National Materials and Minerals Policy, Research and Development Act of 1980. This is the second area where we are asking for an increase to carry out some of the tasks I mentioned to you before.

The Land Assessments program provides mineral information for areas being considered as possible wilderness sites included in legislation or the Roadless Area Review and Evaluation (RARE II) being conducted by the U.S. Forest Service.

Conclusion

This then summarizes the major programs for the Bureau of Mines. I would be happy to answer any questions that you might have.

BIOGRAPHICAL SKETCH
OF
DR. HERMANN ENZER
ACTING DIRECTOR, BUREAU OF MINES
U.S. DEPARTMENT OF THE INTERIOR

Dr. Hermann Enzer, an economist who has specialized in mineral policy analysis since 1973, has been serving as Acting Director of the Bureau of Mines since January 30, 1981. His official, Senior Executive Service, position in the Bureau is Deputy Director for Minerals Information and Analysis.

Dr. Enzer received a bachelor's degree in economics, summa cum laude, from Boston University in 1959, a master's degree from that school in 1960, and a Ph.D. from Harvard in 1964.

From 1963 to 1973, he was a Professor of Economics and Statistics at the Air Force Institute of Technology of Dayton, Ohio, where he taught graduate courses in economics, conducted research, and provided consulting expertise to the Air Force and the Department of Defense.

Dr. Enzer joined the Interior Department in 1973 as an economist with the Office of Policy Analysis, transferring in the following year to the newly created Office of Minerals Policy and Research Analysis (OMPRA). He conducted studies including an analysis of data requirements for geophysical exploration of the Outer Continental Shelf, and an evaluation of oil shale leasing alternatives. In 1975 he became Director of the OMPRA.

The author of many publications, and the recipient of the U.S. Air Force Meritorious Civil Service Award, Dr. Enzer is a member of the American Economic Association, Econometric Society, and the Society for Industrial and Applied Mathematics.

Mr. YATES. You can tell us nothing about the Reagan budget, can you? Or are you allowed to?

Dr. ENZER. Not too much, Mr. Chairman.

Mr. YATES. You don't really know what the allowances will be, anyway, do you?

Dr. ENZER. We do not.

Mr. YATES. We will still go ahead in the dark and hope that somewhere there is a miner's lamp.

Secretary Watt appeared before the Senate on March 2nd, before the Subcommittee on Science and Transportation.

He says, "I can say the primary research and development direction will be toward production with an increased emphasis on recovery of strategic and critical materials. I have asked the Bureau of Mines to prepare for my review materials regarding improvements in America's mineral data system. The Bureau of Mines will move responsibly and aggressively to provide the technical expertise needed to facilitate both the direction and utilization of minerals."

Are you ready to move responsibly and aggressively?

Dr. ENZER. Yes, sir.

Mr. YATES. What does that mean?

Dr. ENZER. I am not quite sure what the Secretary had in mind.

Mr. YATES. You mean he has not told you?

Dr. ENZER. No, he has not told me.

Mr. YATES. He has not been very aggressive, then, has he? He has not been aggressive and you have not been responsive.

Dr. ENZER. The way it works is that we have told him what we plan to do and are doing. Perhaps he considers this as being aggressive and being responsive.

Mr. YATES. Did he nod his head in approval?

Dr. ENZER. Yes.

Mr. YATES. All right. Tell us what you propose to do.

Dr. ENZER. Very well.

Mr. YATES. We have your statement and it is part of the record. What is it the Secretary wants to do and how are you going to do it?

Dr. ENZER. In the data area?

Mr. YATES. What does he want to do? He wants research and development.

Let's read the statement. He says, "I can say the primary research and development direction will be toward production."

Are you doing that kind of research now?

Dr. ENZER. Yes, we are. In the Carter budget that is before you we are asking for an increase for resources technology, which is this specific area, of about $4 million.

Mr. YATES. With that $4 million he also talks about the emphasis on recovery of strategic and critical materials.

Dr. ENZER. Yes.

Mr. YATES. Which would those be?

Dr. ENZER. He is thinking of cobalt, manganese, chrome.

Mr. YATES. Titanium?

Dr. ENZER. Platinum.

Mr. YATES. Do we have platinum?

Dr. ENZER. Yes, we do. We use platinum as catalysts in refineries.

Mr. YATES. The critical metals we have to import will come later, I imagine.

Dr. ENZER. The ones just mentioned are the major ones.

Mr. YATES. Which we have to import now?

Dr. ENZER. Yes.

Mr. YATES. If we have them, why did we not find them before? What are you going to do now which is different from what you did in the past which will bring these metals into being within our borders?

COBALT PRODUCTION

Dr. ENZER. We have some major deposits in cobalt.

Mr. YATES. "We" meaning who?

Dr. ENZER. The United States. In Idaho there is the Blackbird Mine.

Mr. YATES. Is that privately owned?

Dr. ENZER. It will be developed by Noranda. It is likely that if the present market price is maintained at the level it is right now, which is about $20 a pound, that the mine may be in operation by 1984-1985.

There are indications that the company proposes to produce about three to four million pounds of cobalt, not right at the beginning, but after one or two years. That is about 20 percent of our domestic consumption. This is not an insignificant amount of cobalt which would become available.

Mr. YATES. But that will not become available until 1987?

Dr. ENZER. 1984, 85, 86.

Mr. YATES. Has the government put any money into that?

Dr. ENZER. No.

Mr. YATES. It is totally private?

Dr. ENZER. It is totally private.

Mr. YATES. That is cobalt?

Dr. ENZER. Yes.

Mr. YATES. The reason they have not been doing it up to now is because of lack of market for the cobalt?

Dr. ENZER. There were two reasons. One of them is that the cobalt price over much of the last 10 years has been below $10 a pound. It was uneconomic to produce it at that price.

Secondly, there were some environmental problems which had to be straightened out.

Congress passed a law last year. The primary use of that area in Idaho was designated to be cobalt production subject to all the environmental constraints which have to be observed.

Therefore, as far as this area is concerned the major problems seem to have been taken care of. Again, if the price does not drop significantly we believe that there should be production from that mine.

Mr. YATES. Where do we get cobalt now?

Dr. ENZER. Mostly from Zaire and Zambia.

Mr. YATES. What do they sell it for now?

Dr. ENZER. The producer price is negotiated. It used to be $25. It was that until 10 days ago.

Mr. YATES. A pound?

Dr. ENZER. Yes. They dropped their price to $20 at the beginning of this week. There is quite a bit of cobalt floating around right now in the world market. I guess this is the reason why they dropped their price.

Mr. YATES. If Noranda starts work and starts producing cobalt, what are the possibilities that the world price will come down to make their production uneconomic again?

Do they have a loan guarantee from the Federal Government?

Dr. ENZER. They have nothing yet. One thing we are doing, Mr. Chairman, is this: we are participating in an inter-agency effort which is chaired by the National Security Council. We are examining, among others, the minerals mentioned before.

What we plan to do is come up with recommendations for cobalt first. It is possible that one of the recommendations will be to offer catastrophe insurance to that company by using Title III of the Defense Production Act. This would mean that if the price of cobalt drops below a certain price, which would have to be negotiated, the United States Government might buy up cobalt either for its stockpile or for immediate resale. This could be a guarantee which might be sufficient to encourage this company to go ahead. It would perhaps be enough to get them on a faster time schedule.

IMPORT RELIANCE FOR MINERALS AND METALS

Mr. YATES. By these series of questions I think I anticipated your later testimony. What you usually do is put up a chart of all the metals and tell us the status of them.

Cobalt is one of them. Do you want to put the chart up now and tell us the condition of the metals, or would you rather proceed in another way?

Dr. ENZER. Dr. Morgan will be delighted to do that for you. He is just waiting to do that.

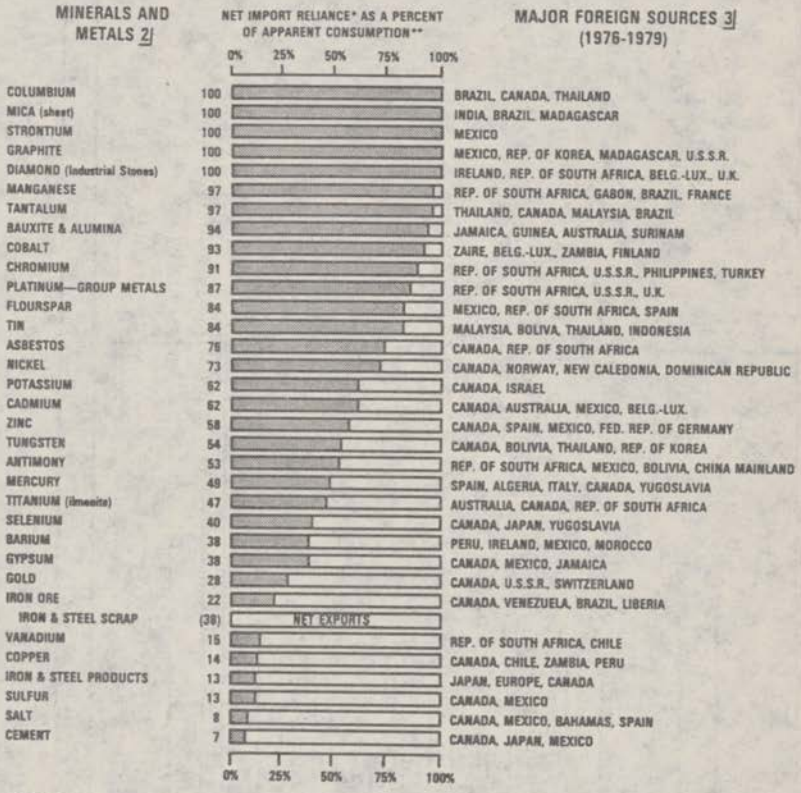
Mr. YATES. Before Dr. Morgan proceeds, as Acting Director are there things you want to tell us which do not appear in your statement?

Dr. ENZER. Not at this time, Mr. Chairman.

Mr. YATES. We will proceed with Dr. Morgan. Go ahead, Dr. Morgan. Please insert your charts at this point in the record.

[The information follows:]

U.S. NET IMPORT RELIANCE OF SELECTED MINERALS AND METALS AS A PERCENT OF CONSUMPTION IN 1980 [1]



*NET IMPORT RELIANCE = IMPORTS-EXPORTS +ADJUSTMENTS FOR GOV'T AND INDUSTRY STOCK CHANGES.

**APPARENT CONSUMPTION = U.S. PRIMARY +SECONDARY PRODUCTION + NET IMPORT RELIANCE

1/ JANUARY 1, 1981 (estimate)

2/ SUBSTANTIAL QUANTITIES ARE IMPORTED FOR RUTILE, RHENIUM AND ZIRCON. DATA WITHHELD TO AVOID DISCLOSING COMPANY PROPRIETARY DATA.

3/ SOURCES SHOWN ARE POINTS OF SHIPMENT TO THE U.S. AND ARE NOT NECESSARILY THE INITIAL SOURCES OF THE MATERIAL.

BUREAU OF MINES, U.S. DEPARTMENT OF THE INTERIOR
(import-export data from Bureau of the Census)

Fig. 1.

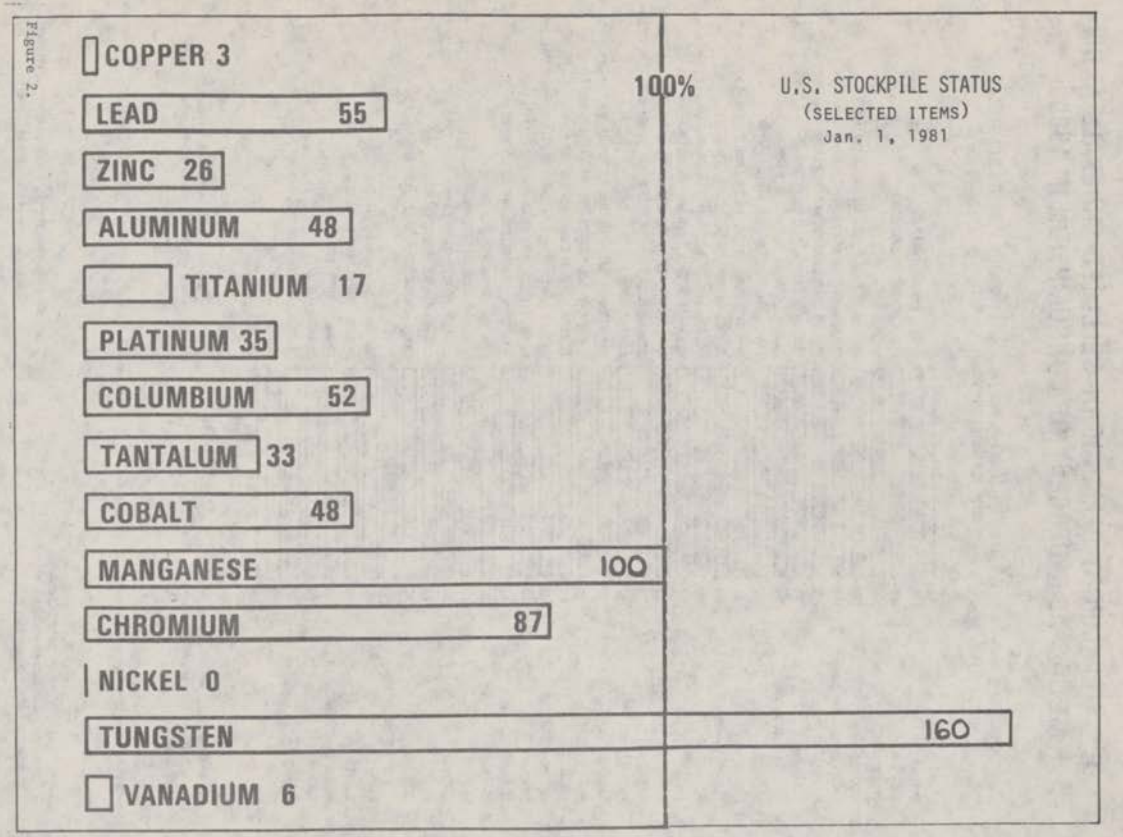

Figure 2.
COPPER 3
LEAD 55
ZINC 26
ALUMINUM 48
TITANIUM 17
PLATINUM 35
COLUMBIUM 52
TANTALUM 33
COBALT 48
MANGANESE 100
CHROMIUM 87
NICKEL 0
TUNGSTEN 160
VANADIUM 6
100%
U.S. STOCKPILE STATUS
(SELECTED ITEMS)
Jan. 1, 1981

Table I . FEMA's STOCKPILE GOALS, (DESIRED INVENTORY MIX), AND INVENTORIES AS OF JANUARY 1, 1981

Less-than-100% items are underlined, and for these the % on hand is also shown

		Goal	Inventory
Aluminum Metal Group	48	7,150,000 ST Al	3,444,064
(Alumina)		0	0
(Aluminum)	0	700,000 ST	1,733
(Bauxite, Metal Grade, Jamaica Type)	42	21,000,000 LDT	8,858,881
(Bauxite, Metal Grade, Surinam Type)	87	6,100,000 LDT	5,299,596
Aluminum Oxide, Abrasive Grain Group	41	638,000 ST Abrasive Grain	259,124
(Aluminum Oxide, Abrasive Grain)		0 ST	50,904
(Aluminum Oxide, Fused, Crude)		0 ST	249,867
(Bauxite, Abrasive Grade)	0	1,000,000 LCT	0
Antimony		36,000 ST	40,730
Asbestos, Amosite		17,000 ST	42,534
Asbestos, Chrysotile		3,000 ST	9,958
Bauxite, Refractory	12	1,400,000 LCT	174,599
Beryllium Metal Group	87	1,220 ST Be Metal	1,061
(Beryl Ore 11% BeO)		18,000 ST	17,987
(Beryllium Copper Master Alloy)	94	7,900 ST	7,387
(Beryllium Metal)	57	400 ST	229
Bismuth	95	2,200,000 LB	2,081,298
Cadmium	54	11,700,000 LB	6,328,809
Castor Oil (Sebacic Acid)	23	22,000,000 LB	5,009,697
Chromium, Chemical & Metallurgical Group	87	1,353,000 ST Cr Metal	1,173,230
(Chromite, Chemical Grade Ore)	36	675,000 SDT	242,414
(Chromite, Metallurgical Grade Ore)	78	3,200,000 SDT	2,488,043
(Chromium, Ferro, High Carbon)		185,000 ST	402,696
(Chromium, Ferro, Low Carbon)		75,000 ST	318,892
(Chromium, Ferro, Silicon)	65	90,000 ST	58,355
(Chromium, Metal)	19	20,000 ST	3,763
Chromite, Refractory Grade Ore	46	850,000 SDT	391,414
Cobalt	48	85,400,000 LB Co	40,802,393
Columbium Group	52	4,850,000 LB Cb Metal	2,510,528
(Columbium Carbide Powder)	21	100,000 LB Cb	21,372
(Columbium Concentrates)	32	5,600,000 LB Cb	1,780,463
(Columbium, Ferro)		0 LB Cb	930,911
(Columbium, Metal)		0 LB Cb	44,851
Copper	3	1,000,000 ST	29,048
Cordage Fibers, Abaca	0	155,000,000 LB	0
Cordage Fibers, Sisal	0	60,000,000 LB	0
Diamond, Industrial Group		29,700,000 KT	42,929,316
(Diamond Dies, Small)	42	60,000 PC	25,473
(Diamond, Industrial, Crushing Bort)		22,000,000 KT	23,692,782
(Diamond, Industrial, Stones)		7,700,000 KT	19,223,798
Feathers & Down	0	1,500,000 LB	0
Fluorspar, Acid Grade	64	1,400,000 SDT	895,983
Fluorspar, Metallurgical Grade	24	1,700,000 SDT	411,738
Graphite, Natural - Ceylon, Amorphous Lump	87	6,300 ST	5,498
Graphite, Natural - Malagasy, Crystalline	90	20,000 ST	17,911
Graphite, Natural - Other than Ceylon & Malagasy		2,800 ST	2,802
Iodine		5,800,000 LB	8,013,074
Jewel Bearings	57	120,000,000 PC	68,772,719
Lead	55	1,100,000 ST	601,036
Manganese Dioxide, Battery Grade Group		87,000 SDT	247,827
(Manganese, Battery Grade, Natural One)		62,000 SDT	244,816
(Manganese, Battery Grade, Synthetic Dioxide)	12	25,000 SDT	3,011
Manganese, Chemical & Metallurgical Group		1,500,000 ST Mn Metal	1,586,581
(Manganese Ore, Chemical Grade)		170,000 SDT	221,044
(Manganese Ore, Metallurgical Grade)		2,700,000 SDT	3,378,713
(Manganese, Ferro, High Carbon)		439,000 ST	599,978
(Manganese, Ferro, Low Carbon)		0 ST	0
(Manganese, Ferro, Medium Carbon)		0 ST	28,920
(Manganese, Ferro, Silicon)		0 ST	23,574
(Manganese, Metal, Electrolytic)		0 ST	14,172
Mercury		10,500 Flasks	191,391
Mica, Muscovite, Block, Stained & Better	84	6,200,000 LB	5,212,444
Mica, Muscovite Film, 1st & 2nd Qualities		90,000 LB	1,274,495
Mica, Muscovite Splittings		12,630,000 LB	19,498,277
Mica, Phlogopite Block	62	210,000 LB	130,745
Mica, Phlogopite Splittings		930,000 LB	2,019,294
Molybdenum Group		0	0
(Molybdenum Disulphide)		0	0
(Molybdenum, Ferro)		0	0
Nickel	0	200,000 ST Ni + Co	0
Opium Group	55	130,000 AMA LB	71,303
(Opium Gum)		0 AMA LB	31,795
(Opium, Salt)	30	130,000 AMA LB	39,508
Platinum Group Metals, Iridium	17	98,000 TrOz	16,991
Platinum Group Metals, Palladium	42	3,000,000 TrOz	1,255,003
Platinum Group Metals, Platinum	35	1,310,000 TrOz	452,640
Pyrethrum	0	500,000 LB	0
Quartz Crystals		600,000 LB	2,423,036
Quinidine	18	10,100,000 Av Oz	1,800,462
Quinine	72	4,500,000 Av Oz	3,246,164
Rubber	14	850,000 LT	119,208
Rutile	37	106,000 SDT	39,186
Sapphire & Ruby		0 KT	16,305,502
Silicon Carbide, Crude		29,000 ST	80,548
Silver (fine)		0 TrOz	139,500,000
Talc, Steatite Block & Lump		28 ST	1,092
Tantalum Group	33	7,160,000 LB Ta Metal	2,391,940
(Tantalum Carbide Powder)		0 LB Ta	28,688
(Tantalum Metal)		0 LB Ta	201,133
(Tantalum Minerals)	30	8,400,000 LB Ta	2,551,302
Thorium Nitrate		600,000 LB	7,145,112
Tin		42,000 LT	200,452
Titanium Sponge	17	195,000 ST	32,331
Tungsten Group		50,666,000 LB W Metal	81,216,792
(Tungsten Carbide Powder)		2,000,000 LB W	2,032,942
(Tungsten, Ferro)		0 LB W	2,025,361
(Tungsten Metal Powder)		1,600,000 LB W	1,898,911
(Tungsten Ores & Concentrates)		55,450,000 LB W	88,436,637
Vanadium Group	6	8,700 ST V Metal	541
(Vanadium, Ferro)	0	1,000 ST V	0
(Vanadium Pentoxide)	7	7,700 ST V	541
Vegetable Tannin Extract, Chesnut		5,000 LT	16,835
Vegetable Tannin Extract, Quebracho		28,000 LT	143,541
Vegetable Tannin Extract, Wattle		15,000 LT	16,398
Zinc	26	1,425,000 ST	375,970

Source: FEMA

Figure 3.



Figure 4.

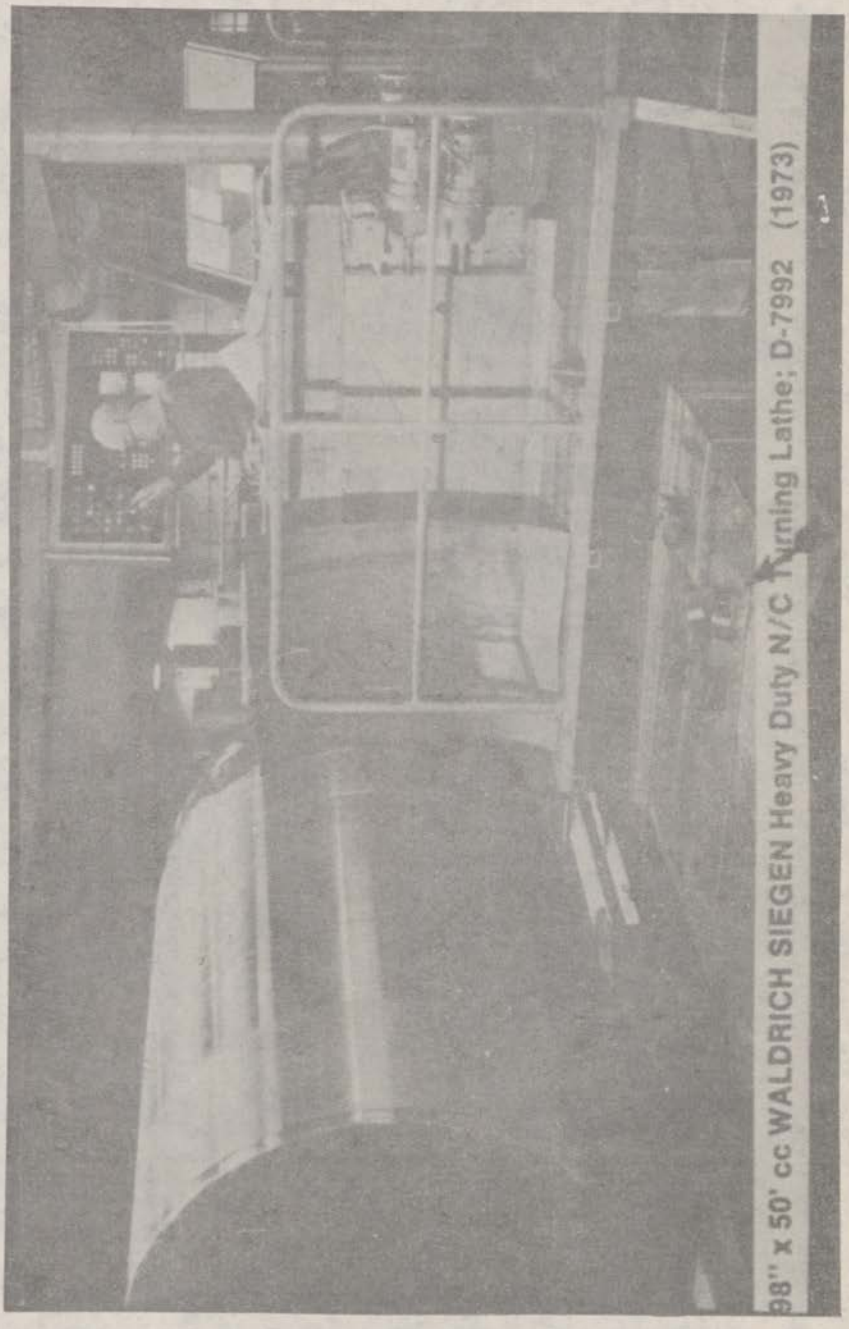
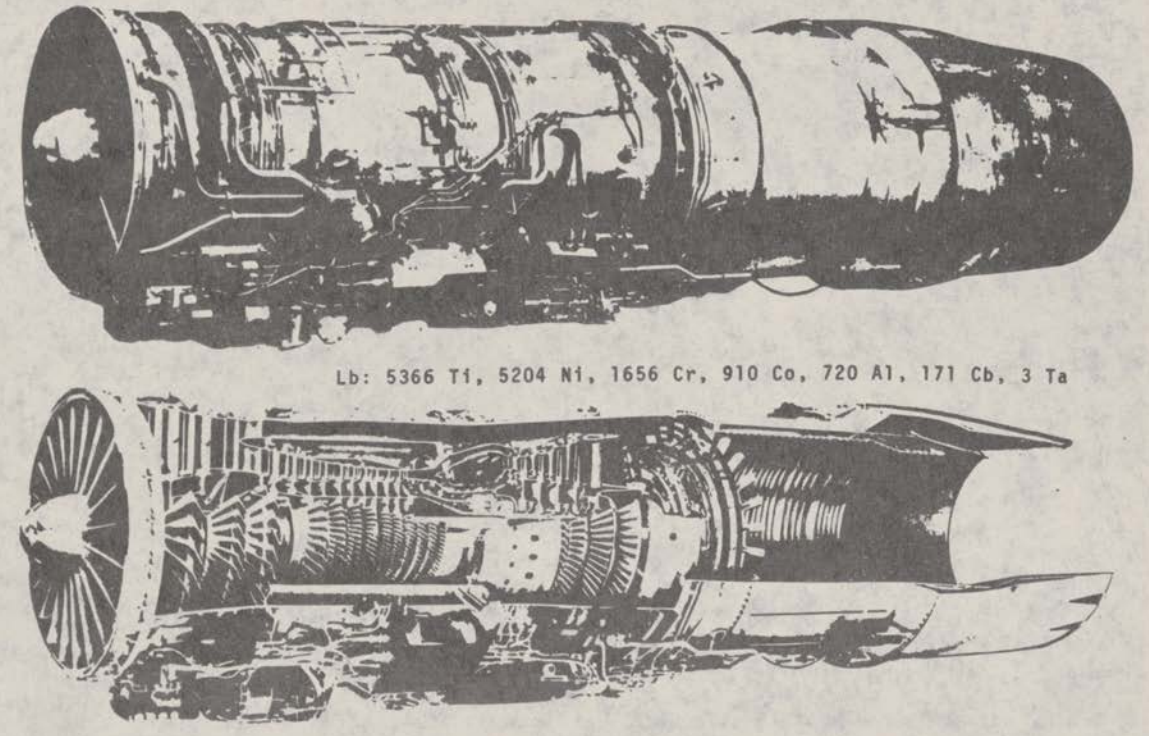

98" x 50' cc WALDRICH SIEGEN Heavy Duty N/C Turning Lathe; D-7992 (1973)

Figure 5.

The Pratt & Whitney F 100 Turbofan Engine Requires:

5366 lb of Titanium, 5204 lb of Nickel, 1656 lb. of Chromium, 910 of Cobalt, 720 lb of Aluminum, 171 lb of Columbium, 3 lb of Tantalum.



Lb: 5366 Ti, 5204 Ni, 1656 Cr, 910 Co, 720 Al, 171 Cb, 3 Ta

Figure 6.

ЗАНИМАТЕЛЬНАЯ ГЕОХИМИЯ А. Е. ФЕРСМАН

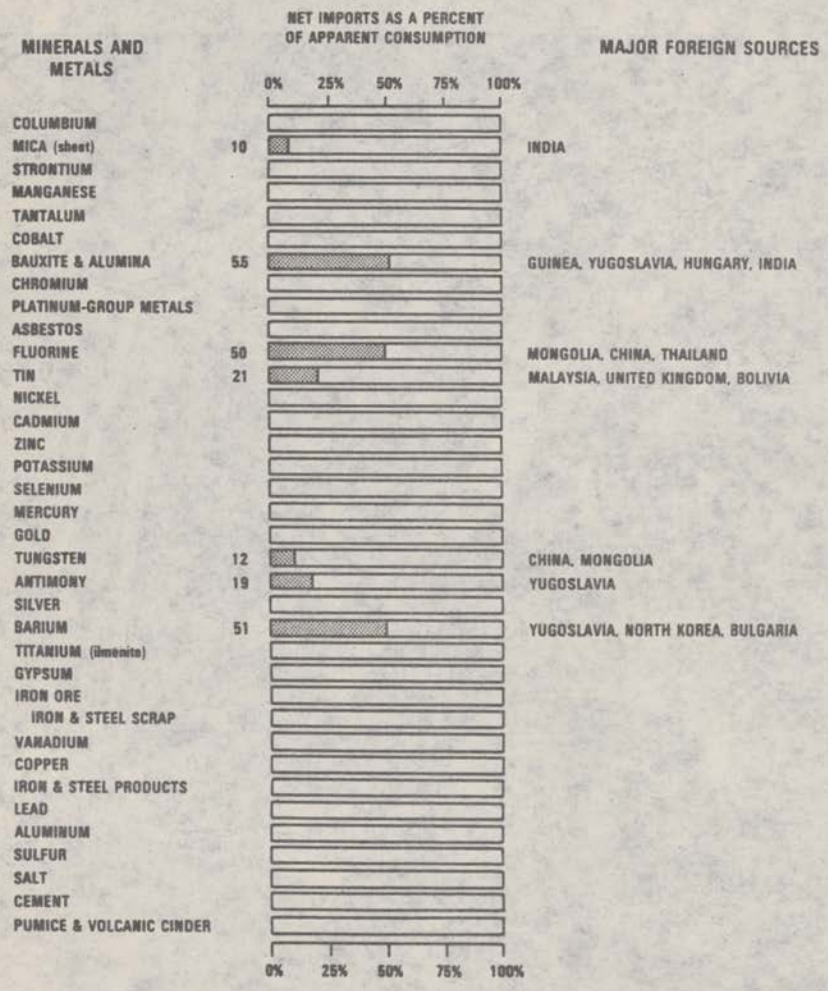
Г. И. ДЕТСКОЙ ЛИТЕРАТУРЫ 1948



Химические элементы в военной технике.

Figure 7.

U.S.S.R. NET IMPORTS OF SELECTED MINERALS AND METALS AS A PERCENT OF CONSUMPTION IN 1980 *



*ESTIMATE—MARCH 1981

BUREAU OF MINES, U.S. DEPARTMENT OF THE INTERIOR

Figure 8.

IMPORT RELIANCE FOR MINERALS AND METALS

Dr. MORGAN. These are the same charts we have had before except we have updated them to 1980. You really have to look at two or three charts to get the entire picture.

Starting off we have indicated on Figure 1, through the length of the red bar, the degree of import dependence.

Mr. YATES. Why do you select these metals? The title of this chart is "U.S. Net Import Reliance of Selected Minerals and Metals." Why do you select these?

Dr. MORGAN. These are virtually all of them. There would be a few other very minor ones and also this does not include the fuels within the province of the Department of Energy.

We want to be clear in talking about minerals, because the law defines petroleum, natural gas, coal, uranium, oil shale and things like that also as minerals but we are primarily responsible for—the non-fuel minerals. Anything of high dollar value or strategic importance is shown here.

MINERALS AND METALS CARTELS

Mr. YATES. Will you also cover the question as to whether or not the United States may face the same kind of a cartel in metals as we face in oil with OPEC.

There was some talk some years ago that there was this kind of organization which was contemplated among some of the nations on the outside. Is that no longer a possibility?

Dr. MORGAN. It is a possibility, though I think there is general agreement that the danger is not as great nor the possibility as strong as it would be in the case of oil. There are several reasons for that.

One is that in the case of oil, particularly with respect to Arabia, that is a country with a very small population.

Mr. YATES. What is Arabia? Is it Saudi Arabia?

Dr. MORGAN. Yes, sir. There is a country with a small population but a large amount of money, billions of dollars. Therefore, they can hold their oil off the market or restrict production because they have more money than they know what to do with in the short term.

Conversely, many of the countries which are non-fuel mineral producers, such as Zaire and Zambia in Central Africa, Chile and Peru in South America, in fact virtually every other developing country is much more populous and in much poorer financial condition. They need to convert whatever marketable assets they have into money as quickly as possible.

Also, with respect to many of the minerals there is the possibility of postponability of demand. In this country today, sir, we have 160 million motor vehicles for 226 million people. That is virtually one motor vehicle per licensed driver.

Last year automobile production was down 25 percent.

Mr. YATES. I don't think I understand that statistic.

Dr. MORGAN. We have 226 million people and 160 million motor vehicles, so it is roughly one vehicle per person in this country. Last year automobile production was down about a quarter, to a little over six million automobile units.

Therefore, Mr. Chairman, there is a postponability of demand for hard goods which does not exist in the fuels. In the case of fuels you have to heat the house in the winter and you have to cool the house in the summer. You have to burn the fuel in the automobile to go from here to there.

The next thing, there is a possibility of more substitution on the part of materials. You can make an electirc wire out of copper or you can make it out of aluminum. It is really in the special property alloy materials that the serious problems come up.

Then for a number of materials we do have in our strategic stockpile $13 billion worth of strategic materials piled up.

Now, the stockpile is not in balance. Some of the critical items are far short of the goal, but others are in excess. I don't think we would have had the oil problem, for example, if we had had billions and billions of dollars worth of oil in convenient form. As you know, we are building up the strategic oil stock only now to over one million barrels at the present time, which is only about a week's use.

Mr. YATES. Dr. Morgan, you should live so long as when we fill up that stockpile. Go ahead.

Dr. MORGAN. So there is a danger in non-fuel minerals, but in recent years the history of mineral cartels has been rather poor. The copper countries got together to try to keep up the price of copper. They have been at this for about six years. The price of copper today, even after a three months strike in this country, is 82 cents to 83 cents a pound, which is very low.

The bauxite countries tried to raise taxes on bauxite. The result was that there was great expansion in Australia, Brazil, and other countries. Now the major ones, such as Jamaica and Guyana, wish to renegotiate their arrangements with existing aluminum companies to get more business in bauxite and aluminum in the original countries.

The cobalt countries, as our director indicated, have been trying to hold the price at $25. They have been unsuccessful. There are quantities being offered now at $20, as Dr. Enzer indicated. Indeed there are discounts below that being talked about.

Mr. YATES. Is that because of the depressed economies of most of the industrial nations of the world?

Dr. MORGAN. Yes, sir. In this country and in western Europe, if you look at steel production as a barometer of the industrial demand, last year our steel production went from 136 million tons the year before to 112 million tons last year. This, then, is a significant drop.

There was an equally significant drop in the European community. Japan held about level in steel production. The rest of the world, many minor countries, went up some. USSR went up a little bit. However, there is an overall decline in the use of those materials which are used more or less in proportion to steel production.

Dr. ENZER. The other reason is that in these markets the economics of demand and supply work.

Mr. YATES. Yes.

Dr. ENZER. There are eight or ten producer associations, as they are called, not cartels, of which the tin, platinum and cobalt associ-

ations have been somewhat more effective than the rest of them. The economics of supply work.

When the price goes up $25 from the previous price of $6 per pound, everybody and his brother will look for cobalt deposits. If the expectation is that the price will remain at a higher level than before, we will have production, not from one day to the next because it takes five years to open a mine on the average, but there will be additional supplies.

STRATEGIC METALS STOCKPILE

Mr. YATES. Dr. Morgan, let me ask you about the strategic metals stockpile. What is the responsibility of the Bureau of Mines with respect to that?

Dr. MORGAN. For the strategic stockpile, 93 materials are designated as strategic and critical. Eighty of these are metals and minerals. Thirteen are of agricultural origin. Therefore, the Bureau of Mines is responsible for working with the Federal Emergency Management Agency, FEMA, which is the agency with overall stockpile responsibility. We give FEMA projections into the future for mineral production in this country and in strategically-accessible countries for the next three or four years into the future each year, so they are working on a running three- or four-year projection.

Mr. YATES. How accurate are your projections?

Dr. MORGAN. I would say they are very good, sir, because the Bureau of Mines gets detailed information from all of American producing industry virtually monthly. It is not a sampling operation but rather a complete coverage. In foreign countries we have very good information on most of them, particularly those who would be suppliers to us. I think that information is good.

Mr. YATES. With respect to the metals in the strategic metals stockpile, you indicated earlier some are in excess of the amounts of levels established and some are in deficit status. Is that information confidential?

Dr. MORGAN. No, sir. We have a table and a chart here.

Mr. MURTHA. Does the country listed first mean we get more from them?

Dr. MORGAN. That is right, sir. Those are in declining order. The first one is the predominant one.

On the stockpile chart, sir, Figure 2, we have picked several of the more important ones either in terms of strategic importance or dollar value. This is the status of the stockpile as of the first of January. We work closely with FEMA.

On the record, I know of no closer interagency working relationship than exists in the stockpile field. They have worked beautifully with us, with Commerce, Agriculture, Defense Department, and so on.

Here is the latest information indicating which major materials are short of stockpile goals.

Mr. YATES. How many metals did you say were in the stockpile?

Dr. MORGAN. A total of 93 strategic materials, 80 of which are metals and minerals.

Mr. YATES. Your chart does not show 80.

Dr. MORGAN. Only several of the major ones.

I have here a table which you may want. Figure 3 shows all of them.

Mr. YATES. I have seen this chart before. There are only two on your chart which reached 100 percent. If copper is low in price, why don't we buy it and put it in the stockpile so we have our 100-percent stockpile?

Dr. MORGAN. The value of all the goals for the 93 materials, if you price the 93 out at the present price, would require $20 billion.

Mr. MURTHA. In addition to what you have stockpiled now?

Dr. MORGAN. There are $8 billion on hand toward the goal.

Mr. YATES. It would take $12 billion more?

Dr. MORGAN. Yes, sir, it would take $12 billion more.

There are materials excess to the goals valued at $5 billion. Therefore, if you could turn around and sell the $5 billion, then you would need additional financing of $7 billion.

While we senior civil servants fully support the President's budget, the history of the budget is not encouraging because the last President asked for $150 million, the House cut it to $100 million, and the Senate Committee cut it to $50 million.

Therefore, if you look at a shortage on the order of $12 billion and you look at a budget on the order of $50 or $100 million, it would take 240 or 120 years to complete the stockpile.

Mr. YATES. All right.

SALE OF SURPLUS STOCKPILE MATERIALS

Mr. MURTHA. What if we sold off those in surplus? Would that be against the law to sell them so rapidly as to disrupt the market?

Dr. MORGAN. Congress rewrote the Stockpile Act in 1979 and made it specific that neither in purchasing nor in selling could they unduly disrupt the market.

Congress also authorized the sale of surplus commodities, surplus funds to go into a revolving fund, and the revolving fund to be used for the purchase of new materials. They have sent to the Congress from time to time disposal bills. Congress authorized some of these. The biggest single one considered for some time but not yet authorized is the disposal of silver.

With the high prices that silver brought in recent years, if they could have sold off some of the excess silver, converted it into money and bought strategic materials which were short, they would have been in better shape.

Mr. YATES. What about the quality of materials in the stockpile? How frequently do you examine them? Do you examine them or does somebody else examine them?

Dr. MORGAN. The Bureau of Mines works with the Commerce Department and with industry to establish specifications. These specifications ordinarily permit a range of materials. Many of the materials in the stockpile were purchased 20 or 30 years ago. For example, this Blackbird cobalt mine that Dr. Enzer referred to was brought into production by government contract in the Korean War period.

At that time the specifications for cobalt were not as stringent as the present stockpile specifications, so some of the material on hand is not of a quality for the highest use.

Mr. YATES. But this shows cobalt as being 48 percent. Is this cobalt not of highest use?

Dr. MORGAN. This is the total of acceptable use. If there is low grade material it is not counted in here.

Mr. YATES. Why don't you get rid of the low-grade material?

Dr. MORGAN. They are doing that where they can sell it off. In fact, they sold off some manganese and some chromium. That tungsten bar used to be 172 percent. In the last several years they have sold off some, so we cut the bar back to 160 percent.

Mr. YATES. Why do you have 172 percent? Is it because you had a greater demand for the strategic stockpile in earlier days?

Dr. MORGAN. Well, sir, if I may just show you an example here.

Mr. YATES. All right.

Dr. MORGAN. That is a high-velocity armor-piercing shell. That takes 7½ pounds of tungsten carbide, and about 10 percent of cobalt. I should have said that is heavy, sir.

Mr. YATES. It sure is.

Dr. MORGAN. That is how I stay in shape. I have been carrying that around for 30 years.

That will go through three inches of heavy armor. Of course, the use beforehand was just a little tungsten to make lightbulb wire like this.

Therefore, when the Army came in in the Korean War period with the requirement to make millions of shells such as this, we turned everything inside out. We expanded the supply of tungsten to the point that we were getting twice as much in this country as the industrial use.

Therefore, for 25 years there has been no shortage of tungsten. Indeed, the government is still selling off some of the excess, putting it into the revolving fund, and buying other material.

Mr. YATES. Tungsten is still used in the armor-piercing shells?

Dr. MORGAN. Yes, sir, and other important uses. If you want to take just a moment on tungsten, if I may have one or two of these other charts.

PRIORITY OF STOCKPILED MATERIALS

Mr. MURTHA. Are these materials listed in the order of their strategic importance?

Dr. MORGAN. No, sir. We just group the common materials—copper, lead, zinc, aluminum—at the top, and the more strategic ones at the bottom.

Mr. MURTHA. Do you have a chart giving us an order of strategic importance, or is that not the responsibility of the Bureau of Mines?

Dr. MORGAN. I think what you would have to do is to put them in order of military requirement. FEMA has them in groupings which are most essential to make military items and then those which are more for the civilian economy. That could be done but it would be classified.

Let me have the well-drilling chart (figure 4).

Mr. YATES. Before you go to well-drilling, how often are requirements evaluated?

Dr. MORGAN. At least every year. If the Defense Department comes in with something unusual it would be at the time they came up with it.

Mr. YATES. Does this shell have powder in it?

Dr. MORGAN. No, sir. That is just a solid shell. It is tungsten carbide and about 10 percent cobalt, which is another reason we need this cobalt, which cements the tungsten carbide. The well-drilling bit has teeth of tungsten carbide cemented with cobalt.

Mr. YATES. Yes.

Dr. MORGAN. Here is the actual point. That is tungsten carbide.

Mr. YATES. That is more like an amount which I can lift.

Dr. MORGAN. It is 10 percent cobalt cementing that bit. We would not have any oil-well drilling without strategic materials but expansion of oil-well drilling in this country is required to meet energy targets.

The thing breaking up the rock is the tungsten carbide cemented by cobalt.

Mr. YATES. Obviously you are looking for the hardest kind of metal for that purpose, are you not?

Dr. MORGAN. That is right, sir.

Mr. YATES. Is there a harder one than that?

Dr. MORGAN. Industrial diamonds are a little harder and they would be used like a cookie cutter to get a core to examine. However, the roller bit breaks up the rock and the geologist looks at the cuttings as they come up.

Another use, if we may have the machine tool chart, figure 5 is this: we would not have any machine tool industry if it were not for tungsten carbide and cobalt. Notice the steel roll being cut there. In the foreground, do you see those big chips?

Mr. YATES. Yes.

Dr. MORGAN. This is sharp. Don't cut yourself. There is a big steel chip cut off that roll.

Mr. MURTHA. Is that a solid steel roll?

Dr. MORGAN. Yes, sir. Here is the tool cutting it off. That is the actual piece doing the cutting. That is tungsten carbide cemented with cobalt.

Mr. MURTHA. Is that the way it looks or is it sharpened?

Dr. MORGAN. No, sir. Do you notice where an edge is worn?

Mr. MURTHA. Yes.

Dr. MORGAN. And another edge is not? That tool can be used in four positions to tear off a chip like that from a roll like that shown on the chart.

Therefore, our entire heavy industry, not only the Army, Navy, and Air Force, is dependent on these things.

Let's have the airplane engine next, figure 6. Another area we are particularly concerned about is the airplane engine. What we have listed here is the F-100 airplane engine which is for the F-15 and F-16 fighter planes. I have shown here the composition. This is what they have to order to make such an engine.

5,366 pounds of titanium, 5,204 pounds of nickel, 1,656 pounds of chromium, 910 pounds of cobalt, 720 pounds of aluminum, 171

pounds of columbium, 3 pounds of tantalum. That is not the flyaway weight. This engine weighs only about 3,300 pounds. However, the sum of what I listed for you is about 14 thousand pounds. However, this is what they order in raw form to then fabricate, machine, and so forth, and make these parts.

Mr. YATES. What is the cost of the raw material?

Dr. MORGAN. A couple hundred thousand dollars, and the engine would be probably $5 million. The airplane would be $27 million.

Mr. YATES. Is it $27 million now?

Dr. MORGAN. Yes, sir.

Mr. YATES. Were you aware of that, Jack?

Mr. MURTHA. Yes.

Mr. YATES. I thought it was $16 million.

Mr. MURTHA. It depends how many you buy. They are $27 million a copy.

Mr. YATES. What did a fighter plane cost in World War II, $200,000?

Mr. MURTHA. Less than $200,000.

Dr. MORGAN. Here is a piece of the hot side of such an engine. That is 70 percent cobalt, 30 percent chromium.

Mr. YATES. What does the hot side mean?

Dr. MORGAN. You see where the red is on the chart? Cold air comes in the front, the fan compresses it, and then it meets the fuel. That is where it gets red hot.

Mr. YATES. You have to worry about those little prongs breaking off, don't you?

Dr. MORGAN. That is right. This is what directs the hot gas.

Then here is the skin of such a supersonic airplane. That is stainless steel, which is nickel and chronium mixed with iron. That honeycomb gives it strength. A silver-brazing alloy is required to put that together.

Therefore, as we rate these materials we are constantly looking at the defense importance, the industrial support to the defense program, such as the machine tool industry, the well drilling, coal mining, and so forth, and then uses in the common civilian economy.

REQUIREMENTS FOR TITANIUM

Mr. MURTHA. I see titanium is completely imported. We have no titanium here at all; is that right?

Dr. MORGAN. We import rutile, which is the ore for titanium. We import, also, some ilmenite from which titanium can be made.

On the other hand, reduction of the ore to the metal is essentially a domestic industry. We make about 25,000 tons a year of titanium metal in this country, and we imported last year about 4,500 tons. The complex part is the reduction of the ore to the metal.

Mr. MURTHA. Is there any substitute for titanium in these engines?

Dr. MORGAN. Titanium was developed because it is six times as strong and twice as heavy as aluminum. Therefore, it has a three to one strength-weight ratio compared to aluminum, and also it has a higher melting point. Therefore, you could go back and substitute

aluminum for titanium but you would have less performance, or you could go to stainless steel.

Mr. YATES. What about zirconium? Is anybody using that these days?

Dr. MORGAN. It is being used increasingly for resistance to corrosion in the chemical industry. It is also used in the nuclear industry in nuclear reactors.

STATE OF U.S. METALLURGY RESEARCH

Mr. YATES. This raises an interesting point, referring now to all these alloys and combinations you are talking about. Is our metallurgic research as advanced as that of the Soviet Union in your opinion?

Dr. MORGAN. Sir, we have our chief scientist here and our deputy director in charge of metallurgy. Maybe you ought to ask them that.

Dr. HENRIE. I think most all of the research since World War II on the so-called exotic metals, was started in this country. The Japanese were quick to pick up a lot of our technology. For example on titanium, I used to be a titanium expert, and appeared at international meetings several years ago. The Russians were quite anxious to exchange papers and books and things such as that with me. They presented me with a book on titanium. One of the pictures in the book was taken at our Boulder City Laboratory, because I looked closely at the specifications of that reactor. They had put a hat on a man and made him look like a Russian and published it.

I think both our physical metallurgy and extractive metallurgy are far and away in the lead.

Mr. YATES. I read a report about a new Soviet submarine that went deeper and faster than our submarine because it was made of titanium? Is my memory correct in that?

Dr. HENRIE. I think it is more than just metallurgy involved in the decision as to whether you make something out of titanium or something else. The titanium situation was such that we knew how to make titanium and a lot of good titanium alloys. However, somewhere along the line we forgot about checking the stress corrosion from chloride ion in sea water, where there is oxygen present. Some of the titanium alloys we made corroded very heavily in that particular atmosphere.

Then we found pure titanium was better than titanium alloys in that particular situation. However, as far as I have been able to read—I have not gotten involved with all the defense aspects—we have the capability of producing the titanium if we wanted to use it in a submarine. The reason is as Dr. Morgan says, that is, titanium has the strength of steel and is half the weight per unit volume. The other way around, it has a strength-weight ratio three times that of aluminum.

Mr. MURTHA. Would you say that is what they have used in this new submarine?

Mr. YATES. That is what the newspaper report said.

Dr. MORGAN. That is the report. I gather from conversations with the Navy that there may be something to that.

Mr. YATES. I don't think anybody in our country has seen the ship. The only report was that there were monitoring reports which indicated that the Soviets had a submarine which was capable of going much deeper than ours and it was faster than ours and noisier than ours so we could track it.

However, as far as the reports were concerned that was the only information we had. Whether the military has other information, I don't know.

You may ask that question in the defense hearing, Mr. Murtha.

Dr. HENRIE. Our materials science has led the world for a number of years; that is, our activities in the science of materials.

Mr. YATES. The reason I raise that question—and I accept your statement with a little bit of skepticism—you will remember during World War II the German tanks were more impervious to our shells and had an armor-piercing shell we did not have. It was a Tiger tank.

Dr. HENRIE. I happened to be on the receiving end of those Tiger tanks.

Mr. YATES. Is that not correct?

Dr. HENRIE. I was told the decision was made that it was is better to make two 30-ton tanks than one 60-ton tank inasmuch as we were going to transport them.

Mr. YATES. I see.

Dr. HENRIE. I saw a few tank battles in which——

Mr. YATES. The heavy tank won?

Dr. HENRIE. No. The American soldier was a pretty good soldier. We outwitted them. We got two or three tanks one day and we didn't lose any of ours.

Mr. YATES. Did you do that with the tanks or did you do it with the soldiers?

Dr. HENRIE. We did it with the intuition of the soldier. He was smart enough to run his tank from behind one building across the street to the other and the German was sitting down in the open. He would get across the street, the German would fire and miss. Then he would come out and bing, we got three of them.

Mr. YATES. Did we have the armor-piercing shells to destroy them?

Dr. HENRIE. Yes, we had armor-piercing shells, but they had a lot of armor so we had to bounce the shell off the ground into the bottom of the tank.

Mr. YATES. The soft underbelly?

Dr. HENRIE. That is right. Here again, that was the soldier who was protecting himself. He was quite a smart guy.

Mr. YATES. On the basis of your explanation, Dr. Henrie, we will accept the statements you made that we are ahead of the other countries in the quality of our metallurgy.

IMPORTANCE OF TITANIUM

Dr. MORGAN. On titanium I would say this Figure 7 is an interesting picture. First, it is from the Ministry of Children's Literature in the Soviet Union, so you can see what they are teaching children. Also, it was from a book printed in 1948.

If you look at the airplane at the wing they had the titanium earmarked for use in the airplane in a book for children in 1948.

We didn't begin to develop the titanium industry in this country on a commercial basis until after the Korean War started in 1950.

Mr. YATES. How does this jibe with Dr. Henrie's statement as to our supremacy in this area?

Dr. MORGAN. They are smart enough to develop their resources picking up from the technology developed here, as Dr. Henrie indicated. The technology was developed here but they have worked with it.

At the present time where we are producing 25,000 tons of titanium metal a year, they are producing about 40,000 tons of titanium metal per year, so it is possible they would have it to use for the purpose shown here.

Mr. YATES. It is an interesting picture. I am sure you will take that to your military hearings, Mr. Murtha.

Mr. MURTHA. I surely will.

Mr. YATES. That raises another point. Even assuming supremacy in this field you mentioned, apparently somewhere along the line we are falling short. Dr. Morgan indicates they are producing much more in this field than we are.

Dr. HENRIE. I suppose a democratic system is not the most efficient system to get things operating, but it is the best system for us to live in.

Mr. YATES. All right.

Dr. HENRIE. There are many things that go into decision-making in this country which perhaps do not bring about the efficiency of decisions they have in other countries.

In any meetings I have attended, and in any association I have had with people in foreign countries, I have never felt we were second in anything as far as the technical world is concerned.

Mr. MURTHA. Going back to the submarine, you are saying we have the technology. They decided to use it and we decided not to use it. Is that it?

Dr. HENRIE. I don't know what we decided. They had the publicity.

I would sooner myself not get involved with things which are secret and top secret because that limits your discussion.

COMMITTEE ON MATERIALS (COMAT)

Mr. YATES. We certainly don't want to get into anything classified. The question which comes to mind is what is the relationship of the Bureau of Mines expertise and the defense of the country?

Dr. HENRIE. We had a committee a few years ago called COMAT. We worked very closely with this committee and kept each other informed regarding technology, where we stood, and how we could complement each other.

I think the Bureau of Mines research program leans heavily upon the supply of basic raw materials, the extractive industries. This does not mean we can be naive and not know what is going on in the use and performance areas. We have to know those things, too.

However, when you get into areas involving the use of materials and performance of materials, this is more the responsibility of the Bureau of Standards, Defense, and NASA. This committee was

meeting regularly and we were watching budgets, goals, and things like this relative to technology development.

When we were disbanded we felt we should continue to meet, but the press of time has limited this close technical association.

Mr. YATES. It is unfortunate, isn't it?

Dr. HENRIE. We still have a lot of good association with each other, but a lot of it is more formal now than it used to be. I think we really keep each other informed on the supply needs as well as the use and the performance of certain components.

Mr. YATES. We are moving into the field of synthetic fuels. They will be needing exotic metals for this industry, will they not?

Dr. HENRIE. It used to be that the energy group was in the Bureau of Mines, too.

Mr. YATES. I realize that.

Dr. HENRIE. We had worked for years and years to develop oxidation resistant materials. These are stainless steel, titanium, and things like this.

Now we find ourselves concerned with synthetic fuels in a reducing atmosphere carrying heavy amounts of sulfur rather than oxygen. That has taken us back a little because we have now to look at a different way of putting the alloys together to make them perform satisfactorily again at high temperatures, high pressures, but in a different type of corrosive atmosphere.

Dr. ENZER. This is an area where the budget which is before you contains an item to do metallurgical work and other related work; namely, on metals which would be used in synthetic fuel plants and other facilities.

Although I am not a metallurgist, I have been told that the major metallurgical problems are not so much in defense applications but in this particular area which you raised a moment ago, namely, synthetic fuels production, because the requirements on metals with respect to temperature, pressure and corrosion as well as abrasion seem to exceed most anything we are familiar with.

Mr. YATES. Let's hope it passes the inspection of the Reagan OMB. Is that right?

Dr. HENRIE. That is right.

Mr. YATES. They have to have some common sense, don't they? We hope so. Go ahead, Dr. Morgan.

MINERALS DEPENDENCE OF OTHER COUNTRIES

Dr. MORGAN. What we have shown here on Figure 8 is comparable information on the Soviet Union.

Mr. YATES. Proceed, Dr. Morgan.

Dr. MORGAN. We have a comparable picture of import-dependence for the USSR. It shows that they are import dependent on only six or seven non-fuel minerals and in almost every case where they are dependent, it is upon countries adjoining the USSR. Therefore, the ultimate picture which emerges is that the United States is import-dependent on a number of these materials. The Soviet Union is largely self-sufficient. However, we have also to keep in mind our relationship with our allies the European Economic Community, NATO, is as dependent as we are, if not more so, and Japan in the Pacific is dependent on imports for virtually 100 percent of everything in the way of raw materials.

Mr. MURTHA. Do either of them stockpile?

Dr. MORGAN. No, sir. There has been talk of some European stockpiles. The French have a small stockpile. The Germans contemplated a stockpile but in November of this year they decided it would be too costly, and besides they found their industry was carrying certain stocks.

I think in Europe, where they have been subject to wars over many, many years, they do tend to carry a little more in industries than they care to admit. In fact, in Sweden, which has been neutral from war but engaged in business a long time, they have special tax incentives there to encourage heavy industry to buy raw materials when the price is low, then hold them in inventory and draw them down when there is a period of high price or shortage.

In effect, then, the Swedes have built a revolving stockpile in the hands of industry, which I gather works very successfully in Sweden.

Dr. ENZER. With your indulgence, Mr. Chairman, I will break in every now and then to make a link to the budget that is before you.

Mr. YATES. This is a budget hearing.

Dr. ENZER. The link I would like to make is this, although this chart looks impressive with respect to minerals independence as far as Soviet Russia is concerned, I am convinced they do pay a relatively high economic price for this. To develop some of the materials domestically rather than importing them from other countries will cost them quite a bit more than the going price in world markets.

What we are trying to do is to extract some of those minerals domestically which are white on the chart and mostly red when you put up the U.S. chart. We have put together a program of increasing our efforts in extracting such materials from waste material as by-products and from sub-economic resources.

If we just went ahead and produced these minerals from our sub-economic resources it would cost us an enormous price. Therefore, we need to do some work in this area to see whether we can improve our extraction technology and solve some basic scientific problems which need to be solved.

I do not think that we in the United States would want to pay an enormous price for self-sufficiency, even if self-sufficiency were possible.

Mr. YATES. I would wish we had self-sufficiency in the field of oil at the moment, even if it were at an enormous price, because the price we will pay for oil is beyond contemplation over the next several years.

Apparently, on the basis of your testimony, we do not have that fear in the case of the metals.

MINERALS IMPORT RESTRICTIONS

However, what would happen if there were some kind of a cut-off of imports from South Africa?

Dr. MORGAN. We look to South Africa for substantial amounts of chromium, manganese, platinum, gold, vanadium, asbestos, fluorspar, diamonds, and probably other materials we could name.

I think even more important is the dependency of Europe on South Africa. You would find for most materials Europe is more dependent on South Africa than we are.

Therefore, if there were a physical interruption, that would be one problem; or if it were a political interruption, as people have talked of, a U.N. embargo on South Africa, that would be a different problem.

The U.N. embargo on Southern Rhodesia was not particularly successful. I gather that mineral production in Southern Rhodesia continued all during the period of the United Nations embargo, particularly with respect to chromium, and they sold it and it changed hands several times. It got to many destinations.

Dr. ENZER. We did work in this area on the major minerals we are getting from southern Africa. If you assume a disruption, say from South Africa, and then consider our domestic stockpiles, private as well as strategic, and proceed on the supposition that the President would release materials from the stockpile in case of a true emergency, and if you assume the use of certain minerals would not be allowed for certain applications, such as using chromium for bumpers and other things, then in most cases we probably could survive a disruption for several years, depending on the mineral. We would be relying on our own supplies and the supplies we would get from other countries which would not be subject to the disruption.

Mr. YATES. What do we get from the USSR? I see we get platinum.

Dr. ENZER. We get platinum. We get some chromium.

Mr. YATES. Is that our primary source?

Dr. ENZER. No. South Africa is our primary source in platinum by far.

Mr. YATES. Did you have questions, Mr. Murtha?

Mr. MURTHA. Are there strategic materials we could not get by with for two to six years?

Dr. ENZER. Those which Dr. Morgan mentioned. If we cannot get hold of cobalt our airplanes are not going to fly a few years from now.

Mr. MURTHA. Are you saying, that even if you shifted to a war time economy and did not use it in the private sector, you still could not get by if our cobalt supply were cut off?

Dr. ENZER. There are certain uses for which cobalt has no substitute, Mr. Murtha.

Mr. MURTHA. We get cobalt from Australia and Canada?

Dr. ENZER. Yes, we do. It would take some time for them to increase the supplies that we would need to substitute for the shortfall from Zaire and Zambia.

If we look into the distant future and if we envision we might have ocean mining, then cobalt as well as manganese, as well as nickel would be available to us in enough quantities so we would not have to worry.

OCEAN MINING OF MINERALS

Mr. YATES. I sat next to the President of ASARCO the other night. He said it is uneconomic to go for deep sea bed mining at the

present time. Maybe some day we may have to do it but at the present time we don't have to do it.

Dr. ENZER. I have done some work in this area, Mr. Chairman. The economics do not look too good.

However, if prices were to increase by, say, 50 percent, I think it would become economic.

Mr. YATES. I hate to think of what that means for those of us who have to buy the results of that.

CONSERVATION OF STRATEGIC MINERALS

Mr. KENAHAN. There are areas, regarding cobalt, where we could cut down on its use. One happens to be tungsten carbide which utilizes cobalt as a binder. We are doing research this year on that.

If particles of tungsten carbide can be coated with a thin layer of the cobalt, for example, that would serve the same purpose as using a much larger amount of cobalt.

There are about 1300 tons of cobalt used each year in tungsten carbide materials. If we could coat the carbide with cobalt, we might cut that in half. The total demand for cobalt is about 8,000 tons a year.

Therefore, there are areas where we could cut down. Obviously, as Dr. Enzer said, do we have to use chromium on car bumpers? We are also working on a substitute for stainless steel, for example, an iron-based aluminum-molybdenum alloy has many of the characteristics of certain stainless steels that we use.

It cannot be used at the high temperature that stainless steel can, but it can be used up to a moderately high temperature.

We can also increase our activity in the field of recycling and conservation of critical materials.

Mr. MURTHA. I understand what you are saying. Are there any strategic materials which we could not get by with for a couple years? Obviously defense aspects are what interest me.

Is that true of all strategic materials as it is with cobalt?

Mr. KENAHAN. There are some materials we could not get along without.

Dr. ENZER. Platinum, for example, serves as a catalyst in refining gasoline. As far as I know there is no substitute for platinum for this use. If we did not have platinum we would not have to worry about a fuel crisis because we would not have any gasoline.

Mr. MURTHA. How is our stockpile of platinum?

Dr. MORGAN. We have the figure here. It depends on different materials. It is about 35 percent on hand for platinum, 42 percent for palladium, and only 17 percent for iridium. These three are known as platinum group metals.

Dr. ENZER. In some cases there are a few uses of the metals for which we simply do not have any good substitutes.

CALCULATION OF STOCKPILE REQUIREMENTS

Mr. MURTHA. Who makes the recommendation that we decrease the stockpile in one area and increase it in another? For instance, it seems to me that this is an area where we should increase the stockpile, referring to platinum.

Dr. MORGAN. Let me show you how the stockpile calculation is made. Each year we sit down with FEMA, with Commerce, Defense Department, and all the other agencies involved. We ask what would be the military requirement. We ask what would be the industrial requirement to support the military and the civilian economy. We ask what would be the essential civilian requirement.

We make virtually no constriction on the military requirement because we have to meet that. We would look fairly carefully at the essential industrial to be sure it is essential. It would include things such as cutting tools, well-drilling bits, and the rest of that which is necessary.

As to the civilian economy, some degree of conservation would be calculated because we obviously would not have to be making more summer homes, too many more autos, and so on. However, we would have to keep up employment. You cannot cut the civilian economy out completely because you need that industry to have the mobilization base to convert to make the military articles. If you suddenly stop making automobiles completely, what would happen to the people you needed a year from now to make military trucks, tanks, or something like that? Therefore, you have to keep a fair amount of the civilian economy viable. Besides, they have to work and pay taxes to keep the economy going.

Therefore, we in effect get a pretty large requirement for the entire country.

Then we set off against it how much would come from domestic production. How much would come from strategically-accessible nearby sources such as Canada, Mexico, Latin America, applying some discounts for shipping losses, political instability, and so forth, in South Africa, for example. Then comparing the requirement and the supply usually shows a supply deficit.

That deficit, for a three-year war period, becomes the stockpile goal.

The interesting thing in that equation is this: inasmuch as we are planning on a three-year war period, every one ton of domestic productive capacity is equal to three tons in the strategic stockpile.

This is one of the points that Secretary Watt made in his testimony—that was in his statement.

Dr. ENZER. Yes.

Dr. MORGAN. Therefore, to the degree that we have a viable domestic industry we have less need for a stockpile. To the degree that the domestic industry shrinks and is no longer reliable, for every one ton of annual shrinkage you have to turn around and have three tons in the stockpile.

Mr. MURTHA. Is that not taken into consideration? If you need less the stockpile requirement would be less?

Dr. MORGAN. That is right.

Mr. MURTHA. You are still short then. From an absolute standpoint you need less because of all the factors you talked about. However, you are still short in some of these strategic materials.

Dr. MORGAN. That is right, sir. The absolute shortage is on the order of $12 billion worth in the strategic stockpile. That is the current measure of the shortage in dollar terms.

REDUCTION OF STOCKPILE DEFICITS

Dr. ENZER. After all is said and done, Mr. Murtha, this administration, working with Congress, and without asking for additional funds, could undertake some measures to put our stockpile into better shape. I certainly hope this will take place because there are a number of things which can be done.

If this administration will work with the Armed Services Committees I think it is quite possible to eliminate some of the deficits we have at this time.

Mr. YATES. Do you want to put in the record a list of things you think ought to be done?

Dr. ENZER. Yes, sir.

Mr. YATES. And the amounts of money it might take.

Dr. ENZER. Yes, sir.

[The information follows:]

OPTIONS FOR REDUCING STOCKPILE DEFICITS

To remedy some of the major problems with the stockpile and eliminate the deficits in the stockpile, this Administration could initiate the following measures:

Direct the National Security Council to conduct a review of our war preparedness assumptions. Judging by the public statements of defense officials over the past 2 years, there is doubt among military planners as to the relevancy of a 3-year war assumption. The Stock Piling Revision Act of 1979 requires a planning period of not less than 3 years. But if the Joint Chiefs of Staff are involved in the review, and if the Administration works with the Armed Services Committees, the 3-year requirement can probably be changed if Congress is convinced that a proposed change is based on national security reasons rather than on budgetary considerations.

One of the major problems that has significantly affected the Federal management of the strategic stockpile has been the occasional use of sales from the stockpile for economic or budgetary purposes. As a result, Congress has imposed restraints on operations which make it difficult, if not impossible, to adjust the stockpile quantitatively and qualitatively to keep it up to date. As has been repeatedly suggested, a solution would be the establishment of an independent board which, within broad guidelines, would have the authority to manage the stockpile in a businesslike manner. Moreover, serious consideration should be given to having the stockpile managed and operated by a private firm instead of the GSA.

It is evident that among the 93 materials in the stockpile there are some which are, in some sense, more important than the rest. Among minerals, those which are required for parts which must withstand high temperatures, pressures, corrosion, and for which the U.S. is highly import dependent—chromium, cobalt, platinum, vanadium, nickel, tungsten, titanium, manganese—are in a class by themselves. They are indeed strategic and critical minerals. The remaining minerals and materials are of lesser importance. A thorough review of the materials list may show that several of them could be dropped without significantly reducing our capability to meet our national defense needs.

According to the Stock Piling Revision Act, the President determines which materials are strategic and critical, and the qualities and quantities of such materials to go into the stockpile. The Act seems to say that the President can make adjustments provided the Armed Services Committees are notified of proposed changes in advance. Thus, the Administration could conduct a thorough review and retain only those materials which are absolutely essential to the conduct of a war or in meeting a national emergency.

MINERALS EXPLORATION ON PUBLIC LANDS

Mr. YATES. What about the statement by Secretary Watt that he is opening up the country? That is not an exact statement, but in effect he said he is opening up public lands to exploitation of mining. Do you have a role in this? You do in the wilderness areas.

Dr. ENZER. We do in the wilderness areas. We do not yet know what the Secretary has in mind.

As far as I know, he would like to have a thorough review of the 70 percent of public land which has been withdrawn or which has been subjected to restrictions so that exploration is difficult or impossible.

What he has said on a number of occasions is that he will have a hard look at what has been withdrawn, make decisions about withdrawn lands which can be returned to multiple use, and then hope that private enterprise will engage in exploratory activities and find some of the minerals we need.

He has not said more than that publically.

Mr. YATES. We will try to find out on Friday what he had in mind.

Dr. ENZER. Yes, sir.

BUDGET REVISIONS OF NEW ADMINISTRATION

Mr. YATES. What else should you tell us before I start asking you specific questions? Is there anything regarding problems you have we ought to know about?

Dr. ENZER. Our biggest problem at this time which everybody has is how we are going to come out in the revised Reagan budget. I think we really should be quite silent about it. I will not sit here before you and pretend that I don't have the vaguest idea what the numbers will look like because I do have some idea. However, I truly don't know what the final budget will look like and what the final programs will be which will be affected. I think we will come out fairly well among Department of Interior bureaus.

Mr. YATES. When you say you will come out fairly well in the Department of Interior bureaus, and that speaks well for you, does that mean it does not speak well for the other bureaus?

Dr. ENZER. No, that does not imply that.

Mr. YATES. All things are relative.

Dr. ENZER. It simply means that in the relative scheme of the Secretary, he considers the kinds of activities we are involved in highly important.

Mr. YATES. National parks are not so important?

Dr. ENZER. National parks is the only program that will get an increase, I understand.

Mr. YATES. Really?

Dr. ENZER. Yes, sir.

Mr. YATES. Are you not going to get anything?

Dr. ENZER. We are all going to be cut.

Mr. YATES. All of us are looking forward to March 10th when the tablets come down from Mount Sinai.

AWARD OF CONTRACT TO MINORITY FIRM

Mr. MURTHA. I have a couple questions, Mr. Chairman, on contracting. I have a contract which had to go to a minority contractor. I will put it in the record. I am sure you are aware of the particular contract I am referring to, which was much higher than it normally would have been.

Dr. ENZER. Yes.

Mr. MURTHA. If you will, answer that for the record.

Mr. YATES. These may go into the record at this time.

[The questions and answers follow:]

Questions Submitted by Congressman Murtha

Award of Contract to Minority Firm

Question. What procedures do they follow when awarding a contract, such as the Allport Reclamation contract which is going to a minority contractor.

Answer. The procurement action is reviewed in accordance with the Federal Procurement Regulations and the Interior Procurement Regulations to determine the opportunities for award to the Small Business Administration pursuant to Section 8(a) of the Small Business Act of 1958. If a qualified firm(s) is located to perform the project, the procurement is offered to the Small Business Adminstration and if accepted is then handled in accordance with the Small Business Administration procedures.

Question. What percentage over the contract estimated cost is the minority contractor able to bid.

Answer. No percentage is permitted. The proposal submitted by the minority firm(s) is reviewed and negotiated to an amount considered to be the "Fair Market Price" which will allow the minority firm to perform the work and earn a reasonable profit.

Question. Give a current status report on the Allport Reclamation Project.

Answer. An agreement has been reached with the contractor and the final contract document is being prepared. We anticipate forwarding the contract to Small business Administration for signature by March 31, 1981.

Question. Is there enough funding in their fiscal year 1982 program for Minerals Research, Minerals Health and Safety Technology, etc.?

Answer. At this time, we believe there is, yes sir.

Reduction of Minerals Import Dependency

Mr. Yates. Are there any initiatives you can cite for us in your new budget which will reduce our dependence on imports?

Dr. Enzer. Yes, sir. We have two initiatives. The first initiative is a requested increase for about $4 million in research and development. The major thrust in this area will be, as I mentioned a few minutes ago, to reclaim, to extract, to produce, to find, some of these strategic minerals from waste materials and from sub-economic resources. For example, there are cobalt, chromium and other metals which are being produced as by-products along with copper and nickel. However, these by-products are not extracted at this time because it would cost far too much for the amounts of metal which would be recovered. This is our first thrust.

The second one relates to a requested increase of $860,000 to do some work in minerals data collection and analysis. We are developing in the Department of Interior a tool called a critical minerals index. We would like to put this index in place.

What we are trying to do is to develop an assessment process and at least once a year look at the risks which are involved in potential disruptions. We will then assess the kind of impact such a disruption might have on the United States. If we think there is a problem with any particular mineral or metal in the future, we will recommend some policy procedures which might be undertaken to prepare ourselves better. We think this is a good process to go through.

The other thing we plan to do with that money is to start some demand analysis. In the Bureau we are working on something called the minerals availability system. It has been funded for the last few years by the administration and Congress. What that will

give us is the capability of assessing actual and potential supplies of about two dozen minerals on what an economist calls a supply curve basis.

What we are now trying to do is to match this with some demand analysis, because whenever you want to do any analysis, both demand and supply are needed. Part of the $860,000 will get us started in this activity which we think is important.

ADEQUACY OF BUDGET REQUEST

Mr. YATES. Does your budget reflect the goals of Congress which were expressed in Public Law 96-479?

Dr. ENZER. That is the materials and minerals bill which was passed?

Mr. YATES. That is right.

Dr. ENZER. Yes, Mr. Chairman, it does.

Mr. YATES. What is your assessment over all of the budget before us, which is the Carter budget? Does it permit you and your staff people in the Bureau of Mines to carry out your responsibilities to the country?

Dr. ENZER. Yes, Mr. Chairman, it does.

Mr. YATES. Ably and well?

Dr. ENZER. Ably and well.

EMERGENCY RESPONSE TO MINERALS SHORTAGES

Mr. YATES. All right. Are there any mechanisms in place to mitigate any short-term impact of mineral disruption?

Dr. ENZER. Perhaps I ought to ask Dr. Morgan to answer that because he just prepared a paper for our Secretary at his Monday hearing which lays out the emergency procedures which are in place in case of a short-term disruption.

Dr. MORGAN. Between the Commerce Department and the Interior Department we are both monitoring the situation with respect to materials. Commerce, of course, covers import and export data through the Customs people to the Census to us. We cover the domestic production and the use.

If there were a problem recourse would be had first to the Export Administration Act of 1979. Under the Export Administration Act the Secretary of Commerce has authority first to monitor exports; secondly, to limit exports if there is an excessive drain on the United States economy, or for national security reasons, as well as foreign policy reasons.

Therefore, the first line of attack is the Export Administration Act.

Then, as for the Defense Production Act, I would like to say that that Act currently expires September 30, 1981. It is highly important that that Act be extended.

If you remember our conversation of last year, between the administration and the Congress there were 30-day extensions, 60-day, 90-day, and so forth, which was certainly confusing all the way around.

Mr. YATES. Yes.

Dr. MORGAN. That Act must be extended because it provides the authority under Title I for priorities and allocations. Authority is

delegated to the Secretary of the Interior under Executive Order 10480 and 11490 under the Defense Production Act.

Therefore, if just export controls were not enough, then the next thing we would implement would be a priority system where we would designate certain fields of use, primarily the military, but also Congress made it perfectly clear that energy applications are deserving of priority assistance under the Defense Production Act.

Therefore, we would say that such orders would have to be filled before others of lower priority.

Mr. YATES. Very well.

Dr. MORGAN. The priority system would break down fairly soon once you involve more than, say, 10 percent of the total supply. Then we would move to an allocation system in which the government would take charge of the entire supply of the material and would allocate what there was, meeting critical uses as fully as possible, and in other less essential uses forcing some degree of conservation and/or substitution.

Once you get into allocations, then we would begin to look at the strategic stockpile because undoubtedly some military applications might not get enough from an ordinary allocation of the existing supply. However, I do not think we would dip into the strategic stockpile until we had pretty tight control on the total normal supply.

Then, if this did not solve the problem, that is where Title III of the Defense Production Act, which authorizes supply expansion would come in. As you well know, sir, because you were one of the leaders in putting the $3 billion into Title III for synthetic fuels, there is no funding under Title III for non-fuel minerals. Therefore, we would have to come to the Congress with an expeditious request for some form of financing under Title III for non-fuel minerals to expand the supply.

APPROPRIATION FOR BRUCETON (PENNSYLVANIA) FACILITIES

Mr. YATES. Let's talk about Bruceton for a moment. Is the administration going to ask for an appropriation to expand that project?

Dr. ENZER. Yes. A few weeks from now we will come through with an appropriation.

Mr. YATES. Has that been approved by OMB?

Dr. ENZER. It has not yet gone to OMB.

Mr. YATES. Why would it not be part of your present budget rather than waiting?

Mr. OYLER. The pure fact of the matter on that, Mr. Chairman, is a matter of timing. After the law was passed we had a certain amount of preliminary planning to do.

Mr. YATES. All right.

COORDINATION OF RESEARCH CENTER ACTIVITIES

You have a number of research centers throughout the country. How is your research work distributed and coordinated?

Dr. ENZER. Mr. Kenahan can answer that. We have a very good organization. We think it is very good.

Mr. KENAHAN. We have 10 research centers located across the country, one in Avondale, Maryland, and the others as far away as Albany, Oregon. There are about 1,300 people in these centers and each center is managed by a research director.

The programming for research is managed in Washington. We have three program managers, one in health and safety, one in environmental technology, and one in mineral resources technology.

These managers are responsible solely for the research programs. The daily operation of the centers is conducted by research directors who report to a research center operations director in Washington. In all of these research centers the program managers and the research center operation manager report to me.

Mr. YATES. How often do they report?

Mr. KENAHAN. They report daily.

Mr. YATES. On progress?

Mr. KENAHAN. We have monthly and quarterly progress reports, and telephone conferences every two weeks with the research directors. We also have quarterly meetings of all the research directors and Washington office managers.

Mr. YATES. Most of your research is done in two centers, Pittsburgh and Twin Cities. The rest of the centers do only 15 percent of the work.

Mr. KENAHAN. Not really. Most of the mining, health and safety mining research, that is, is done in Pittsburgh and Twin Cities. They are two of our largest centers.

Twin Cities is about 90 percent health and safety mining research. Pittsburgh is virtually 100 percent health and safety mining research. The total budget for the 10 research centers and mineral research directors in fiscal year 1982 is $115 million. This year it is about $110 million.

Mr. YATES. This booklet we have, the book you put out on research for 1980, would seem to indicate that Avondale, Tuscaloosa, Rolla, Boulder City and Salt Lake City took less than 15 percent of all the research activity.

Mr. KENAHAN. That is primarily because in the old metallurgy research centers which they represent, virtually all of the research was done in-house and very little was contract work.

The health and safety program, the largest in the Bureau, a $60 million program, is about 65 percent contract work.

The moneys which are allocated to Pittsburgh are about $15 million each year for in-house work. Contract monitoring funds could be 2 to 3 times that.

Mr. MURTHA. Will that health and safety budget be cut?

Dr. ENZER. It probably will be cut somewhat, Mr. Murtha. However, the cuts will be relatively modest. We will be able, by dropping some of the low priority projects, and extending some others, say from one to two years or from two to three years, to retain the basic program very much as it is. These are our present indications.

Mr. YATES. Should any of your facilities be combined with others? Is there work enough for all of them?

Mr. KENAHAN. At the present time, Mr. Chairman, we actually are low in personnel. We have plenty of work.

Mr. YATES. Is that a reason——

Mr. KENAHAN. Because of the freeze and the personnel ceiling we really do not have enough people to do all the work required.

Mr. YATES. Is that a reason to combine installations or not?

Mr. KENAHAN. No, sir, I don't think so.

Mr. YATES. Will you be allowed to hire more people?

Mr. KENAHAN. Hopefully with the emphasis now in the mining and metallurgical areas, especially the lift we got from the New Materials Policy Act of 1980 which calls for increased mining and metallurgical research, we may be able to get more people.

PHASEOUT OF INDUSTRIAL WATER LABORATORY

Mr. YATES. Let's talk about the industrial water services. You will phase that out in this budget?

Dr. ENZER. Yes.

Mr. YATES. This operation has been in existence for more than 40 years.

Dr. ENZER. It has been in existence for a long time.

Mr. YATES. Why are you phasing it out?

Mr. OYLER. A matter of taking a look at priorities, Mr. Chairman, in terms of what the budget allowances are. This was work we were doing on a reimbursable basis for other agencies as opposed to our direct mission.

Mr. YATES. What happens to the resources devoted to these programs?

Mr. OYLER. The moneys will not be transferred to us from other agencies as formerly.

Mr. YATES. What happens to the capital equipment? Do you have any?

Mr. KENAHAN. Very little, just small laboratory equipment.

Mr. YATES. What happens to the people?

Mr. OYLER. The people are reprogrammed in the 1982 Carter budget to take care of the increase which Dr. Enzer mentioned in the data collection area, Mr. Chairman.

TECHNOLOGY TRANSFER OF HEALTH AND SAFETY RESEARCH

Mr. YATES. The budget justification on page BM-3 would indicate that your Minerals Health and Safety Technology Program is designed to increase the rate of transfer of new health and safety technology into mines and minerals processing plants. How do you propose to do this? What techniques will you use?

Dr. ENZER. We do have a transfer system established. I think Mr. Kenahan can relate some of the activities we are engaged in, Mr. Chairman. In fact, it is a very good program.

Mr. KENAHAN. We have a very active technology transfer function in the Bureau which handles research results and accomplishments from the three technical areas I mentioned previously, not only health and safety but mineral resources and the environmental program.

We transfer our technology through publications, through meetings, symposia, and open industry briefings. For example, we will go to a large coal show in the near future and we will have our publications there as well as prototypes of some of the equipment

we have developed. We have been very successful in the past in transferring our technology in that way.

Mr. YATES. What successes have you had?

Mr. KENAHAN. I think Mr. Marovelli would like to answer that. He is Director of the health and safety program.

Mr. YATES. Can you give us an example, Mr. Marovelli, or would you rather put them in the record?

Mr. MAROVELLI. We would rather put them in the record.

Mr. YATES. We want to know what you have done. You can point with pride to what you have achieved.

[The information follows:]

EXAMPLES OF ACCOMPLISHMENTS UNDER THE TECHNOLOGY TRANSFER PROGRAM

The most significant accomplishments relative to technology transfer are the result of specific project demonstrations of new hardware developments. Examples of these are listed below:

HEALTH

"Shearer-clearer," a novel dust control technique, reduces exposure of longwall shearer operators to hazardous respirable dust. A number of mines are installing similar systems based on BOM results.

A "Canopy Air Curtain" system mounted over the operator provides him with a curtain of clean air. 65 units are in use.

A "wetted fiber bed" dust collector controls dust generated during continuous miner operation. 90 units have been ordered or installed on mining machines.

A "nonclogging water system" traps coal and pipe scale particles which cause clogging of machine-mounted water spray systems. Some 100 units are in use, with another 200 hydrocyclones, a major component of the nonclogging system, sold by the manufacturer in 1980.

A beta attenuation dust monitor (GCA RDM-301) and a light scattering dust monitor (GCA RAM-1) were developed to measure the concentration of respirable dust and evaluate the effectiveness of dust control techniques in real time. About 63 units of the beta type and 169 of the light scattering units have been sold.

A "fibrous aerosol monitor," developed through joint NIOSH/Bureau funding, is the first instrument of its kind that can detect, instantaneously, the concentration of airborne fibers in the atmosphere. 88 units are in use. this received the IR-100 award in 1978.

An electronic radon daughter dosimeter and a continuous area monitor for measurement of radiation hazards have received patents.

Noise control treatments applied to a coal preparation plant brought an out-of-compliance plant within compliance to Federal standards.

SAFETY

Inorganic cement-grouted roof bolts received the IR-100 Award. Patent licenses have been granted to 3 companies.

Steel-fiber reinforced concrete cribs have been commercialized.

Blind area viewers for improved truck operator visibility are commercially available.

Preshift inspection training modules are commercially available from MSHA Training offices.

Fire protection systems for underground vehicles are commercially available.

Test methods for the flammability hazard of conveyor belts and other mine combustibles are available to the industry.

Automatic fire protection systems for mine vehicles and equipment are commercially available—25 percent of the 25,000 surface truck fleet has been equipped to date.

Remote sealing system for underground fires has been turned over to MSHA.

The Bureau has conducted methane control research using vertical boreholes in 16 different coalbeds representing nearly all the major U.S. coal producing areas and has drained nearly one billion cubic feet of gas. U.S. Steel is using the technique and a U.S. specialist is currently in Australia assisting the Australian coal industry.

Low cost borehole packers are commercially available.

Water spray-fan systems attached to mining machines to both move more air and better direct the ventilating air to the working face where the coal is extracted are

installed on 310 continuous mining machines and 50 additional installations are projected.

To make results on the above example accomplishments known to new technology users, the Bureau developed a mineral research mailing list of 28,000 individuals representing most of the mining and equipment manufacturing companies, academia, and other potential new technology users. This list provides the basis for mailing the Bureau's *Technology News* publication.

ACCOMPLISHMENTS UNDER TECHNOLOGY TRANSFER PROGRAM

Dr. ENZER. Can you mention one good example to the Chairman at this time?

Mr. YATES. One good one or one bad one.

Mr. MAROVELLI. One case is a problem currently critical in longwall mining. This has to do with the fact that longwall mining operations using double drum shears, these large wheels which cut the coal, are having considerable difficulty in complying with the respirable dust standard.

We have met with the industry and worked up a program with them. We will be cost-sharing with them.

However, in the interim we have developed one approach to the problem which we have demonstrated in our laboratories. We then took it to a mine and demonstrated it further. Now there are several other mines interested.

Mr. YATES. Is longwall mining increasing in this country?

Mr. MAROVELLI. Yes, it is. We have something like 100 faces now. It is not increasing at a very fast rate but it is increasing.

Mr. YATES. I remember when I asked you about it last year or the year before you indicated there was not much activity in the field. Now it is increasing?

Mr. MAROVELLI. Yes. I would like to add another example which comes to mind, in the metal mining area.

One of the problems is cooling and ventilation. The deeper you go the more it costs you.

We have developed, using a contractor, a water spray cooler, of 5,000 cubic foot per minute capacity. We demonstrated it in Homestake's Gold Mine where we had 10 built. They worked very well. They did a better job of cooling the air and it took only half the maintenance.

They have now ordered 20 of these.

We are now in the Bureau going to go up to the 25,000 cubic foot per minute capacity. A uranium mine will put money into this to help us. I think that is a very good example.

Mr. KENAHAN. I would like to add something even more pertinent. Much of our technology transfer occurs because we do a great deal of our work in cooperation with industry at the mine site.

One good example is the improved visibility system for large mining vehicles.

A great number of accidents occur on some of these large trucks carrying 200 tons of rock or ore. The drivers are 16 feet up in the air and they can see only 35 percent of the area they are traversing.

We developed a lens which can be put on the right front fender of the truck or the vehicle so that the driver's visibility range is increased to about 80 percent.

In order to develop this we have installed about 100 of these devices onto trucks in active mines. The technology transfer was almost instantaneous. Once the participating mine operators saw the advantage of this system they just accepted it.

Mr. YATES. Mr. Murtha?

COORDINATION OF HEALTH AND SAFETY RESEARCH WITH MSHA AND NIOSH

Mr. MURTHA. Your Health and Safety Program is coordinated with the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. What mechanisms exist to coordinate this program?

Mr. KENAHAN. We have formal memoranda of agreement with MSHA and with NIOSH. In these memoranda we specifically delineate the area with NIOSH, for example, where we will do certain things and they will do certain things.

We have frequent meetings with both organizations. We review their proposals and they review ours. With MSHA, we have a ranking system where all of the projects that the Bureau works on during the fiscal year are reviewed together with MSHA and the Bureau personnel.

We have had several meetings with NIOSH about coordination matters. Also, we have extensive coordination with personnel in the Department of Energy.

Mr. MURTHA. How does the committee system select what research to pursue?

Mr. MAROVELLI. First of all, we get input from the total community of mining rather than just MSHA or NIOSH. We get input from BCR and AMC across the board. However, in the particular case of interacting with MSHA we have what we call a standard project proposal input form, whereby either the Bureau or the MSHA people can come in with a proposal which in their perception ought to be done by the Bureau because of its research capabilities. The MSHA people will have valuable input because they are in the mines and are aware of the day-to-day problems.

That form is designed so there are some dozen criteria relating to the nature of the problem for example, how long it will take to solve the problem, what it will cost, whether it will impact a standard or on compliance, the probability of success, and so forth.

By going through a numerical weighting scheme involving the criteria we can then rank the projects.

For instance, if we are told we have $3 or $4 million available in a particular area then all of those projects above this cutoff point will go into the program. Those below the cutoff point will be deferred into the next year.

However, there is one other factor which comes into play. We are concerned with program balance. We are not always trying to get a short-term and quick fix. If there is an optimum solution that will take four or five years, we want to be sure we get some of that work going.

Therefore, our staff in Washington takes this final ranking which has been worked out inter-agency and they can raise the ranking of some of the longer term projects so they get funded and

simply defer the lower ranking ones which cluster above the break point.

Mr. MURTHA. How about the cost to the other partners? Do they bear some of the cost? Do they contribute to the cost?

Mr. MAROVELLI. Yes.

Mr. MURTHA. Substantially?

Mr. MAROVELLI. Yes.

ALLOCATION OF RESEARCH TO COAL AND METAL AND NONMETAL

Mr. MURTHA. In both the Health Engineering Technology and Safety Hazard Reduction Program, coal gets a much larger share of the budget request. How do you determine the distribution between coal and the metal and non-metal allocations?

Mr. KENAHAN. The present allocation is about $47 million for coal-related work and the rest of the $60 million goes to metal and non-metal research. Actually there is at least a 60 percent cross-over in the research done on coal. In other words, let's say as much as 60 percent of the research we do on coal is applicable to metal and non-metal mining. We therefore feel we are adequately covering both coal and metal and metal problems.

HEALTH AND SAFETY PROBLEMS OF LONGWALL MINING EQUIPMENT

Mr. MURTHA. As the coal mining industry progresses, there is an increase in the use of longwall mining equipment. What are the health and safety problems specifically related to longwall mining equipment?

Mr. KENAHAN. I believe the biggest problem associated with longwall mining is the problem Mr. Marovelli mentioned, the respirable dust problem. As he also stated we are working on that problem. We have come up with at least a partial solution in a very short time.

RESPIRABLE DUST PROGRAM

During this year and also next year we are emphasizing work on the longwall respirable dust problem.

Mr. MURTHA. You mean you have reduced the amount of dust which the miners breathe?

Mr. KENAHAN. That is correct.

Mr. MURTHA. Substantially?

Mr. KENAHAN. Substantially. Hopefully we can eventually eliminate all of it.

Mr. YATES. How do you do that? What do you do about ventilation?

Mr. KENAHAN. Ventilation will enter into part of the solution that is improvements in ventilation. However, as Mr. Marovelli mentioned, we have a method called the Shearer Clearer where we have added new nozzles to the machines which spray water at the face. We have also placed them in different positions. By simply doing that and controlling the air flow we have reduced the amount of dust at the face by as much as 50 percent. It is a very simple application.

Mr. YATES. Just the spraying of the water?

Mr. KENAHAN. Yes, sir, doing it in a different way from the way it has been done in the past.

Mr. MURTHA. It would save $1 billion a year if it works over the long run and once we get the miners subject to the dust over the years out of the mines.

If you are able to eliminate dust to that level it is a tremendous achievement.

Mr. KENAHAN. From 1970 to 1980 black lung payments on the part of the Federal Government have been in excess of $10 billion. We are currently adding another billion dollars each year.

In addition to that, the mine operators are paying another half billion dollars in insurance premiums each year. It is very costly.

Dr. ENZER. We are also working on a machine-mounted dust monitor which will not reduce the dust but will indicate when dust levels become excessive. This device might alert the operator to shut down the machine for a certain period of time until the level reaches acceptable proportions.

Mr. MURTHA. Are there any cutbacks in programs such as this which are so vital in the long run and saving a lot of money?

Dr. ENZER. As far as we know, no. We think these activities will be undertaken.

Mr. KENAHAN. Under any circumstances, we would not cut the funding for the respirable dust program.

RELATIONSHIP TO OFFICE OF SURFACE MINING

Mr. YATES. What is your relationship with the Office of Surface Mining and their problems?

Mr. KENAHAN. The major relationship we have with the Office of Surface Mining is to interact with them on the abandoned land mine work. We act as the research arm for the Office of Surface Mining in subsidence work, mine fires, and surface mine reclamation projects.

MINE ACCIDENT RESPONSIBILITIES AND STATISTICS

Mr. YATES. What do you do with respect to mine accidents? Do you have any jurisdiction there?

Dr. ENZER. No.

Mr. YATES. Do you have an examination team? Do you receive reports? How do you follow up on this so that what happened might be the basis for research?

Mr. KENAHAN. Abandoned mine land work has to do with the Office of Surface Mining. Mine accidents have to do with MSHA.

Mr. MAROVELLI. We are constantly interacting with MSHA. They maintain the Health and Safety Analysis Center in Denver where they have computers which gather all the statistics. They make these available to us. Our scientists then help them modify how the data is handled.

At this very moment in Pittsburgh one of my branch chiefs who would otherwise be sitting here is interacting on these projects in the safety area.

Dr. HENRIE. In the case of a disaster, the Bureau of Mines is part of the solution team, the Director of the Bureau of Mines, Mr. Kenahan, and Bob Marovelli. MSHA has their telephone numbers,

their home telephone numbers, and they would be called in case some technical advice were needed. The Bureau of Mines would support any activity necessary to alleviate the disaster situation.

Mr. KENAHAN. In the past three to three and a half years we have been very fortunate. We have had no major mine disasters.

As a matter of fact, in this past year in coal mining there were 126 fatalities, which is down 18 from the previous year. Likewise there was a decrease of 21 fatalities in metal and non-metal mines.

Dr. ENZER. We can say that in most areas which cause accidents we are doing work with MSHA, be it unsafe roofs, unsafe machinery, exhaust fumes from diesel engines, almost any cause which might lead to an accident. We are involved in trying to reduce dangerous conditions.

RESEARCH COORDINATION WITH OTHER COUNTRIES

Mr. YATES. According to your report the Germans have achieved pretty good success with water infusion and external sprays for dust control. Is that what you are doing?

Mr. KENAHAN. That is what I was talking about previously.

Mr. YATES. How about the dust issue using wet drums?

Mr. MAROVELLI. We are involved in the same approaches.

Mr. KENAHAN. We coordinate our health and safety work with half a dozen foreign countries.

Mr. YATES. Would you put a report in the record on what you do with respect to interrelationship with other countries?

Mr. KENAHAN. Yes, sir.

[The information follows:]

COORDINATION WITH OTHER COUNTRIES ON HEALTH AND SAFETY RESEARCH

The Bureau has bilateral agreements with the major coal producing countries, West Germany, United Kingdom, Poland, and Canada. It is negotiating a final agreement with Yugoslavia. Coordination ranges from information exchange, to exchange of specialists, to exchange of equipment for testing in the respective cooperator's mines and laboratories. In the case of Poland, a number of research projects are financed under the Maria Sklodowska-Curie Joint Fund.

The Bureau supports a member on the International Committee for Coal Research who periodically reports to the Committee and receives similar reporting from the members representing Australia, Belgium, Canada, Federal Republic of Germany, France, Japan, Netherlands, South Africa, Sweden, and the United Kingdom. It also supports a member in a coordinating group of six Directors of Research representing establishments in the United Kingdom, France, Belgium, West Germany, and the United States.

The Bureau is active in information exchange through the International Energy Agency (IEA). It participates in international safety research symposia such as the forthcoming XIX International Conference of Research Institutes in Safety in Mines scheduled for October 1981 in Poland. The Bureau has eight technical papers on this program.

STRINGENCY OF HEALTH AND SAFETY STANDARDS

Mr. YATES. Are your standards too stringent or not stringent enough?

Mr. KENAHAN. I don't think I can honestly answer that. I would have to say our standards are very good. I don't see how you can ever say they are too stringent if it will save a life.

Dr. ENZER. Mr. Marovelli will give a speech in May on comparative safety performance.

Could you perhaps indicate to the Chairman how the United States does compare in some areas with other major mining countries?

Mr. YATES. Mr. Marovelli came back from Poland a couple years ago and told us about it.

Where are you going this year?

Mr. MAROVELLI. I don't think I am going anywhere this year. I couldn't even get to Chicago last week.

First of all, you are talking about two different situations, the European situation, different kind of mining, different depths of mining, different social system, different market situation, and so on. You are really comparing apples and oranges.

However, within that context in some cases and from their perception, our standards, for instance the standard on respirable dust, would be very rigorous.

In other cases their standards from our perception, for instance on methane where they are much deeper and their gases are much more excessive, they have had to be very careful about the kinds of explosives they use in their much gasier atmosphere.

For instance, in Alabama we now are faced with that problem. We may have to make our explosives permissibility standards much more rigorous than they are now. It is mixed. Nobody has superior standards per se, or tougher standards per se, than anybody else. In some cases they are tough; in some cases not so tough.

PROGRAM INTERACTION WITH DEPARTMENT OF ENERGY

Mr. YATES. Do you get money from the Department of Energy?

Mr. KENAHAN. Yes, sir.

Mr. YATES. What do you do for them?

Mr. KENAHAN. Generally it is in the area of health and safety because some of the work they do on coal productivity obviously interacts with health and safety research.

Mr. YATES. How much money do you get from them?

Mr. KENAHAN. A little over $1 million this year. Since 1977 when the determination order was made that the energy functions from the Bureau of Mines would go to DOE, I think we received maybe $3 or $4 million in the beginning.

We also supplied something like 33 people to monitor certain contracts for them during the initial year. Now we are down to a point where we are still monitoring contracts but only up to the extent of about five man-years.

DIESEL ENGINE RESEARCH

Mr. YATES. What about problems with the diesel engine? Are you doing research on this?

Mr. KENAHAN. Yes, sir.

Mr. YATES. Any success?

Mr. MAROVELLI. We have had some success in measurement of gases, and so forth.

Mr. YATES. What is the problem with diesel emissions? Is it nitrous oxides?

Mr. MAROVELLI. Nitrous oxides which are toxic.

Mr. YATES. How much of a problem is that?

Mr. MAROVELLI. That is somewhat controversial as to what the medical effect is on miners. NIOSH made a study several years ago. They didn't really come up with any hard proof.

Mr. YATES. Are there any regulations respecting the use of diesels.

Mr. MAROVELLI. There are regulations having to do with the amount of emissions you can have in the mine. The use of diesels is a function of the ventilation system. Therefore, if you have a very good ventilation system this problem is not so bad. If it is closed, not too much air moving, you have to be very concerned.

In the State of Kentucky, where they have punch coal mines—you are on the mountain, the seam comes through on both sides—they will drive a tunnel through and have natural draft air coming through and shooting right on out.

Mr. YATES. There is no problem there?

Mr. MAROVELLI. That is right. Whereas in a deep underground mine in Illinois using diesels it would be a tougher problem.

Mr. YATES. What do they use when they don't use diesels?

Mr. MAROVELLI. Electricity, battery-powered.

BATTERY RESEARCH

Mr. YATES. Do you do research on batteries?

Mr. MAROVELLI. Yes, we have done some research on better types of batteries.

Mr. YATES. Are you still doing it?

Mr. MAROVELLI. Yes, both larger scale batteries and even down to the battery for the miner's lamp. We have developed a battery for the miner's lamp which is lighter in weight. We have hope for it.

We think it is a success. However, whether it will be accepted quickly by our industry we don't know because it requires a slightly different situation in the way you charge the battery, which means that the older mines which have their lamp-charging setups will not switch over. There is capital investment involved. However, the newer mines are apt to adopt this lighter lamp.

Mr. YATES. Can that same success in lightening the battery work for your larger batteries?

Mr. MAROVELLI. No; I think it is a different problem there with the larger batteries. I don't know whether we are strictly trying to get down weight.

Mr. YATES. You are doing battery research. DOE is doing battery research. I suppose industry is doing battery research. Nobody has broken through yet, have they?

Mr. MAROVELLI. It is a tough problem.

ROCK DUSTING RESEARCH

Mr. YATES. Are you doing any research to simplify compliance with rock dusting regulations?

Mr. KENAHAN. Yes, sir. We have been working on dusting problems for many years.

Mr. YATES. Are there any alternatives to rock dusting which you can foresee?

Mr. KENAHAN. I don't think at present there are any ready alternatives in U.S. mines. However, there may be different kinds of materials which can be used for dusting, something that will be more efficient.

Mr. YATES. Is there an alternative for rock dusting?

Mr. MAROVELLI. Not at the present time. You can perhaps use salt, but you are still putting some sort of a coating on the dust.

Mr. YATES. Water is what you use as well, is it not?

Mr. KENAHAN. Yes, sir.

METHANE DRAINAGE RESEARCH

Mr. YATES. Have you had success in reducing concentrations of methane?

Mr. KENAHAN. Yes. We have several projects on methane drainage. One of the most successful is to drain off the methane prior to mining.

Mr. YATES. What about capturing the methane?

Mr. KENAHAN. That is what happens to it actually. Some of the methane which is drawn off is collected. This is not part of the Bureau's mission. That would be DOE.

Mr. YATES. Don't you have to follow it up?

Mr. KENAHAN. We drain it off and then someone else takes it. It can be drained off and used as a fuel. Some of the amounts drained off are significant.

HEALTH AND SAFETY TRAINING RESEARCH

Mr. YATES. How much of your budget is for the development of training programs?

Mr. KENAHAN. About $3 million.

Mr. YATES. Is that enough?

Mr. KENAHAN. I believe so.

Mr. YATES. Is it too much?

Mr. KENAHAN. No, I don't think it is too much. As you recall, there was a study about two years ago regarding training for mining health and safety. I think the main conclusion of that study was that there was adequate training. If there is a problem, it was in the quality of the training.

Mr. YATES. How does the result of your research get into the hands of industry?

Mr. KENAHAN. Again through our technology transfer function.

OIL SHALE MINING RESEARCH

Mr. YATES. Are you developing regulations to cover oil shale mining?

Dr. ENZER. No, sir.

Mr. YATES. Do you have any other activities in oil shale mining?

Mr. ENZER. Although we have terminated our environmental activities in oil shale mining, we are working on the health and safety problems of oil shale explosibility and burning and methane problems.

ROLLOVER PROTECTION STANDARDS RESEARCH

Mr. YATES. Is industry working to develop criteria for rollover protection structures on heavy mining machinery?

Mr. KENAHAN. Yes. We are doing work on it. I don't know whether industry is developing any new criteria.

Mr. YATES. Mr. Marovelli shakes his head yes.

Mr. MAROVELLI. I was going to volunteer the fact that the criteria for large equipment were developed back in the '60s with the Defense Department and the automotive industry involved. They were developed for the largest vehicle at that time, weighing something like 104,000 pounds.

Now with the larger vehicles double that weight, as high as 30 feet, coming into the industry, MSHA is strapped with enforcing those regulations. We fear the criteria are wrong.

Therefore, we have gotten together with the Society of Automotive Engineers, as well as with the manufacturers, and we have an ongoing program with Woodward Associates in California where we are actually checking out the ROPS by rolling large vehicles. For instance, International Harvester has given us a vehicle, and another manufacturer has, costing as much as $1 million. We are rolling these down slopes, taking photos and analyzing failures.

Mr. YATES. When will you complete the program?

Mr. MAROVELLI. I think that is due to be completed this year. We have had several rolls out there already and the analysis of that data is in progress.

OXYGEN SELF-RESCUING DEVICE RESEARCH

Mr. YATES. Are you involved in developing an oxygen system for use in mine accidents?

Mr. KENAHAN. Yes.

Dr. ENZER. We have developed a two-stage device.

Mr. YATES. This is the so-called Auer device? What is the device?

Mr. KENAHAN. The Auer device was mentioned in a newspaper article a few months back. It was perhaps misinterpreted when the 1969 Coal Mine Health and Safety Act was written. It was not an hour device but only a 45-minute device and probably named after the man who invented it.

One of the devices developed by the Bureau of Mines is actually a combination of a 60-minute self-contained self-rescuer plus an additional 10-minute device the miner wears on his belt. The two are compatible. The larger unit would be stored close by and it can be hooked into the 10-minute device in case it is needed.

Mr. YATES. Are they being adopted by the mining companies?

Mr. KENAHAN. MSHA wanted to implement the self-contained self-rescue device into the mines on December 21st this past year. There was a legal battle regarding the date of implementation.

I think the last word is that the date has been moved up to June 21, 1981.

Mr. YATES. For implementation?

Mr. KENAHAN. For implementation, yes, sir.

Mr. YATES. What is the cost per unit?

Mr. KENAHAN. About $600.

Mr. YATES. Per miner?

Mr. KENAHAN. Per miner. There are something like 133,000 coal miners in the country.

LAKE LYNN LABORATORY

Mr. YATES. Would you put in the record the amount of cost to develop the Lake Lynn facility?

Mr. KENAHAN. Yes, sir.

Mr. YATES. Also include the amount you have budgeted in fiscal year 1982 for operation of the laboratory and the number of people required to operate it.

Mr. KENAHAN. Yes, sir.

[The information follows:]

LAKE LYNN LABORATORY DEVELOPMENT COSTS AND FISCAL YEAR 1982 WORK PROGRAM

A total of $10,056,095 was spent to develop the Lake Lynn facility.

Following completion of the facility construction fiscal year 1982, the work program for the remainder of the fiscal year will consist primarily of break-in tests. For the single entry section, work includes check out of instruments and determination of the acoustic characteristics of the facility by means of small gas explosions in order to determine the best way to set up experimental coal dust explosions in an 18 foot wide entry. For the triple entry section, work also includes check out of instruments and facility acoustic characteristic by means of small gas explosions to determine how to set up controllable coal dust explosions in the three 18 foot wide entries having 6 crosscuts. For the longwall section, work involves similar check out of instruments and acoustic characteristics of the entire underground facility.

The operational cost projected for Lake Lynn Laboratory in fiscal year 1982 is $1,00,000. This cost is identified as the total for salaries (staff of 18), supplies, maintenance, utilities and security expenses.

Mr. YATES. We will break for lunch and resume at 1:30.

AFTERNOON SESSION

MINERAL ENVIRONMENTAL TECHNOLOGY RESEARCH

Mr. YATES. Minerals Environmental Technology is the next subject. You want $6 million for mine waste control. How much of that is for the demonstration of the underground coal waste disposal system?

Dr. ENZER. Do we have that number?

Mr. YATES. Do you want me to ask something else?

Dr. ENZER. We have that, Mr. Chairman.

Mr. KENAHAN. May we submit that for the record?

Mr. YATES. All right. I suppose you don't have the amount you spent on the projects in 1980 and 1981.

Dr. ENZER. We probably have it, Mr. Chairman.

Mr. YATES. Let's put that in the record.

[The information follows:]

UNDERGROUND DISPOSAL OF MINE WASTE

The amount of Bureau of Mines funding allocation for the underground disposal of coal mining waste under the Mine Waste Control subprogram of the Minerals Environmental Technology program for fiscal year 1980 was $33,147 (OSM contributed $187,835); for fiscal year 1981. $250,000 is programmed; and for fiscal year 1982, $250,000 is programmed.

Mr. YATES. What is happening on your mined land reclamation project?

Dr. ENZER. Are you thinking of the $16 million?

Mr. YATES. Yes.

Dr. ENZER. We signed a Memorandum of Understanding with the Office of Surface Mining in January and we just agreed on seven projects that we would undertake for them.

Mr. YATES. Where were these projects located?

Dr. ENZER. Four in Pennsylvania, one in Kansas, one in Wyoming and one in Alabama.

Mr. MURTHA. Mr. Chairman.

Mr. YATES. Just a second. The cost of all of these will be $16 million?

Dr. ENZER. The cost of all of these will be about $16 million.

Mr. YATES. What do you propose to do to spend this money?

Dr. ENZER. Well, let me see. Five of these are subsidence projects, Mr. Chairman, and two of them are projects that would control mine fires.

Mr. YATES. Why do these few projects cost $16 million?

Dr. ENZER. Let me ask Mr. Forshey who has been the one who has been doing the negotiation.

Mr. FORSHEY. They are rather large projects, Mr. Chairman.

Mr. YATES. Give me an example of how large they are.

Mr. FORSHEY. Three to four million dollars.

Mr. YATES. Covering how much territory?

Mr. FORSHEY. Tens of acres.

Mr. YATES. Tens of acres?

Mr. FORSHEY. Yes. Our historical experience has shown that projects of this type run from three to four million dollars.

Mr. MCDADE. What you are talking about is trying to preserve generally built-up areas, areas that have homes, churches, businesses, schools, etc., on the surface which unless you undertook this work would be destroyed. I think the record ought to reflect that in terms of a cost benefit ratio, in many cases, we have $100 million in value sitting above the surface. It is threatened unless this work is done so that the $3 million while it is expensive because you have to drill down and fill the cavities and stabilize the surface which is sometimes $1 million or $2 million. Those figures are usually ball park figures, isn't that correct?

Mr. FORSHEY. Yes.

Mr. MCDADE. I think when you respond to the Chairman it is important that the record reflect that we are not talking just about raw land, we are talking about getting the priority projects that we are using. We are using the money out of the trust fund in the abandoned mine reclamation fund and the passthrough to the Bureau which so far has demonstrated the expertise to get out front and hit these very critical projects. I think we need to embellish the record in this respect.

Mr. YATES. I would appreciate that.

[The information follows:]

BENEFITS OF SUBSIDENCE CONTROL DEMONSTRATION PROJECTS

Eight recent Bureau of Mines mined land demonstration subsidence control projects initiated during 1977 and 1978 involved an average area of slightly over 100 acres. They had a total population of 8,770 persons, occupying 28 hundred dwellings and utilized 307 public buildings, including schools, churches, and business establishments. Funding for these eight projects totaled $18.6 million and protected property with an estimated value at that time of $144 million. This estimate does not include the value of public utilities such as water and sewer facilities, streets, and utility lines. Neither do cost estimates here measure the value of peace of mind to the residents nor added protection to public health and safety.

An earlier project, begun in 1975, was an Appalachian Regional Commission project in Scranton, Pennsylvania, in an area of 287 acres with an estimated population in excess of 20,000. This project was completed at a total State/Federal cost of $4.8 million and protected property having a total estimated value at that time of $118 million.

It is possible to conclude that in general $1.00 spent on subsidence control in a heavily populated urban area is worth as much as $20 to the immediate beneficiaries—the general public and the community as a whole.

When considering cost to benefit figures for upcoming subsidence projects to be funded with the $16 million passthrough funding, one can assume they will fall with the range demonstratable in prior work. Firm estimates will be forthcoming with the completion of exploratory work and engineering planning.

STATUS OF MINED LAND PROJECTS FOR 1981

Mr. YATES. When do you intend to start on these projects?

Mr. FORSHEY. We have engineering studies underway already in several of them.

Mr. YATES. When will those be completed?

Mr. FORSHEY. The engineering studies should be completed in three to six months.

Mr. YATES. Three to six months?

Mr. FORSHEY. Yes, sir.

Mr. YATES. Is that expeditious now?

Mr. FORSHEY. Yes, sir.

Mr. YATES. All right.

Mr. MURTHA. Mr. Chairman, I just want to compliment the Bureau for the work they have done in western Pennsylvania. The scope is not as long as the subsidence project but I would suggest now that OSM is going to be downgraded. The Bureau of Mines should take this on as a supervising agency because they have the expertise in this area. They have done absolutely magnificent work in restoring land along highways that were eyesores for years and turned it into valuable property. I just can do nothing but compliment them on the work that they have done in the last couple years in the areas that I visited that had substantial problems. They have done it at a very reasonable cost.

Mr. MCDADE. Will my colleague yield?

Mr. MURTHA. Yes.

Mr. MCDADE. I concur in the statement you are making. I want to say for the record there is no legal impediment to the committee at all continuing to engage in this practice of transferring from the reclamation fund to the passthrough to the Bureau that trust fund to get at these projects that the committee has seen fit to do in the past.

Dr. ENZER. We have raised this issue with the Secretary who may or may not make a decision on what you just mentioned.

Mr. MURTHA. I hope you will pursue it because I have been very impressed that you have the expertise. I would say that you would

probably have to transfer people to OSM in order to supervise it or it would be substantially delayed if some other agency in the Government did it.

Mr. YATES. Is there any other possible source of financing for this project?

Mr. KENAHAN. No, sir.

Mr. YATES. Other than Government?

Mr. KENAHAN. Other than passthrough from OSM, we have no other direct appropriations for abandoned mine land work.

Mr. YATES. I didn't mean that. Is private industry likely to do a project like this? If the Government does not do it, what will happen?

Mr. KENAHAN. I am afraid it will remain as it is and actually become worse.

Mr. YATES. Well, when it remains as it is, does that mean it continues to deteriorate, does it continue to subside? What does that mean?

Mr. KENAHAN. May I give some examples perhaps?

Mr. YATES. Yes, that is what I am trying to find out. I have the impression that the subsidence process is a continuing one.

Mr. KENAHAN. Allow me to address that just a little, please.

The two major problems are subsidence and mine fires. In the area of subsidence, there are something like eight million acres that have been undermined as a result of mining. This includes both coal and noncoal. Five million of those damaged acres are coal and three million metal and non-metal are due to lead and zinc mining. Two million acres of the coal have already subsided. Four hundred thousand acres of that two million are in urban areas. We are talking about areas near 300 cities and towns.

There are 261 coal fires burning in abandoned mines in 16 of the 26 coal-producing States. The problem is not all in Pennsylvania. Many of the abandoned mines are in Pennsylvania but it also includes Colorado, Montana and Wyoming.

Mr. YATES. You forgot southern Illinois.

Mr. MCDADE. Twenty-one states, I think.

Mr. KENAHAN. There are 26 coal-producing States and there are 300 coal refuse fires now burning.

MINE FIRE IN CENTRALIA (PENNSYLVANIA)

Mr. YATES. Why don't you have a budget request for 1982?

Mr. KENAHAN. It costs about $10,000 an acre to control a coal refuse bank fire.

Mr. YATES. Does that mean to extinguish it?

Mr. KENAHAN. No, sir, that is just to control it. The Centralia fire up near Wilkes-Barre has been burning for 18 years. There has been about $3.5 million spent on it and it is still burning, and it will continue to burn unless something is done about it.

Mr. YATES. What is burning, the coal vein? Tell me why they cannot put the fire out.

Mr. KENAHAN. The estimates to control or extinguish that fire range anywhere from $22 million to something like $85 million. If we dug it out completely, extinguished it and then put the material back, it would cost $85 million.

Mr. YATES. Is it that you cannot get to the fire?

Mr. KENAHAN. It is almost impossible to extinguish it because of the way it is burning without complete excavation. There are underground tunnels running every which way and the fire in the matter of a month may jump a barrier and start in another location.

Mr. YATES. Can't you flood it?

Mr. KENAHAN. No, sir. They have tried injecting material into it to suffocate it and that has not worked.

Mr. YATES. Well, staff tells me that the Office of Surface Mining has a proposal to do it for less than a million dollars.

Mr. KENAHAN. Not to put it out, sir.

Mr. YATES. Just to watch it, do you think?

Mr. KENAHAN. That is a study they are proposing.

Mr. MCDADE. Great studiers.

Mr. YATES. Then should we just let it burn?

Dr. ENZER. The cheapest option was $23 million and that was to buy them out, was it not?

Mr. KENAHAN. There is another option which we don't even know if it is legal and the decision would have to be made by the Office of Surface Mining. That is to buy the homes of the 400 to 500 families. That might cost about $15 million and you still have to contend with the fire but it would be a lot easier to control if there were no people there.

Mr. YATES. Where is this, in Centralia?

Mr. KENAHAN. In Centralia, Pennsylvania.

Mr. YATES. Which is near Wilkes-Barre.

Mr. KENAHAN. About 60 miles from there.

Mr. MCDADE. Unfortunately, Mr. Chairman, it is a built-up area. The assessed valuation of the town is about three to four million dollars and it is an enormous problem because the fire is subterraneous spread through all the channels of the old abandoned workings.

Mr. YATES. Is this anthracite?

Mr. KENAHAN. This is anthracite which is much more difficult to control or extinguish than bituminous fires.

Mr. YATES. Have they tried to flood it?

Mr. KENAHAN. I don't really know if they have in past years. It has been burning a long time, 18 years.

RELATIONSHIP TO OFFICE OF SURFACE MINING

Mr. YATES. Well, at any rate you don't have any budget request for this year, have you, for this program?

Mr. KENAHAN. Not for this program, no, sir. That type of activity was turned over to the Office of Surface Mining when it was created in 1977.

Mr. YATES. We asked them about abandoned mines. As I understand it, we put this in the Bureau of Mines because we thought the Bureau of Mines could do a better job.

Mr. MURTHA. That is right.

Mr. YATES. Now are you doing a better job than OSM could do?

Mr. KENAHAN. We are doing the work for them. That is where we get our money for this kind of work from OSM.

Mr. MCDADE. You get the money from this committee.

Mr. KENAHAN. The $16 million was transferred from OSM to us.

Mr. YATES. Yes.

Mr. KENAHAN. We just got that money very recently and we have already identified projects covering the $16 million.

Mr. YATES. Half a year has gone by. Why do you just get the money now?

Mr. KENAHAN. Because of Government red tape. We just got the actual money to spend about three weeks ago.

Mr. YATES. What is the $16 million to buy?

Mr. KENAHAN. Just those projects which we have identified.

Mr. YATES. Then how long will it take to work on those projects?

Mr. KENAHAN. Some of them as soon as we can get bids out and let contracts.

Mr. YATES. I know but how many years will this take?

Mr. KENAHAN. Not years, no, sir. We will get some of them started this year.

Mr. YATES. I know that but how long will it take you before you complete them?

Mr. KENAHAN. One to three years.

Mr. YATES. You said two of the projects were ongoing fires. Did I misunderstand you?

Dr. ENZER. Two of the projects are fires.

Mr. YATES. And they are going now. Neither of the fires is in Centralia?

Dr. ENZER. One of them is in Wyoming and the other one is the Centralia mine fire but it is a relatively small amount here.

Mr. YATES. How much?

Dr. ENZER. Seven hundred fifty thousand dollars.

Mr. YATES. What are you going to do with $750,000 for the Centralia fire?

Mr. FORSHEY. That would be for the support of the exploratory drilling. It will not extinguish or control the fire.

Mr. YATES. What will they do with the $750,000? They drill a hole to see if the fire has gotten to a certain place?

Mr. FORSHEY. They will drill a series of holes to determine the rate and extent of progress of the fire.

Mr. MCDADE. Are you trying to determine the growth of the fire?

Mr. FORSHEY. Yes.

Mr. MCDADE. The real problem, if the Chairman will yield, is that the funding is only because of the action of this committee that you have any money to spend on this at all. The bulk of this money is already surface mining and as my friend from Pennsylvania indicated in the previous question it is under review as to whether this ought not all be transferred to the Bureau for an aggressive program. When are we scheduled for the Secretary?

Dr. ENZER. On Friday, sir.

Mr. MCDADE. I hope you tell him that we hope we can have an answer on Friday.

Mr. YATES. An answer on Friday for what, Joe?

Mr. MCDADE. Whether we would not just move all the resources of that trust fund on coal. The people in the Bureau are the people, as Mr. Murtha has indicated, who have the experience and it is my opinion that they have the experience and know-how to do these jobs. The problem of the passthrough money, they just got the money a few weeks ago. Last year it was even worse, we

appropriated it and you got it at the end of the fiscal year as I recall. You got it in September.

Mr. YATES. Next year will be even worse, they will not get any.

Mr. MCDADE. Unless we do something. We will have to see about that. The money is there and earmarked. This is an earmarked trust fund which can be and is dedicated toward this problem. The difficulty is that people who have the expertise don't have immediate access to their resources. Our committee has made it possible for this work to continue and we hope we can see this whole fund transferred to the Bureau where they can work.

Dr. ENZER. One of the issues that someone, I presume the Solicitor would need to resolve is looking at is the language of the act which says that the Secretary through the Office of Surface Mining shall—We need an intepretation as to what that means.

Mr. MCDADE. Well, if we reach that impediment we appropriate passthrough money and that is a more cumbersome route but it may be the one we will have to follow.

I thank you, Mr. Chairman.

RESEARCH ON TECHNOLOGY GAPS

Mr. YATES. All right. You indicate that research will be pursued to identify technology gaps which have arisen as a result of recent environmental legislation. What technology gaps do you expect to find?

Mr. FORSHEY. We will be doing research on technology gaps both in terms of mine waste management control and relating to the question you asked earlier on the impact of mineral processing waste control relating to various legislative requirements of the Environmental Protection Agency.

Mr. YATES. Does this come into being as a result of recently passed environmental legislation?

Mr. FORSHEY. Yes, sir.

Mr. YATES. Which act specifically?

Mr. FORSHEY. The Resource Conservation and Recovery Act.

Mr. YATES. How much money will be needed to carry out the purpose of the act?

Mr. FORSHEY. I don't have that.

Mr. YATES. Do you have an answer or do you want to supply it for the record?

Mr. FORSHEY. We will supply it for the record, sir.

Mr. YATES. All right.

[The information follows:]

IDENTIFICATION OF TECHNOLOGY GAPS UNDER RESOURCE RECOVERY ACT

The Bureau initiated this project in fiscal year 1980 under the Minerals Environmental Technology program. Funds allocated in fiscal year 1980 were $75,000 and in fiscal year 1981 were $100,000. Programmed funds in fiscal year 1982 are $100,000. This project also appraises other regulations such as the Surface Mining Control and Reclamation Act, the National Environmental Policy Act, and the Clean Air Act to develop a technologic base to enable the minerals industry to comply with regulations promulgated by other Federal agencies.

MINE FIRE CONTROL TECHNOLOGY

Mr. YATES. The fighting fire with fire method, what does that mean? Is this like the Park Service fights fires out in the field?

Mr. KENAHAN. I believe you are talking about the controlled burning technique where we would actually accelerate the burning by adding oxygen but under controlled conditions.

Mr. YATES. You have more than 200 fires in coal outcroppings in abandoned coal mines.

Mr. KENAHAN. I believe you are referring to the fact we would let the fire burn under controlled conditions and develop some means to recapture the energy from it. We could accelerate the burning so that if it were not a large area we could burn all of the fuel up in a shorter time.

INNOVATION IN NONFUEL MINERALS INDUSTRY

Mr. YATES. Let me ask you about that last question about identifying technology gaps. Is that an ongoing project or is this ongoing?

Mr. FORSHEY. It is ongoing.

Mr. YATES. All right. Well, you say in your justification about mineral resources technology there is a lack of innovation in the Nation's nonfuel minerals industry. Why the lack of innovation, is there no imagination in American industry?

Dr. HENRIE. Mr. Chairman, may I answer that?

Mr. YATES. Of course, Dr. Henrie.

Dr. HENRIE. We have had several symposia and studies done by Congress, some by the American Association for Advancement of Science and by the Henniker group, and I think that it has been an assumption for a long time that innovation is a direct result of research and development. As we made these studies we found that there are many aspects of the innovation process in which research and development is only one part. So you can have a good research and development organization, but if the proper decisions are not made up the line, you still don't get innovation in that particular aspect of your technology. I really think that we have reached a time in our scientific history when we really have to take a look at ourselves and see what role we are going to play in the economic system.

Mr. YATES. "We" meaning who?

Dr. HENRIE. The scientists.

Mr. YATES. The scientists or the Bureau of Mines?

Dr. HENRIE. The chief scientists, and the Bureau of Mines, and all other technology organizations.

Mr. YATES. Where is industry in this?

Dr. HENRIE. Well, industry has been laying off research people and putting those remaining more on short-range problems. That is because industry management has felt they are not getting all the technology development they should for the money that is spent. However, the last few papers that have been written on this indicate that research and development is a good investment, it is necessary to keep technology going, and we have to find better systems to integrate our research and development into our economic system.

Mr. YATES. Is industry going to change its mind and do it then?

Dr. HENRIE. Well, I was meeting with 14 or 15 of them yesterday in Salt Lake City and I thought that, yes, they are going to turn around and be more aggressive.

Mr. YATES. Does that mean you don't have to do it then?

Dr. HENRIE. It means that some of it we won't have to do if they pick it up and run with it better.

Mr. YATES. What if they don't pick it up and run? Does it have to be done?

Dr. ENZER. Yes, sir, it has to be done.

Mr. YATES. Either by government or industry?

Dr. HENRIE. Yes.

Dr. ENZER. Yes.

Mr. YATES. Up to now industry has not been doing it.

Dr. ENZER. If I may add a thought to what you have said, Mr. Chairman.

Mr. YATES. You may, indeed.

Dr. ENZER. This seems to be in an area where it is exceedingly difficult to patent a discovery and if you cannot patent it or somehow utilize what you found there simply is not a very great incentive to spend a lot of money. Very often it may not get done unless government does it.

IN SITU MINING RESEARCH

Mr. YATES. In what fields do you suspect industry will take the initiative?

Dr. HENRIE. Well, the one that I was working on yesterday happened to be hydrometallurgy and in situ mining. I came away from that meeting feeling that they would pick up the ball and run with it.

Mr. YATES. What do you mean by in situ mining?

Dr. HENRIE. A hydrometallurgy method of going after a mineral rather than going down and actually mining the material out of the geologic structure. They send solutions down to dissolve a mineral, then pump the mineral-bearing liquid to the surface for processing.

Mr. YATES. You mean like tertiary recovery?

Dr. HENRIE. Yes, but applied to a mineral in place.

Mr. YATES. Is that procedure successful?

Dr. HENRIE. Well, it has not been successful, but that group of people yesterday thought that if we were thinking of our mineral resources 20 to 50 years from now, we may have to start doing the research now to get at the problems 50 years from now. I really felt that they are ready to move out and start doing something about it.

Dr. ENZER. There are some industry leaders who believe that this sort of mining will be the major mining activity 20 or 30 years from now because it saves energy but at the same time you have the problem of controlling the chemicals that may be used in leaching the minerals out of the ore and the problems to control aquifers and seepage.

Dr. HENRIE. This is one of the many areas that I think is starting to be rejuvenated in industry.

Mr. YATES. Is this the result of your input, do you think?

Dr. HENRIE. Well, I was invited to the meeting to help promote it, yes.

HAULAGE OF MINERALS

Mr. YATES. How much difference is there in hauling the coal and nonfuel material?

Dr. ENZER. Can you answer that, Tom?

Mr. YATES. Would you rather I didn't ask the question?

Dr. ENZER. No. We ought to have an expert here.

Mr. KIRBY. There is not a great deal of difference.

Dr. ENZER. You are thinking of haulage, sir?

Mr. YATES. Yes, between coal and nonfuel minerals.

Dr. ENZER. Can you elaborate?

Mr. KIRBY. No, there is not a great deal of difference between haulage between the two. The pieces that are moved from the mine, the harder rock is often larger and that would be the main difference.

RESEARCH INTERACTION WITH DOE

Mr. YATES. What support does DOE provide to the Bureau for health and safety research? Does DOE provide much support?

Mr. KENAHAN. They don't really provide support for us. It is the other way around, we provide support for them but we do have a great deal of coordination and interaction.

Mr. YATES. Are you working with DOE on a safer method of sinking a shaft?

Mr. MAROVELLI. In a supportive role, yes. For example, they ran a major experiment down near Bessemer, Alabama called blind shaft boring, a large diameter drilled hole.

Mr. YATES. Why are both of you doing it?

Mr. MAROVELLI. Well, they were doing that under a major multi-million dollar contract. We were supporting them to insure that the health and safety aspect of this would be covered.

Mr. YATES. Why were they doing it in the first instance?

Mr. MAROVELLI. To reduce the time of opening up a mine. We were doing a health and safety analysis under the Surface Mine Reclamation Act which under section 908 gave DOE an assignment to explore alternative technologies to surface mining and secondly, to insure that these were as safe or safer than the technologies that they were replacing. Through that, they got a small health and safety role. Rather than setting up a health and safety activity, they passed through to us $950,000 on a one-shot deal a couple years ago and there were four or five projects that we supported them on.

Mr. YATES. Is that true also for the underground disposal of coal preparation plant waste? Are you working with them on that, too?

Mr. MAROVELLI. Well, as Mr. Kenahan mentioned earlier, in 1977 we had provided them 33 man years of technical assistance. Whether that was one of the projects, I don't recall.

Mr. YATES. You are working on that problem in a mine in western Colorado and they are working on it in other places.

Mr. MAROVELLI. Well, yes. We are just completing two contracts to develop detailed designs for underground disposal of coal mine

waste at two Western Colorado locations. We have periodically discussed these contracts with DOE. There are also situations where we are working on waste from the aspect of protecting the workers on the site. We also work on it in terms of protecting an adjacent town such as the problem that occurred at Buffalo Creek many years ago. We have very intensive coordination with DOE on this. We exchange our work plans and meet regularly.

Mr. YATES. Is this a duplication or do you think that it is well that both of you do it?

Mr. MAROVELLI. No, sir, it is not.

Mr. YATES. It is not what?

Mr. MAROVELLI. It is not duplication because DOE has no active contract in this area at present. Furthermore, you have to bring in the factor of difference in geologic conditions. The Bureau may be doing something in the West and the DOE may be doing something in the Southeast but the geologic situations may be completely different. The different conditions require different approaches.

RESEARCH ON LEACHING OF LATERITIC DEPOSITS

Mr. YATES. All right. During fiscal year 1982 you plan to complete testing of an oxidizing leach method for treating lateritic deposits. What results have you had from the work so far?

Mr. KIRBY. That particular project, sir, we carried through and have shown that we can recover more cobalt than any other method available. It has looked good in all our laboratory work and is the subject of the contract pilot plant study by UOP, Inc., of a plant in Tucson, Arizona that will be finished in about three months and the information will then be available to show that nickel, cobalt and, we hope, some of the chromium that is left in the leached residue can be recovered.

Mr. YATES. Is this an ongoing program for the next few years, too?

Mr. KIRBY. No, sir, this should be ending shortly. The nickel and cobalt work should be finished soon, and the chromium during the next fiscal year.

Mr. YATES. Is industry participating?

Mr. KIRBY. They have supplied the ore samples from three different deposits for three different types of ore.

REQUESTED INCREASE FOR BASIC RESEARCH

Mr. YATES. You are asking for an increase of $1 million to support intensified basic research efforts in three areas: minerals crushing and grinding, fine particle processing fundamentals, and certain aspects of cobalt reactions. Does this supplement the work you are doing now?

Dr. ENZER. Yes, sir.

Mr. YATES. Is the main purpose of this research to reduce the energy consumption?

Dr. ENZER. That is one of the purposes.

Mr. YATES. Are there other purposes?

Dr. ENZER. Yes.

Mr. KIRBY. It is the efficiency of it, sir, when we are getting to lower and lower grade ores. We are going to have to handle more

ore. The mineral particles are finer, and the ore is going to have to be ground finer. If I am correct, when you grind ore only one percent of the electricity put into it is used effectively to break particles apart and make new particles. The rest of it is used for spinning machinery around.

Mr. YATES. Well, at the present time you cannot recover cobalt from complex ore with existing technology, can you?

Mr. KIRBY. It is very difficult.

Mr. YATES. Very difficult.

Mr. KIRBY. Laterite is not a complex ore.

Mr. YATES. It is not economically feasible either, is it?

Mr. KIRBY. No, sir, but as it is a potential byproduct we hope to demonstrate that there are technical alternatives available so that it can be recovered.

CONSERVATION VERSUS DEVELOPMENT OF DOMESTIC RESOURCES

Mr. YATES. How do you determine the mix of budget authority between conservation of domestic resources and development of mineral resources? You have approximately 50 percent more budgeted for development of resources than you have for conservation.

Mr. KIRBY. It is a way, sir, of looking at the mineral resources we are going after. In the conservation, one thing is scrap, secondary materials, recycling to conserve what has been dug up and thrown away. Another phase is to make better use of those things that are mined and passed through and not used. On the other hand, with the developing of the resources perhaps one way to say it is, if we don't have the resource, then do something to get it. In a case like this, materials development, the stainless steel for elevated temperature use is an example. Rather than using chromium or nickel, we are trying something that is an iron-aluminum-molybdenum alloy so that we don't use the chromium and nickel.

Mr. YATES. Where is the on-line assaying system located which determines and controls ore grades between the mine face and the processing plant?

Mr. KIRBY. That will be a research project that comes out of our Denver Research Center. It is an outgrowth of the research of drilling a hole in the ground and then lowering a unit down through the hole to assay the ore in place.

Mr. YATES. What is the extent of industry participation?

Mr. KIRBY. There is none now, but we are working with USGS on the borehole analysis with industry as we work in this area. There was a previous attempt at on-line assaying quite a few years ago in the copper area, and we cooperated with the White Pine Copper Company in upper Michigan.

Mr. YATES. On page 42 you say, minerals in deposits that are economical to mine are often bypassed. Why does that happen? It does not make sense, does it? If they are economical to mine, why do they bypass them?

Mr. KIRBY. I am afraid we may have a typographical error.

Mr. YATES. All right. Let me read the whole paragraph, maybe I took it out of context. [Reading:] There are abundant domestic mineral resources that are not being recovered because it is uneconomical to do so with present methods. Many small, low-grade deposits are uneconomic to mine and process; minerals in deposits

that are economical to mine are often bypassed or intentionally left in the ground for ground support.

Mr. KENAHAN. That is the reason.

Mr. YATES. They are left in the ground for ground support. In other words, if you pull them out, you would have a subsidence?

Mr. KENAHAN. Yes, sir.

Mr. YATES. All right. The budget goes on to say, "Many areas contain secondary minerals important to the national economy if not recovered." Why are they not recovered? What are the barriers?

Mr. KIRBY. Sir, a typical example would be the very small cobalt and nickel content in Missouri lead ores. In Missouri lead ore runs six percent lead, the cobalt is .015 percent cobalt.

Mr. YATES. Not much, is it?

Mr. KIRBY. It is very little, yet if we can develop a technique for recovery it represents seven percent of current U.S. consumption of cobalt.

Mr. YATES. Really?

Mr. KIRBY. Yes, sir.

Mr. YATES. But what a miraculous technique you would have to develop, would you not?

Mr. KIRBY. Yes, sir.

RECOVERY OF TUNGSTEN FROM SALT BRINE

Mr. KENAHAN. Perhaps a better example of that would be a salt lake out in California where the Kerr-McGee Company is recovering four or five minerals from the Searles Lake brine, but they do not recover the tungsten. The tungsten is there in small amounts, 55 parts per million, but they do not recover it. We have been working for the past three or four years on a process to recover the tungsten from the brine and we finally convinced Kerr-McGee this would be worth looking at. The secret to the recovery is a resin that will selectively recover the tungsten, which was developed by Bureau scientists.

Mr. YATES. Can you do that with cobalt, too?

Mr. KENAHAN. I don't know about that. This has been a significant development and, as I said, we are trying to convince Kerr-McGee to adopt it. Another aspect to this is that particular tungsten source probably represents the largest tungsten resource we have in the country.

RECOVERY OF MINERALS FROM SUB-ECONOMIC DEPOSITS

Mr. YATES. How many such cases are there where you have these precious metals that are in small quantities and looking toward methods of recovery that make it economic?

Mr. KENAHAN. There are not a great many but up in Michigan, for example, the nickel-copper ores contain some of the platimum metals but they are not being recovered.

Mr. YATES. This is platinum, you say?

Mr. KENAHAN. Platinum and palladium.

The Amax Company is going to recover the copper and nickel but in all probability because it is there in such small quantities

they probably will bypass the paltinum metals unless an economical method for recovering them is developed.

Dr. ENZER. In this example, Mr. Chairman, the cobalt, platinum and other precious metals if we could recover them would add $45 billion at current prices.

Mr. YATES. How much are you spending for research on it?

Dr. ENZER. In fiscal year 1980 on this project we are talking about $325,000.

Mr. YATES. That is not very much, is it?

Dr. ENZER. No, but it is not always a question of money.

Mr. YATES. I know, it is a question of innovation.

Dr. ENZER. Yes.

Mr. YATES. Or accidental recovery.

Dr. ENZER. Yes, sir.

Mr. YATES. Which of those metals are you going to study, which would provide a higher percentage of recovery? Are those the ones we just talked about that were not hydrometallurgical? Which ones would be recovered through hydrometallurgical methods?

Mr. KIRBY. Primarily gold and silver, sir.

Mr. YATES. Does economic recovery favor industry doing the research rather than the Bureau of Mines?

Dr. ENZER. Very often despite the high prices of gold and platinum the value is still too low and unless the Government does some work it will not be done.

Mr. YATES. How much money have you got budgeted for the program?

Dr. ENZER. Do you have the number here?

Mr. YATES. How much do you have budgeted for research on hydrometallurgical methods that will provide higher percentage recovery of precious metals?

Mr. KIRBY. Three hundred thousand dollars, sir, for gold and silver.

Mr. YATES. How do you spend the $300,000 that you just cited a few minutes ago? Do you give it to a college to perform the research?

Mr. KIRBY. This is in our in-house at our Reno, Nevada, Research Center.

Mr. YATES. What do you do? How do you go about spending the $300,000?

Mr. KIRBY. Well, one particular example, in leaching gold you have ore that has a lot of clay in it and we try to leach it with a cyanide solution and the clay blocks the leaching flow. An innovation, one percent Portland Cement is mixed with this clay ore to form little balls and they can be put in a stack for free flow. All the gold then can be recovered that is leachable and much, much more rapidly.

GAO REPORT ON ALUMINA RESEARCH

Mr. YATES. GAO thinks that nonbauxitic research is fundamentally misdirected and not economically competitive.

Dr. ENZER. We disagree with that, Mr. Chairman.

Mr. YATES. You do?

Dr. ENZER. Yes, sir.

Mr. YATES. You want to make a study?

Dr. ENZER. Well——

Mr. YATES. Can you disagree without having your study?

Dr. ENZER. I think we disagree without having to do a study and I am not sure what evidence I have that I can provide to you except to say that——

Mr. YATES. You just don't like what they said.

Dr. ENZER. Well, Mr. Chairman, we are working with five aluminum companies and they are contributing to this project, and I don't think they would be spending their money on something that they consider wasteful. Now we do agree that there is a confidential process that may have a good potential but it is not a process that is publicly available and that we have been able to work on. We are going to look into this matter and see what we can find out and whether it is a better process than the ones we have been studying.

Dr. HENRIE. Mr. Chairman, let me add a little to that since a lot of that was my responsibility at one time.

Mr. YATES. How did you happen to pick the options you did?

Dr. HENRIE. The thought early in the 1970s was that we should work with industry and develop a process to get alumina, which is the basic raw material that goes into the present cells, through a program to study the extraction of alumina from nonbauxitic ores. I think that the GAO study took exception with us and the reason they say it is misdirected is that they thought the ultimate goal should be to get aluminum rather than alumina. They felt that we should have cast aside the alumina program in favor of aluminum. Our appearance before OMB and Congress was a program for alumina and that is what we are pursuing. I don't know why they thought that we should abandon that program for aluminum. I think we were quite successful in our alumina program and that is the whole bone of contention. We were following the program as we had outlined and had approval to do.

Mr. YATES. It is surprising the GAO didn't ask you that before they came out with their suggestion.

Dr. HENRIE. We told them during the interviews.

Dr. ENZER. One of their concerns, Mr. Chairman, is that they believe the major problem in the future is not the conversion from bauxitic materials or clay materials to alumina but the conversion from alumina to aluminum because of the energy issue that is involved here but we think that we need to have both. We are importing most of our bauxite, 90 percent or so, and, yes, energy has become important since 1973 or perhaps even before that but we still do have a basic resource problem in that we are dependent to a significant extent on foreign imports. If we can have an industry sometime in the future through which we extract alumina from domestic sources, then this to us ought to be very important because aluminum is a basic mineral and basic metal in the economy, one of the most important.

Mr. YATES. What is the status of your plant in Boulder City?

Mr. KENAHAN. The alumina mini-plant is still in operation but at the present time we are trying to optimize certain unit operations in the entire plant. We should finish the alumina mini-plant work in the next year or year and a half.

PROMISING AREAS OF RESEARCH ON SUBSTITUTE MATERIALS

Mr. YATES. What research on substitute materials looks particularly promising?

I think I will let you develop that in the record because that is chancy, isn't it?

Dr. ENZER. Yes, sir.

Mr. YATES. All right.

[The information follows:]

PROMISING AREAS OF RESEARCH ON SUBSTITUTE MATERIALS

There is a significant number of research approaches that look promising in this area of substitute materials:

Low-chromium alloy substitutes for chromium-base stainless steels.—Foreign sources, such as Zimbabwe and South Africa, account for over 90 percent of the U.S. chromium supply. To effect reduction of national requirements for chromium, research is directed toward devising new alloys with adequate chemical and physical properties. Iron alloys strengthened by intermetallic compounds and iron-aluminum alloys strengthened by carbide precipitation have been shown to have adequate corrosion resistance to substitute for stainless steels in many applications. Research also has demonstrated that surface-nitriding of plain carbon steel can make a material substitute for stainless steels in some cases. The nitriding makes the surface corrosion resistant to many combustion atmospheres that now require stainless steel or other heat-resistant materials.

Reinforced composites as substitutes for high-temperature chromium alloys.—Metal-matrix composite materials investigated as substitutes for chromium- and cobalt-base superalloys show promise for high-temperature uses such as in gas turbine engines. These composite materials are based on non-critical iron alloys that are reinforced with either silicon carbide or molybdenum filaments. These innovative materials made by powder techniques have adequate strength and corrosion resistance for use up to 2,000° F.

Substitutes for cobalt and platinum in magnets.—Samarium-cobalt and platinum-cobalt alloys are used for high-temperature magnetic devices. As substitute materials in magnets, our early research has shown that nearly as good magnetic properties are obtained when copper, iron, nickel and/or magnesium are used to replace part of the cobalt constituent of super magnets. In addition, rare earth metals can be used be used instead of platinum. (Although identified as rare earth metals, the ore from which they are recovered is abundant in the Western States.)

Substitutes for chromite in basic refractories.—Iron and steelmaking require large quantities of magnesia refractories, with over 70 percent of these refractories containing chromite. Some of our recent studies indicated that magnesia refractories can be improved while replacing the chromite. Magnesia refractories prepared from periclase grain material with small additions of oxides of zirconium and manganese exhibit high-temperature properties equivalent or superior to those containing chromite.

High-purity titanium powder for powder metallurgy.—Titanium is a strong, lightweight, and corrosion-resistant metal. However, it is expensive, $7.00 a pound before melting and casting into solid ingots, and requires special fabrication methods. Research is being conducted to prepare titanium powder from molten metal using a novel furnace developed by the Bureau. The difficulty which this technique overcomes is that it prevents contamination of the powder. The powder metallurgy technique offers the significant advantage of making parts into shapes close to the final specifications, saving time, energy, and material.

Substitutes for silver brazing alloys.—Silver-cadmium alloys chiefly used for conventional brazing applications. This accounts for seven percent of the total domestic consumption of silver in a use from which little silver is economically recyclable. Successful steps toward developing substitute brazing alloys based on the copper-manganese system have been achieved.

Substitutes for fluorspar in steelmaking.—The use of fluorspar as a flux for steel production accounts for 32 percent of its consumption. Because more than 80 percent of the fluorspar supply is imported, research has been conducted to find domestic substitutes. One promising substitute is the wornout liners from the electrolytic cells used for producing aluminum. These carbon liners are penetrated by the fluorine salts used in the cells. Experiments have shown that this material could replace fluorspar in cast-iron cupola furnaces and substitute for part of the fluorspar flux used to steelmaking.

MATERIALS RESEARCH AND SYNTHETIC FUELS PROJECTS

Mr. YATES. Are there specific synthetic fuel projects for which you plan to develop new materials?

We touched on that this morning but do you have any programs or plans in this respect?

Mr. KENAHAN. Yes.

Mr. YATES. What new materials?

Mr. KIRBY. Most of our work in this area, sir, is not so much with specific synthetic fuels as with such things as improved wear and corrosion-resistant materials that are aimed at mining coal and also at mining rock, at processing coal and processing rock, which is transferable. As you indicated by an earlier question, what is the difference in materials handling between coal and nonfuel minerals? The same thing follows here. We are specifically interested in the materials that they use. We feel people are looking for the best solutions, the best materials. We feel that these often use a lot of critical minerals, critical materials such as chromium, cobalt and nickel, and we would rather find the optimum material that would last almost long enough and not use nearly as much chromium, cobalt, nickel.

Mr. YATES. Why do you have to do this? Why shouldn't the synfuel plants people do this?

Mr. KIRBY. We feel that we have expertise in this area.

Mr. YATES. My goodness, doesn't Exxon have expertise in this area?

Mr. KIRBY. Exxon is not going to be looking at the mining and the mineral processing.

Mr. YATES. I thought it was for oil shale.

Mr. KIRBY. Excuse me. I relate Exxon to the gasoline pump.

Mr. YATES. I do, too, but I think Exxon is bigger than both of us.

Mr. KIRBY. Yes.

Mr. YATES. And bigger than that. They are doing oil shale work. Gulf is doing oil shale work. They are all doing oil shale work, the seven sisters.

Mr. KIRBY. I don't think they have the concern or perspective of the utilization of critical minerals.

Dr. HENRIE. Maybe I could respond.

Mr. YATES. Dr. Henrie, add your little bit.

Dr. HENRIE. When this problem first became quite evident, the energy laboratories which had been developing this technology earlier were part of the Bureau of Mines and part of the same overall research group. We developed quite an expertise in our high temperature metallurgy group to support the materials problems that would develop in the synfuels. Since that time, the Department of Energy has continued to help support part of this program and encouraged us to work on materials for synfuels. This action reflects the high temperature metal expertise that the Bureau has had since the early 1950s, when we started work on these types of materials.

Mr. YATES. Do they encourage us to pay part of these costs?

Dr. HENRIE. I think the pay was decreasing all the time. Is that right, Ralph?

Mr. KENAHAN. We started out about seven or eight years ago with several million dollars and I think we are down this year to about $160,000.

Mr. YATES. You are going in reverse. If you go down, do they go upward or is this just the end of the road?

Mr. KENAHAN. I think they are putting their money into other things.

Dr. HENRIE. We were looking for specific solutions to specific problems, and part of this work has been picked up by the Morgantown Lab which is an energy lab. They are picking up expertise, but I think the problems are there in the more general sense. I think as our experience in high temperature alloys, the highly refractories materials, is probably the best in the country as far as a major laboratory is concerned, and I think that is why we continue to get requests to work in this area.

ASSESSMENT OF MANAGNESE RESOURCES

Mr. YATES. Is the $200,000 you are asking for a one-time cost for reassessing low-grade onshore manganese resources? Will the research cover only manganese?

Mr. KIRBY. Yes, sir.

Mr. KENAHAN. It is only directed at manganese.

DATA COLLECTION AND ANALYSIS PROGRAM

Mr. YATES. GAO again raises its head and says, "There continues to be no strategy for matching extensive information capabilities with public policy mineral information requirements throughout the Executive Branch." Is that aimed at you?

Dr. ENZER. That is aimed at me.

Mr. YATES. What is your reaction?

Dr. ENZER. My reaction, Mr. Chairman, is that we think we are in the process of taking care of it. You will note my careful language here.

Mr. YATES. I note your careful language.

Dr. ENZER. The Bureau of Mines in November was designated by the President as the focal agency for minerals collection and analysis and the Secretary of the Interior was asked to convene an interagency committee which is supposed to undertake certain tasks, and we started on these tasks.

Now one of the tasks, for example, is to identify gaps and duplications and there is nothing in this directive when you read it that says anything about policy. But what will have to happen is that when we compile this directory we are asked to compile and we have identified a gap, we will need to tie this to policy because otherwise we would have no framework to determine whether something is or is not a gap. For example, I know that the Federal Government publishes hardly anything in the area of investment data. But unless we need that information for some policy purposes, it is not a gap because if we don't need it, we don't have a gap. So one of the things that we need to do in carrying out these tasks that are listed in this memorandum is to develop a policy framework for the Federal Government by which we can evaluate our mineral information systems.

Mr. YATES. Who is going to develop the policy?

Dr. ENZER. We are.

Mr. YATES. You are. All right. Does GAO know that?

Dr. ENZER. Yes, we have told them that.

Mr. YATES. Are they joyful about that?

Dr. ENZER. They think that if we do what I just said ought to be done we are meeting their "criticism."

INCREASE REQUESTED FOR 1982

Mr. YATES. How is that coordinated activity being funded?

Dr. ENZER. Part of it comes from 1981 funds and the other part from the requested increase of $860,000.

Mr. YATES. And for that $860,000 you get a policy statement?

Dr. ENZER. I hope we get the policy statement without any money.

Mr. YATES. What do you hope to get for the money?

Dr. ENZER. For part of the money we are going to get a directory that will list all the minerals information systems that we have. It will get us started on an effort to make these systems compatible. We are developing an automated information system and other agencies are too and it is difficult to go from our system to the others. Here we are and here they are, and it should be possible to coordinate among us. That is where part of the other money goes.

We don't plan, sir, to use all of the $860,000 on these activities. I mentioned to you before that we are trying to put an early warning system in place, which I called a critical minerals index which we are trying to institutionalize. Part of the increase would be used for that activity. I also mentioned that we are trying to match our supply analysis that we are developing in the Bureau of Mines with some demand analysis, and part of the money will be used for that. We are trying to stretch $860,000 quite a bit considering what it costs to put these things in place.

Mr. YATES. We appreciate your stretching it.

PERIODICITY OF BUREAU PUBLICATIONS

Now you have a number of publications which you print at various times. How do you determine when to publish them?

Dr. ENZER. We are going——

Mr. YATES. No regularity with respect to them.

Dr. ENZER. To be frank with you, Mr. Chairman, there is no easy answer. When I came to the Bureau of Mines and asked why we do what we do, why this is a monthly rather than a quarterly, one discovers that the answer has been lost in the fog of evolution.

Mr. YATES. We know that is part of the trial in California now. Go ahead, Dr. Enzer.

Dr. ENZER. We are trying to discover right now, Mr. Chairman, how many publications we should put out, whether they should be monthly, yearly, weekly, and we hope that by the end of this fiscal year we will have a pretty good idea what it is that we ought to be doing. This is one of my primary objectives.

Mr. YATES. You want $800,000 and we gave it to you last year.

Dr. ENZER. Yes, you did.

Mr. YATES. We gave it to you to advance the date for completion of disruption strategies for platinum, manganese and chromium. What is the current status of those studies, Dr. Enzer?

Dr. ENZER. We did the following, Mr. Chairman. We planned to do work on 34 minerals, and when I came to the Bureau of Mines we had a look at these 34 and reduced them to 23. The 23 minerals are the most important ones that we ought to worry about and we ought to take care of the others when they do come up. One of the things that has happened is that we have advanced completion of this reduced minerals availability system by one year. We used $200,000 which we got from this committee a year ago to advance the platinum date by one year. Unfortunately, this has not been reflected yet in the budget document but that is what is happening.

Also, the language that the committee used a year ago in relation with the $800,000 that we got was rather specific. We were asked to use part of it to study the technological substitution potential for three or four minerals and we are doing this. You asked us to work on disruption studies, and as I mentioned to you earlier we are involved in the interagency effort chaired by the National Security Council. We are working on four of the major minerals and we hope to have recommendations to the President during this year on them. I think we are making progress.

Mr. YATES. Are you doing this in-house or are you contracting it out?

Dr. ENZER. We are doing both, in-house as well as contracting.

Mr. YATES. When do you anticipate having some results?

Dr. ENZER. This year. We hope to have some recommendations on cobalt next month and something on platinum, chromium and manganese by summer.

PROBLEM AND POLICY ANALYSIS

Mr. YATES. What is your guess as to whether or not your request for 20 new people for Problem and Policy Analysis will survive the OMB budget procedure?

Dr. ENZER. This is a transferral and not an additional request. Some of the people will come from the industrial water activity that you raised before, Mr. Chairman. It has survived so far and we hope that it will survive.

Mr. YATES. Where was the mineral policy analysis function performed prior to this time?

Dr. ENZER. We have an office in the Department which is called Minerals Policy Research Analysis. It is a staff office to the Assistant Secretary for Energy and Minerals. It has been agreed that some of the activities that were performed in this office will in the future be performed in the Bureau of Mines.

REQUEST FOR TRAVEL FUNDS

Mr. YATES. You want $100,000 for travel out of the $860,000. Isn't that a lot? Why do you need so much?

Mr. OYLER. That is not so much, Mr. Chairman, when you remember there will be a good bit of consultation needed to be done in this work.

Mr. YATES. Is it easier to travel or talk by phone?

Mr. OYLER. Eyeball to eyeball always gets more results, Mr. Chairman.

Dr. ENZER. One of the things that we are working on in doing this work is to have a demand analysis capability and if we have a contractor who works on that and there is a problem, it is very difficult to discuss econometric and engineering equations over the phone. You can go up to a point but beyond that you have to get together.

GROWTH IN MINERALS INFORMATION PROGRAM

Mr. YATES. The Minerals Information program level has increased significantly from $16 million in fiscal year 1980 to a request of $21.6 million in fiscal year 1982. Is it worth the increase?

Dr. ENZER. Yes, sir, we think it is.

Mr. YATES. Is it going to continue to grow in future years?

Dr. ENZER. We think it will continue to grow but more modestly. We did ask and did receive an increase and much of this increase was spent on working on the minerals availability system that is described. We will be through with that in two to three years from now and after that it will become a maintenance activity. We will maintain it but it will become much less expensive when we have arrived.

WILDERNESS LAND ASSESSMENTS

Mr. YATES. You are working with the Geological Survey on the Wilderness Land Assessments, aren't you?

Dr. ENZER. Yes, sir.

Mr. YATES. How tough a job is that? What do you have to do? Do you send teams out into the area?

Dr. ENZER. Yes, we do field work.

Mr. YATES. You are on a team and you have an area that is so many miles square, how do you know where to begin?

Dr. ENZER. Well, we do have some information. There is hardly any area in the United States, at least in the lower 48 States, where there is not some information in court records, in archives and so on. We do start with a literature search and we do have some idea where to look. It is not a random method, Mr. Chairman.

Mr. YATES. But how much of the land can you assess? How much can you survey? What do you do, make a grid? Do you prepare a grade map or something? How much do you cover? You can't cover it all, can you?

Dr. ENZER. No, we cannot cover it all.

Mr. YATES. How do you know when to stop, when you run out of money?

Dr. ENZER. Well, that is what it pretty much amounts to, sir. We get an appropriation from you and there are so many acres to cover and we do make an estimate of what it costs. We do, as I say, preliminary work. We go out, we take samples, we have an extensive sampling program. What you may eventually want to do is some core drilling because without some core drilling you have only a very vague idea as to what there is.

ADEQUACY OF MINERAL LAND ASSESSMENTS

Mr. YATES. Judging by the Secretary's statements over the last week, he intends to open up these lands, if we can, to mineral development. How shall we proceed? Are your studies adequate for the wilderness areas so that we can open them up for mining? What are you finding as you go into the wildeness areas? Are you finding any minerals at all?

Dr. ENZER. Yes. Usually when one reads these reports they speak of mineralization. There are indications that a certain area contains some minerals that are listed. We do have previous information but it does not say that there is an actual deposit, the size and the magnitude of that deposit. We can't go much beyond giving indications about minerals.

Mr. YATES. If you cannot give more than that much information, who decides whether the particular area shall remain wilderness or shall be turned over for mining?

Dr. ENZER. We do. As far as we are concerned, we being the Bureau of Mines and the Survey, we do have our experts and our mining engineers and their geologists. These people get together, look at the information that we do have, and then use their best judgment with respect to minerals occurrence. We send the reports to Congress. We send the reports to the sponsors, the Forest Service in this case, and it is in the end their judgment which is reflected in the recommendations that they make to Congress whether an area has enough indications with respect to minerals and whether it should become a wilderness area or whether there should be multiple use.

MINERAL LAND ASSESSMENTS PROGRAM STATISTICS

Mr. YATES. I am not clear as to the law on this. Have you completed your surveys of any of the so-called wilderness areas yet?

Dr. ENZER. Mr. Paone is here and can answer that. How many million acres are remaining in wilderness?

Mr. YATES. How many are covered?

Mr. PAONE. We talked about different types of designations. Certain lands administered by the Forest Service were designated for study by the Wilderness Act of 1964.

Mr. YATES. This is the RARE area?

Mr. PAONE. No, the Wilderness Act areas and the RARE II areas are different. Under the Wilderness Act, Congress has designated about 24 million acres to be studied for mineral potential.

Mr. YATES. How many of those have you finished?

Mr. PAONE. We have finished 22.5 million.

Mr. YATES. Really? In how long a period?

Mr. PAONE. Well, the act was passed in 1964.

Mr. YATES. When did you start on it?

Mr. PAONE. We started on them about 1968.

Mr. YATES. You started in 1968 and you have got about 95 percent of it completed then for that wilderness study.

Mr. PAONE. Yes. In addition to that we have the RARE II program. The RARE II program called for 9.6 million acres and Con-

gress passed the Colorado bill and the New Mexico bill in the last few months which added 2.2 million acres so under the RARE II program we have 11.8 million acres to study.

Mr. YATES. Have you started on those?

Mr. PAONE. We have started that in fiscal year 1979. We have completed reports on nearly 4 million acres. We hope to have the RARE II program completed by the end of 1983.

Mr. YATES. How did you complete this? How many teams do you put in the field? How many people do you use?

Mr. PAONE. We have roughly 150 people.

Mr. YATES. Divided into teams? One team takes so many acres?

Mr. PAONE. Yes. A rule of thumb might be that one person will cover 25,000 to 40,000 acres. It depends on the terrain, it depends on the topography, it depends on the degree of mineralization. Where you have a high degree of mineralization, probably one or two or more teams. Where you have a lava flow or sedimentary material where it is not conducive to mineralization; you use widely spaced teams.

Mr. YATES. Can you give the committee an opinion as to what portion of the 22 million acres that you have already studied contain mineral deposits?

Mr. PAONE. Yes, sir. Of the 22 million acres studied to date, we have about 97 reports and we have studied these reports and analyzed the findings in them. Roughly we are finding that about one-third of these areas contain some mineralization. Now in the RARE II process we have 307 additional reports in progress.

EXISTENCE OF MINERALS IN WILDERNESS AREAS

Mr. MCDADE. You use the word some mineralization.

Mr. PAONE. Yes.

Mr. MCDADE. That signifies to me one thing, but are we really talking about a commercial size find when you say some? It does not sound like it.

Mr. PAONE. It indicates that there is the presence of potentially significant minerals.

Mr. MCDADE. Potentially.

Mr. PAONE. It would interest a private company looking into that area a little further.

Mr. MCDADE. So what you are saying is that the 97 signals that you have there is to indicate to the Bureau and to the Geological Survey that there is sufficient evidence that would warrant exploration for a commercial deposit.

Mr. PAONE. That is right, at least for about one-third of them.

Mr. MCDADE. What kinds of minerals? What are the top five?

Mr. PAONE. Gold, copper, silver, lead, and zinc. It varies.

Mr. YATES. Any platinum or cobalt?

Mr. PAONE. We have found platinum and cobalt in some other studies in Alaska. We think there is much potential for finding a considerable amount of strategic and critical minerals in Alaska.

Mr. MCDADE. My next question was going to be that we have been through this chart and the Bureau's efforts under Dr. Morgan's leadership to develop synthetics in the event we had a cutoff. What about critical minerals in those areas, have you found those as well?

Mr. PAONE. We have not found too many critical minerals in the lower 48, we have found some. We are aware of some in Idaho near where we talked about this morning around the Black Bird mine and there are some in northern Minnesota which we talked about earlier today. We feel our strongest storehouse, if you might call it that, for these minerals would be in Alaska.

Mr. MCDADE. If you can focus on the storehouse in Alaska, which mineral are we talking about?

Mr. PAONE. All of the strategic minerals.

Mr. MCDADE. All of them.

Mr. PAONE. We have significant indications of cobalt. I was up there last summer and one deposit alone that I looked at that is being explored by a private company indicates they may have enough cobalt there that we can be net exporters for a hundred years.

Mr. MCDADE. That is not the wilderness area, is it?

Mr. PAONE. No, but it surrounds the deposit. The company Kennecott at that time was estimating the cost of buying two 747 aircraft and flying them into the area and moving out the concentrates twice a week.

Mr. MCDADE. I can remember when Dr. Pecora used to talk about entry and exit from the mining area and about the fact that you can go into an area and actually enhace it. In Alaska we have unusual conditions, we all know that different sets of rules generally apply up there. In these wilderness areas are we talking about a tundra area where there would be permanent damage if you were to access that cobalt or would we have a temporary intrusion on the wilderness area?

Mr. PAONE. The permafrost areas, of course, constitute a very fragile environmental condition. However, I didn't observe any permanent or off-site damage at the Alaska pipeline site and the roads that were built there. As a matter of fact, we visited a tin mining area in Alaska north of Nome and they had done some exploration drilling here three years before the time I was there and we were trying to locate the drill hole sites and we could not find them. Nature had healed itself, so to speak, so I think that some of the environmental claims there probably should bear more investigation.

Dr. ENZER. Most of the nonfuel mineral deposit indications that we have, Mr. McDade, seem to be south of the tundra area.

Mr. MCDADE. Forgive me, Mr. Chairman. I interrupted you when you were on RARE II.

Mr. YATES. That is all right.

STUDY OF FOREST SERVICE LANDS

All this research has been done on Forest Service property?

Mr. PAONE. Forest Service lands.

Mr. YATES. And RARE II?

Mr. PAONE. RARE II includes lands designated as "wilderness recommendation and further planning."

Mr. YATES. Has any work been done on the National Park lands?

Mr. PAONE. No, sir. Some work has been done on about three million acres of the BLM lands. Of course, that is the largest portion of our public lands and under FLPMA it says that the

Secretary of the Interior shall have studied roughly 15 or 18 million acres by 1991 to determine whether they would be included as wilderness areas.

We do work for the Bureau of Land Management, the same kind of assessment work we do for the Forest Service, the difference being we get direct appropriations to do our work on Forest Service Wilderness and RARE II lands. We do the BLM work on pass-through funds from the Bureau of Land Management. We are doing about half a million acres a year for BLM.

Mr. YATES. What kinds of reports do you file? Do you break down your reports into acreage?

Mr. PAONE. Yes, sir.

Mr. YATES. Into multiacreage reviews?

Mr. PAONE. The areas are designated by the managing agency. In the case of wilderness area or RARE II the Forest Service has designated areas. In the case of Alaska the Congress has designated what we call conservation units and each one has different acreages ranging from 5,000 acres up to over 2 million acres.

Mr. YATES. How large are your reports?

Mr. PAONE. The reports in content?

Mr. YATES. How many pages?

Mr. PAONE. They range anywhere from 20 pages up to a few hundred pages.

Mr. YATES. Would you furnish for our committee files one or two copies of those reports so we can see the nature of the reports?

Mr. PAONE. Yes, sir. We co-author joint reports with the Geological Survey.

Mr. YATES. How do you split your work with them? Do you have joint teams going out?

Mr. PAONE. No, we have separate teams. When you look at land or mineral exploration, you think in stages. It is like a private company would do. They would look, as Dr. Enzer says, at the literature. That would be a stage one, phase one type activity. Stage two then would be sites of specific reconnaissance to pick up samples of the field. You would have these analyzed. These would be where we knew the mining took place or where there is favorable geology or other indications that there could be significant mineralization and that as it got down to a stage two level further work beyond there is called exploration.

NATIONAL MINE MAP REPOSITORY

Mr. YATES. I see. How extensive is the national mine map repository? Has it been used as a resource for the inventory of abandoned mine lands that the Office of Surface Mining is preparing? Do you know the answer to that?

Mr. PAONE. No, sir, I don't.

Dr. ENZER. We will provide that answer, Mr. Chairman.

Mr. YATES. All right. Thank you very much.

[The answer follows:]

NATIONAL MINE MAP REPOSITORY

The mine map repository contains 100,000 microfilmed mine maps for the contiguous United States. The preponderance of the film record covers underground coal mines in the Eastern United States.

The Office of Surface Mining has requested and received copies of three mine maps.

RESOURCES AVAILABLE FOR TECHNOLOGY TRANSFER

Mr. YATES. What resources do you devote to technology transfers?

Mr. KENAHAN. We talked about this before. This is a small group of perhaps half a dozen people in the Bureau of Mines that handles all the technology transfer for all three areas of Bureau research.

Mr. YATES. Does industry participate at all?

Mr. KENAHAN. Yes, they do. We have open industry briefing sessions constantly.

DRAINAGE OF ANTHRACITE MINES

Mr. YATES. The outlays associated with the Drainage of Anthracite Mines are estimated to go from $965,000 in fiscal year 1980 to $500,000 in fiscal year 1982. What effect has the establishment of the Abandoned Mine Reclamation Fund had on this problem, if any?

Mr. KENAHAN. That apparently goes back to 1956 when $8.5 million was appropriated to the Bureau of Mines for acid mine drainage work in Pennsylvania. I believe there is $1.9 million of that fund left and this year we are going to spend $900,000 on a project and then there will be a million dollars left in the fund. The State of Pennsylvania has other problems in that area.

Mr. YATES. What is the extent of the problem that remains? Do you expect the drainage of anthracite mines to be completed?

Mr. KENAHAN. No, sir. The acid mine drainage problem in the anthracite region involves 8,000 miles of streams and rivers which are contaminated with acid mine water.

Mr. YATES. Does this program coordinate with the abandoned mines reclamation program?

Mr. KENAHAN. It is in the same area, yes, sir.

Mr. YATES. Well, what happens to this problem, do we just let it go on and on and on or is there something that we can do about cleaning up those waters?

Mr. KENAHAN. There are some things that can be done. We are doing some research on some new methods of handling the problem. For example, we have determined that there is a certain type of bacteria that is necessary for the formation of the acid mine water and we have found a way of cutting down on the growth of this bacteria. Flooding the mine sometimes can solve the problem by cutting off the air needed for oxidation of the pyrite. It is an old problem, it has been with us a hundred years because we have not ever really attacked the problem adequately in the past.

Mr. YATES. Is this a problem for current mines, too, for mines that are operating now?

Mr. KENAHAN. It would be a problem if they are not prepared to handle it. I would guess that most new mines now opening up are

required to address these environmental problems. In most instances now they are required to by law.

COUNCIL FOR ENERGY RESOURCE TRIBES

Mr. YATES. Do you have anything to do with the Council for Energy Resource Tribes? Do you work for CERT, the Council for Energy Resource Tribes?

Dr. ENZER. Not to my knowledge.

Dr. HENRIE. We did two or three years ago.

Dr. ENZER. But not now.

HELIUM RESOURCES IN TIP TOP FIELD.

Mr. YATES. Now let's talk about Mobil Oil drilling in the Tip Top Field. What knowledge have we gained from the second well and what are the options associated with the Tip Top Field?

Dr. ENZER. We asked Mr. Munnerlyn to come to this hearing, Mr. Chairman, and I am going to ask him to respond to your question. Let me say, however, that Mobile Oil is drilling its fourth well at this time, so the results of the second one must have been encouraging enough to proceed to a third and now to a fourth one.

Would you answer the Chairman's question, Mr. Munnerlyn.

Mr. MUNNERLYN. The second well has not been tested yet, sir. They are waiting for the drilling of the fourth well, and then they will test the three wells.

Mr. YATES. Are the prospects good?

Mr. MUNNERLYN. Very good, sir. In addition, EXXON is drilling two wells and American Quasar has completed one well and is drilling a second well.

Mr. YATES. Is the administration presenting any new legislative proposals for this Congress?

Dr. ENZER. Not at this time, sir. We would like to know a little bit more about the extent of the resource that is involved here because there has been a statement that the helium content of that low-BTU gas in the field might be as high as one trillion cubic feet which is enormous, and we do know or we are reasonably sure that there are at least 40 to 45 billion cubic feet in that field. This is as much as we have in the Cliffside storage facility. So we are talking about a potentially very large helium source at Tip Top. Mr. Munnerlyn and his associates have been working on alternatives that we might consider when we know a little bit more about this field.

Mr. YATES. How long will that take you?

Dr. ENZER. Production is not expected to start until 1984 to 1985; so we do have a year or two to work on these alternatives.

HELIUM FUND OPERATING COSTS

Mr. YATES. You expect the operating cost of the Helium Fund to rise by 22.8 percent over the next two years. Administrative expenses will have risen over a third, 37 percent. What has contributed to this large increase?

Dr. ENZER. Would you answer that?

Mr. MUNNERLYN. We will supply that for the record.

Mr. YATES. All right.

[The information follows:]

HELIUM FUND ADMINISTRATIVE EXPENSES

There has been no increase in administrative personnel. The apparent $275,000 increase in "Administrative and other Expenses" is caused primarily by cost allocation rather than an actual increase in administrative support services. Administrative expenses were low in fiscal year 1980 because part of the administrative overhead was allocated to major capital projects. Because there are no capital projects of the same magnitude in fiscal year 1982, more of the administrative cost appears under "Administrative and Other Expenses." Additionally, about one-third of the increase is the result of the general comparability pay increase of 9.1 percent in fiscal year 1981 and 5.5 percent projeced for fiscal year 1982.

CLOSING REMARKS

Mr. YATES. Can you give me any guesses now?

Mr. MUNNERLYN. No, sir.

Mr. YATES. Can you tell me whether the Bureau is doing anything to hold down administrative costs?

Dr. ENZER. I certainly hope so.

Mr. YATES. Do you have any questions, Mr. McDade?

Mr. MCDADE. Mr. Chairman, I have some questions which I will submit for the record. You covered the area pretty thoroughly.

[The questions and answers follow:]

Questions Submitted by Congressman McDade

Abandoned Mine Land Projects

Question: Will you tell the committee the status of programs funded on a pass through basis from the Office of Surface Mining to the Bureau in FY 80?

Answer: In September 1980, pass through funding of $5.8 million from OSM involved separate agreements for 14 projects. These included two mine fires in Wyoming and twelve projects comprising mine subisdence, shaft sealing, and mine fire control activities in western and northeastern Pennsylvania. Technical personnel at the Bureau's Pittsburgh and Denver Research Centers and its Wilkes-Barre, Pennsylvania Field Office are in various stages of planning and engineering to implement contract work on these projects.

Question: In FY81, this committee made available to the Bureau $16 million from the Abandoned Mine Reclamation Fund to carry on with your research, demonstration and reclamation projects. What is the status of your efforts to implement this program?

Answer: The Bureau and OSM are jointly formulating plans for selecting, planning, and implementing individual projects on a priority basis. Subsequent to the passage of appropriation bills for the Bureau and OSM in FY 1981, the Bureau and OSM met numerous times to develop and select projects to be implemented under the $16,000,000 appropriation. On March 3,1981, seven projects totaling an estimated $15,000,000 were concurred in and have been initiated. These projects include four projects in Pennsylvania, one in Alabama, one in Wyoming and one in Kansas.

A memorandum of agreement between the Bureau and OSM on this subject was signed on January 19, 1981, delineating each agency's overall responsibilities.

Question: Are there any funds available from the appropriation provided to the Bureau in FY79 under your mined land demonstration program?

Answer: Yes. There is a balance of $2.3 million left which is being used to cover engineering, inspection, and monitoring activities for several large on-going projects and for start-up of some remaining small-scale projects.

Question: Do you have any on-going Appalachian Regional Commission projects in which the Bureau is participating? Please provide a list of them for the record.

Answer: Yes. A contract was awarded in September 1980, for the Zayre Refuse Bank reclamation project in Wilkes-Barre Twp., Pa. A 300 acre area is being reclaimed for public housing at a contracted cost of $2.3 million. It is estimated that the project will be completed in September 1981.

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A cooperative agreement between the Bureau, Ohio Department of Natural Resources and the Cambridge Industrial Association is expected to be signed in early 1981 for an Industrial Park In Guernsey County, Ohio. The project was approved by the ARC in October 1980, and after reclamation will provide for a 42 acre industrial park site.

Four acid mine drainage projects are in various stages of work in Maryland, Pennsylvania, and Ohio, and are expected to be completed in FY81.

Question: Do you have any coal outcrop fire projects pending or have any been initiated under the funds which the committee provided to you in FY81?

Answer: Yes. Contract activities are pending for the control of several dozen fires in the Belle Prairie area near Glendive, Montana. Other fire activities provide for the investigation and evaluation of newly reported fires and inspection, monitoring, and maintenance of previously controlled fires.

Question: Will you provide for the record what you believe to be the major accomplishments of the Bureau in the area of subsidence control?

Answer: The Bureau has pioneered in abandoned mined land subsidence control methods since 1964. Hydraulic pressure injection developed through Bureau programs is, in the Bureau experience, the primary and most effective method used for sub-surface area stabilization. The area most affected by subsidence problems has been the Northern Anthracite Field in Eastern Pennsylvania. The Bureau through its Wilkes-Barre Field Office has been responding to these problems under the authority of PL 84-162 and PL 89-4 since 1964. It has also responded to problems throughout Appalachia, in the Midwest, and in the West and most recently has assisted OSM by providing expertise and assistance to accomplish subsidence control projects under the Abandoned Mined Land section of P.L. 95-87. At the present time, the Bureau is demonstrating the use of a fly ash slurry in Fairmont, W. Va. and the use of a new type of pressure injection at Belleville, Illinois. Improvement of subsidence control technology continues at the Wilkes-Barre/Scranton Airport and at several projects in the city of Scranton and the surrounding area. While these projects are expensive to conduct, the safety, peace of mind, and other benefits derived by the local citizenry through surface stabililty for their homes, as well as protection to public utilities, streets, and buildings is well above the cost of the individual demonstration project. For example, subsidence control projects costing several million dollars can effectively protect public, private, and commercial property with assessed valuation approaching $100,000,000.

Question: The Bureau is presently involved with the Office of Surface Mining in developing a program to begin reclamation activity in certain non coal mine areas. Can you tell us the status of your activities in developing a plan to undertake this work?

Answer: For many years the Bureau has been aware of abandoned minerals or non coal mined land problems and since last November has developed information and data that it can use to develop a program for the non coal mineral mining areas. To do this, the Bureau established an in-house task force, with participation from OSM, to formulate a draft 5-year plan that addresses both coal and non coal abandoned mine land problems. The proposed plan, which is now in the final stages of completion, provides for wider geographic, multimineral, and multiuse newly developed mined land reclamation and restoration methods and techniques that, through the completion of demonstration/reclamation project activity, can provide stabililty and protection to old mine areas with special emphasis placed on those having dense population over the abandoned mined-out areas.

Question: How soon will we see your five year projection to address this problem?

Answer: A draft final report of the task force is now undergoing internal review by Bureau officials. Once their comments are incorporated, the Secretary's Office will review the document before submission to the Congress. We would anticipate that this review process would not take more than a 60-day period.

Centralia Mine Fire

Question: Where are we with regard to action to combat the Centralia Pennsylvania mine fire project.

Answer: Under terms of an interagency agreement between the Bureau of Mines and the Office of Surface Mining (OSM), the Bureau completed a comprehensive technical report outlining several contract options that the OSM could consider for determining final resolution of this critical mine fire problem. Four control options ranging from $22.5 to $84.1 million were identified and explained in this report.

At the request of the OSM, Bureau officials presented a comprehensive two day briefing about the fire and control options to the citizens of Centralia and made available to the Community a sophisticated sub-surface model of the abandoned mine area which outlined the then current fire zones.

At the present time, the Bureau is awaiting a decision from OSM as to the role it will play in resolving the Centralia Mine Fire problem.

Tri-State Lead/Zinc Study

Question: What is the status of the Tri-State lead/zinc problem study?

Answer: Work on the problems of stability and hazard evaluation in the Tri-State lead/zinc area of Kansas, Missouri and Oklahoma got underway with the award September 19, 1980, of contracts to the State Geological Surveys of the three States.

The first quarterly technical review of the study was held in Norman, Oklahoma, January of 1981, attended by geologists from the three State Geological Surveys who are conducting the work together with a representative from the Bureau's Washington and Rolla, Missouri offices.

In each State the Survey personnel are searching published geologic and mining literature, unpublished records, manuscripts, field notebooks, and museum collections that date back to the mid-1800's, for essential historical mining data. All known or discovered underground and surface mines are being plotted on base maps and aerial photographs, dating back to the 1930s, which is furnishing information on old mine shafts, pits, waste piles, tailing ponds, and mills, with opportunity to observe the changes that have taken place with the passage of time. Several retired mining officials have provided access to their personal files of photographs and mine maps which will greatly enhance the coverage and accuracy of the final Tri-State Study Report.

Recovery of Alumina from Anthracite Culm

Question: Last year our committee gave the Bureau a directive to proceed with work in determining whether or not we have any realistic prospects of recovering alumina from anthracite culm. Can you tell us what has been done in this area over the last several months?

Answer: A contract for recovering alumina from anthracite culm is being negotiated. The key step is roasting anthracite culm in a way that leaves the alumina in the ash in a form suitable for leaching with acid. Sole-source procurement is being pursued with Energy, Inc., an Idaho-based firm with considerable experience in roasting technology and a proprietary position with an aluminum company that will investigate the leaching operation.

Mr. YATES. All right.

Mr. MCDADE. I would like to express my appreciation to the people of the Bureau. I have worked more closely with them over the past years than anybody in the Federal Government. They do a superb job and I want you to know that as a member of the committee I know of whole tasks that have been accomplished by you, all the work that you have had to do, and I want to congratulate you on that situation. You did a fine job.

Dr. ENZER. Thank you, Mr. McDade, for those kind words.

Mr. YATES. Mr. Enzer, is there anything you want to tell us or have we covered everything that we should know or things that we ought to know that trouble you about the operation of the Buerau, or would you rather retain stoic silence about that leaving it for future discovery?

Dr. ENZER. There are no major problems that I need to bring up at this time except perhaps to indicate to you, Mr. Chairman, that the Secretary will emphasize at least in fiscal year 1982 the resources technology program of the Bureau to a somewhat greater extent than in the past, and perhaps you should not be surprised if in the revised budget some reprogramming takes place.

Mr. YATES. Well, we are going to leave the record open for the Reagan budget, and the opportunity to ask some more questions in the event we consider such questions to be necessary.

Dr. ENZER. I do not raise this as a problem, sir, I merely am giving you a hint as to the shape our budget may take over the next week or so.

Mr. YATES. We will have some questions that are in writing which we will ask you to answer and Mr. Regula has some questions also.

[The questions and answers follow:]

Questions Submitted by Committee

Research Centers

Question: The Bureau has a number of research centers and field operation sites spread throughout the country. How is the research work distributed and coordinated among the various sites?

Answer: The Division of Research Center Operations is responsible for the facilities and resources at each of the research centers. The Division negotiates the work to be done by the research centers with the Program Divisions, obtains funds from these programs, distributes the research authorizations to the centers, and coordinates the activities to ensure that work outlined and funded by the three Program Divisions is implemented according to program budgets, plans, and priorities. Research Directors at each center are responsible for on site activities, and report directly to the Director of the Division of Research Center Operations.

Question: To what extent is the distribution of work competitive?

Answer: Researchers at each of the centers can originate project proposals for work which relates to problems cited in the Five-Year Plan. These proposals are reviewed and ranked for priority by the Program Divisions. It is possible that two or more centers may have submitted somewhat similar research proposals, and once the Program Division has identified which ones are to be funded, the Division of Research Center Operations assigns the specific location that will eventually perform the research. The research is normally performed at the center which submitted the best proposal and has the best technical capability for performing the work. Thus the Centers can be in competition with each other for funding, but duplication of work is avoided by only authorizing specific items of work to the center selected to perform that task.

Question: What are the advantages and disadvantages of having the work spread over so many different sites?

Answer: Advantages:

- The centers are distributed throughout the country where mineral operations exist nearby thereby minimizing travel to mine or plant sites.
- There is competition among centers for developing technical proficiency and expertise which encourages technical excellence.
- Many of the research centers are near or adjacent to minerals and mining related universities thus aiding in the recruitment of new personnel and in obtaining special assistance and advice from faculty members. This also facilitates the continuing education of Bureau personnel.
- The distribution of employment to many locations has resulting economic benefits to the locale.

- The locations of the centers permit more convenient and effective transfer of technology to the mining and mineral community located in areas where topics are of greatest interest and also more interactions with State and municipal governments on mineral and mining topics of special or local interest.

Disadvantages:

- Effective communication between center technical personnel often involves more travel than ceiling permits.

- The total administrative and overhead costs at a large number of centers are higher than if only a few centers existed.

Question: For the record, for each field site provide the total number of employees, divided between full-time permanents and other and provide a division of cost between overhead and direct program.

Answer:

Location	Personnel on Board[1] FTP	Other	FY 1981 Mines and Minerals Funds[3] Overhead[2] Costs	Direct Program Costs	Total
Albany, OR	158	16	$ 1,922	$ 4,011	$ 5,933
Avondale, MD	76	45	622	2,131	2,753
Denver, CO	101	17	624	3,865	4,489
Pittsburgh, PA	296	62	2,208	11,504	13,712
Reno, NV	80	31	1,450	2,914	4,364
Rolla, MO	61	10	820	1,270	2,090
Salt Lake City, UT	103	22	869	2,665	3,534
Spokane, WA	89	28	1,174	3,143	4,317
Tuscaloosa, AL	53	29	672	1,967	2,639
Twin Cities, MN	183	70	2,240	5,408	7,648
Totals	1227	339	$12,601	$38,878	$51,479

1/ as of March 2, 1981

2/ Overhead costs vary according to the geographic location. For example, in large metropolitan areas, common interagency costs at government facilities are prorated back to the users; this reduces the cost to the Bureau at these facilities.

3/ Dollars in Thousands

Diesel Engine Emission Control Research

Question: Diesel engine emissions cause safety and health concerns for the underground miner. How much do you have budgeted for this research?

Answer: For Fiscal Year 1982, the Bureau has budgeted $1,050,000 for diesel emission control research, and $100,000 for alternative power sources.

The Bureau's diesel engine emissions control research is concerned with development of technology to reduce the harmful emissions from diesel powered mine vehicles. The research is involved with the unique problems which occur in mine environments because of very confined spaces and limited ventilation. Examples of our diesel emission control research include a study of the effects on emissions resulting from the specific maintenance problems which occur in the mine environment, and the optimization of emission controls for mine vehicles.

Alternate power sources are being investigated as a long-range substitute for diesel and electrically-powered mining equipment, in response to Section 501 (a)(10) of the Federal Mine Safety and Health Act of 1977. The funding for alternative power sources will be used to continue an industry cost-shared project to investigate the use of hydrogen-powered equipment for mining applications using safe, metal hydride hydrogen storage systems.

Rock Dusting

Question: The primary protection against coal dust explosions in U.S. coal mines is generalized rock dusting; yet, current techniques for complying with rock dust regulations are cumbersome and expensive. How much have you budgeted for this?

Answer: $150,000 is budgeted for FY 1982. This research will improve the efficiency of trickle dusters thus reducing the cumbersome task to redust return airways.

Health and Safety Training Materials

Question: For the record, please describe the development of core training materials that you have underway now and plan to do in FY82.

Answer: As verified by the report, "A Study to Determine the Manpower and Training Needs of the Coal Mining Industry," which was prepared for the House Appropriations Committee, the quality of training is a problem in the industry. The Bureau has always considered quality a major requirement in the development of all of the core training materials.

Ongoing development of core training materials includes the following that are now in the validation phase, undergoing evaluation and field review - instructional materials for the operation of shuttle cars, continuous miners, and roof bolters. Recommendations being made for program upgrading and industry use will determine the extent of necessary revisions to the instructional strategy and content. The revisions will be accomplished during FY82.

Activities that will enter the validation phase in FY81 include materials for haulage trucks, front-end loaders, mine electricians, surface mine blasting, mine rescue teams, and new miner and refresher training for metal and nonmetal mines. Depending on the validation outcome of the individual efforts, these materials will be available for release during FY82.

The following activities have been initiated during FY81 and are planned to be continued through FY82-material development for underground metal and nonmetal equipment and principal types of surface equipment, such as dozers, scrapers, graders, drills, and hydraulic excavators. Preliminary activities will include the collection of task data, specification of training objectives, and collection of injury data, which is being coordinated with both MSHA and the mining industry. This effort will continue during FY82.

Lake Lynn Laboratory

Question: During FY 1980 and FY 1981, you have been constructing the Lake Lynn Laboratory in Pennsylvania. a) What type of experiments do you plan to operate in this facility? b) For the record, describe the facility. c) How much has it cost to develop the Lake Lynn facility? d) What do you have budgeted in FY 1982 for operation of the Laboratory? e) How many people will be required to operate the facility?

Answers: The Lake Lynn experimental mine will be primarily used to evaluate Bureau-developed fire- and explosion-extinguishing devices and control techniques, passive and active explosion barriers, and ventilation stoppings and bulkheads. Experiments will also be conducted on the explosibility limits, under varying conditions, of coal dust mixed with different ratios of combustion-inhibiting substances like rock dust. Other investigations will provide information on the speed and length of flames from dust explosions, the speed with which gas pressures build up in front of flames, and the composition of gases at various stages of explosions. Such information is needed by researchers working on better ways to safeguard miners against the risk of dust and gas explosions. Potential uses not yet specifically planned for include research on explosion stoppings, ventilation in large underground openings, shaft installation and associated studies on hoisting, diesel engine exhaust studies, explosive fume studies, and operational tests of new mine equipment before taking into an operational mine.

The Lake Lynn Laboratory will be a composite mine facility made up of a single- and a triple-entry mine with interconnecting passageways to the adjacent inactive limestone mine. There will be a conventional U.S. room-and-pillar section and a longwall section similar to U.S. and European longwall sections. This layout will make it possible to compare results on both room-and-pillar and longwall experiments.

$10,056,095 has been spent to develop the Lake Lynn facility.

$1,000,000 is budgeted in FY 1982 for operation of the Laboratory.

The facility will require 18 full-time people, half of whom would be contractor personnel.

Underground Disposal of Mine Waste

Question: For mine waste control you are requesting $6,441,000. a) How much of this total is for the demonstration of two underground coal waste disposal systems? b) How much have you already spent on these projects in FY 1980 and FY 1981? c) What are the advantages of the system? d) What share of the costs will industry and the Office of Surface Mining contribute?

Answer: Recent legislation and regulations have placed stringent restrictions on the surface disposal of coal waste. As these controls raise the cost of surface disposal, alternative solutions to the problem are being sought. One of the most promising of these alternatives, where surface disposal space is limited, is underground disposal of mine waste, especially if such a system can be operated and controlled in conjunction with active mining operations.

To provide specific answers to the underground disposal concept the Bureau awarded two contracts for proposals involving detailed design and demonstration of underground disposal of coal mining wastes at active mines. These contracts were awarded in FY 1980 at a total combined cost of $220,982 ($123,131 to GEX Colorado and $97,851 to Foster-Miller Associates.) Of this total the Bureau contribution was $33,147 and the OSM contribution was $187,835. This research is being done in two phases. Phase I covers the preparation of detailed designs which the initial funding covered and which is essentially completed. Phase II covers demonstration of the proposed system. Two hundred and fifty thousand dollars is programmed in FY 1981 to initiate this Phase. FY 1982 funding planned for continuation of such demonstrations is $250,000.

Two systems, one involving an integrated hydraulic-pneumatic system (Foster-Miller), the other a hydraulic system (GEX), are being designed. Both underground disposal systems are environmentally acceptable alternatives to surface disposal methods. The advantages of these systems are reduction of subsidence; reduction of reclamation requirements; improved roof support when mining operation may require it; elimination of overland transport of waste; and elimination of surface disposal of waste.

Funding estimates for demonstration of these systems are as follows: I) Foster-Miller/Western Slope Carbon Corp. Hawks Nest Mine-A total cost of $2.7 million of which the company will cost share 1.2 million, and the government fund $1.5 million. II) GEX, Colorado/Roadside Mine-A total cost of approximately $2.5 million; industry/government cost-sharing details are not yet negotiated.

OSM has not yet indicated what portion of these demonstration costs they would consider funding.

Mine Land Reclamation

Question : In the FY 1981 Appropriation Act, $16,000,000 was appropriated to the Bureau of Mines for mine land reclamation. a) Please give us a progress report as to how you are using this money. b) What arrangement do you have to coordinate this program with the Office of Surface Mining? c) Why is there no budget request for this program in the Abandoned Mine Reclamation Fund in FY 1982? d) How does the $16,000,000 differ from the $5,131,000 you have in the base for 1981?

Answer: The Bureau and OSM are jointly formulating plans for selecting, planning, and implementing individual projects on a priority basis. Subsequent to the passage of appropriation bills for the Bureau and OSM in FY 1981 the Bureau and OSM met numerous times to develop and select projects to be implemented under the $16,000,000 appropriation. On March 3, 1981, seven projects totaling an estimated $15,000,000 were concurred in and have been initiated. These projects include four projects in Pennsylvania, one in Alabama, one in Wyoming and one in Kansas.

A memorandum of agreement between the Bureau and OSM on this subject was signed on January 19, 1981, delineating each agency's overall responsibilities.

Following the creation of the Office of Surface Mining, the previous administration decided to request funding for abandoned mined land reclamation projects through the Office of Surface Mining. The Bureau was thus precluded from submitting a budget request for this program in FY 1982.

The $16,000,000 was appropriated to the Bureau for abandoned mined land demonstrations. The $5.1 million is the total funding for the MET research program in surface mining reclamation and spoil stabilization which is separate from the Bureau programs and projects directed to the conduct of large scale reclamation/demonstration program and project activities. Work accomplished under the $16,000,000 demonstrates application of available technology to abandoned mined land reclamation whereas the $5,131,000 develops new technology, applied to both coal and non coal surface mine reclamation, where such technology gaps are found to exist.

Coordination of Energy Environmental Programs

Question: The Senate Interior Appropriations Committee Report asked the Administration to review the agencies involved in energy environmental matters. The committee is concerned that the research is not well coordinated. a) What have the results of the study shown? b) If the study has not been done, when can we expect it? c) Does your FY 1982 request include any funds for alternate fuels related work?

Answer: The Bureau has been concerned about coordination in energy environmental matters for many years. For six years the Bureau has been an active participant in the Federal Energy Information Exchange Committee. During last year an agency matrix was developed that identified agency research by subject and funding levels for coal reclamation. The goal of this group is to be certain that maximum cooperation and minimum overlap in maintained among the various agencies. The Bureau's environmental research program is extensively coordinated with other Federal agencies such as DOE, EPA, USDA, USGS, OSM and others, through formal Memoranda of Understanding and/or exchange of programs and review to develop mutually supportive and coordinated research programs.

Program coordination between the Bureau and Federal and State agencies is important not only from the standpoint of unnecessary program overlap, but also to ensure that high priority research is being appropriately addressed. A listing describing agency coordination involved with the Minerals Environmental Technology is included in Appendix A.

The Bureau is currently conducting a comprehensive review of its Minerals Environmental Technology program that will include this coordination question. This study will provide a solid conceptual basis and framework for the program based on objective consideration of: a) What the national mineral-related needs/problems are? b) Which aspects of those problems can or should be addressed by research? c) What research the Federal extablishment should do, and why? d) What research the Bureau should do, and why? e) The program goals/objective that logically follow from these considerations, f) The best organization of effort (i.e., program structure) to meet these goals, and g) the proper relative priority among the derived goals, objectives and programmatic elements. This study will be completed by September 1981.

The Bureau's current Minerals Environmental Technology program does not include any research to enhance productivity of any fossil or non-fossil fuel; no funds are requested in FY 1982 for alternate fuels work. The FY 1981 budget reduction in the area of alternate fuels halted 40 years of Bureau of Mines research on oil shale-related environmental problems and terminated Bureau research at the Bureau-owned shaft in the Colorado oil shale formation.

Appendix A

Federal/State Coordination

Federal

- o USGS - Cooperator on Coshocton hydrology study
  - Share data on Powder River hydrology study
  - Represented on BOM/USGS Coordinating Committee
  - Contractor for Tug Fork flood study
- o OSM - Cooperator on detailed designs for underground coal waste disposal demonstration
  - Coordination is maintained on all abandoned mine land projects funded by passthrough.
- o EPA - BOM is cooperator on their major Solid Mining Waste study under RCRA; represented on their coordinating committee for mine spoil stability
  - Joint EPA/BOM support for the Citrate Process Demonstration Plant for SO_2 removal from flue gas
- o Department of Commerce (NOAA) - Cooperator on characterization and onshore disposal studies for manganese nodule rejects; represented on government-industry working group
- o OWRT - Direct input into the Water Research and Technology's National Five-Year Water Resources Research, Development, Demonstration, and Technology Transfer Program
- o Corps of Engineers - Cooperator for testing acid reducing properties of surfactants on pyritic road-cut material
- o DOE - Memorandum of Understanding covering research coordination
  - Developing a memorandum of agreement relative to coordination of acid mine drainage control research
  - Highly coordinated subsidence program
- o Office of Technology Assessment - BOM is represented on OTA Task Force on "Freshwater Resources Management Policy and Planning: An Assessment of Models and Predictive Methods"
- o Fish and Wildlife Service - BOM is funding a FWS project to develop a handbook for coal operators to enchance fish and wildlife in five coal regions. Cooperator on Powder River monitoring and modelling study.
- o Bureau of Indian Affairs - cooperator on Crow Indian study in southeastern Montana and with Navaho and Hopi Indians in Arizona for water harvesting project
- o Bureau of Land Management - BOM controls coal outcrop fires for BLM
- o Department of Agriculture - Science and Education Administration-Agricultural research on improved grasses for mined land reclamation and Coschocton hydrology study
- o Forest Service - MOU on coordination signed 1980
  BOM restoration project on FS land in Holden Village, Washingto
  BOM controls coal outcrop fires for FS.
  FS lab at Berea, Ky, serves as laboratory for BOM water samples analysis.

- Soil Conservation Service - cooperator on Coshocton hydrology study
- TVA - exchange of information on fertilizer development

State

- Interstate Mining Compact Commission (IMCC) - under contract, prepared small sand and gravel operations planning and reclamation guide for BOM. Seventeen states are represented by IMCC.
- Kansas - State geologic survey is identifying abandoned lead/zinc mine openings and coal mine subsidence problems near Pittsburgh, PA.
- Oklahoma - State geologic survey is identifying abandoned lead/zinc mine openings
- Missouri -State geologic survey is identifying abandoned lead/zinc mine openings.
- Arizona - Coordination in Tucson on a Globe-Miami water management study; also involves EPA
- Pennsylvania - Cooperator on project to assess effectiveness of deep mine seals for acid mine drainage abatement
- Minnesota and Wisconsin - State's Departments of Natural Resources are cooperator on copper-nickel and uranium ground water projects; also cooperating on acid mine drainage study
- Ohio - BOM contractor on Coshocton hydrology study
- Illinois - State geologic survey and university cooperators on subsidence study in Danville area; monthly coordination at Illinois Basin meetings
- Kentucky - Cooperation on mine haul road stability and erosion study
- Wyoming - Department of Environmental Quality - BOM in advisory role concerning abandoned coal mine program
- North Dakota - BOM has been requested by governor's office to extinguish coal outcrop fires on Forest Service and Bureau of Land Management lands.
- Florida Institute of Phosphate Research - Coordinate research on phosphate minerals
- BOM has cooperated with state agencies to put out coal outcrop fires on Bureau of Land Management lands in Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico.

Question: There is a $150,000 increase over the FY 1981 base for Minerals Environmental Technology because of a reduction for alternate fuels related work. What did you cut out of your FY 1981 program and what will you put into the FY 1982 program with this $150,000 increase?

Answer: Planned activities in the alternate fuels area for FY 1981 had been approximately $1,100,000; the budget reduction was $1,250,000. Therefore, in addition to all alternate fuels related-research being terminated in FY 1981, contract efforts in the Mine Waste Control subprogram were cut back by $150,000, specifically in the water management area. An increase of $150,000 will be restored to the Mine Waste Control subprogram in FY 1982 and is presently programmed for demonstration of the underground disposal of coal mine waste.

Oxidizing Leach Process

Question: During FY 1982, you plan to complete testing of an oxidizing leach method for treating lateritic deposits. These deposits have the potential to yield cobalt, nickel, and byproduct chromium, all among our critical minerals.

-- What results, if any, do you have from the work to date?

-- What is the potential of this work?

Answer: The following results have been obtained:

- Pilot plant testing of the oxidizing leach process has been completed
- Up to 85 percent of the cobalt and 93 percent of the nickel can be extracted, which is significantly more than can be extracted using currently commercial technology.
- An intermediate grade chromite concentrate obtained from the leach residue is being studied to evaluate technology for recovering chromium.

A single 5,000 ton per day mine and processing plant could supply:

- Up to 20 percent of the current consumption of cobalt, and
- About 5 percent of the current consumption of nickel.

In an article published on February 27, 1981, the San Francisco Chronicle reported that California Nickel Corporation plans to establish a mine and plant on this scale. Elements of the Bureau of Mines' oxidizing leach technology will be included in the plant. (A copy of the article is included.)

San Francisco Chronicle FRI., FEB. 27, 1981

Kaiser May Build Huge Plant

By Lloyd Watson

Plans moved ahead yesterday for construction of a $250 million nickel processing plant 17 miles northeast of Crescent City, Del Norte County.

A contract for a feasibility study of the project, which would provide 450 new jobs for the economically depressed fishing and lumbering community just south of the Oregon border, was awarded Kaiser Engineers of Oakland by California Nickel Corp., a subsidiary of Ni-Cal Developments Ltd. of Vancouver, Canada.

California Nickel president William Hosken said the facility would process ore from the company's 8000-acre Gasquet Mountain nickel-cobalt-chrome laterite deposit in the Six Rivers National Forest.

"We believe there is sufficient surface tonnage for a 5000-ton-a-day processing facility," he said.

A retired Cyprus Mines vice president residing in Palos Verdes, Los Angeles County, Hosken said the firm acquired the claims in 1976 and has been working on the project ever since.

He said an improved heating and leaching process for extracting the minerals from the dry, clay-like laterite soil is now being tested at a pilot plant in Tucson, Ariz. by UOP Inc., a division of the Signal Cos.

The Del Norte property is "near the southern end of a shallow belt of laterite that runs about 20 feet deep," Hosken said. "Hanna Mining's nickel plant at Riddle, Ore., which has been operating since the Korean War, is close to the belt's northern end."

Kaiser Engineers' engineering study is expected to take about ten months.

Meantime, applications for environmental approval are about to be filed, Hosken said. "After that is granted, it will take about 2½ years to build the plant."

California Nickel's parent company, Ni-Cal Developments, is a publicly-owned Canadian corporation whose shares are traded in U.S. over-the-counter markets.

Recovery of Cobalt

Question: At the present time, the economic recovery of cobalt from complex ores is not possible with existing technology. How much are you budgeting for cobalt recovery in the FY 1982 budget? How does this compare to FY 1980 and FY 1981?

Answer: We are budgeting $1,325,000 for research on cobalt recovery in FY 1982. Included is research on processing technology for low-grade resources and on methods to recover and recycle cobalt from scrap materials. This compares to $885,000 in FY 1980 and $1,165,000 in FY 1981.

Question: What other sources of cobalt may be available to the United States?

Answer: The identified cobalt resources of the United States are more than 700,000 tons, chiefly in the Midwest and Far West. (The identified cobalt resources of the world are about 6 million tons).

The larger resources are:

- 125,000 tons in the Duluth gabbro formation near Ely, Minnesota
- 75,000 tons in the southeast Missouri lead district
- 75,000 tons in the laterite zone of northern California and southern Oregon
- 62,000 tons in Alaska, principally in the southeastern region
- 33,000 tons near Cornwall, Pennsylvania
- 25,000 tons in the Blackbird district of Lemhi County, Idaho. (This is the highest grade cobalt (0.6 percent) ore of the known domestic resources.)

The remaining U.S. resources, ranging from less than 1,000 tons to about 20,000 tons, are distributed among eleven other states.

A significant amount of cobalt may be recoverable from superalloy scrap, provided that effective recycling technology becomes available.

In addition to these land-based resources, sea nodules that are widely distributed on the ocean floor contain some cobalt in addition to manganese, nickel, and copper.

Question: As part of the conservation of domestic resources program you list the development of an on-line assaying system to determine and control ore grades between the mine face and the processing plant.

-- What are the cost projections for FY 1983 and FY 1984 for this program?

Answer: The projected costs are $300,000 in FY 1983 and $250,000 in FY 1984.

Development of Domestic Alumina Resources

Question: For each of the years 1980, 1981, and 1982, list all the work you are doing to develop domestic alumina resources. Include a brief description of each item including cost factors.

Answer: During the three-year period, the following items have been or are proposed for providing technical information directly on developing domestic alumina resources:

	Dollars in thousands		
	FY 1980	FY 1981	FY 1982
Extraction of alumina from clay using hydrochloric acid leaching.	$1,130	$ 480	$ 700
Use of alternative techniques to recover alumina from clay. (These are new key steps that require bench-scale R&D to achieve improved efficiency, lower equipment costs, and/or decreased energy consumption.)	190	170	340
Extraction of alumina from clay using nitric acid leaching.	120	280	---
Evaluation of environmental factors in the utilization of domestic resources for alumina recovery.	40	---	---
Extraction of alumina from anthracite culm.	---	250	---
Study of techniques to recover alumina from coal ash and coal shale.	---	---	90
Extraction of alumina from anorthosite using hydrochloric acid leaching.	---	---	60
	$1,480	$1,180	$1,190

In addition, the following items are related to the goals of the work on developing alumina resources:

By-product recovery from dawsonitic oil shale. (Both soda ash and alumina are included. The cost factor shown is for alumina only.)	80	160	130
Carbochlorination of clay. (This technology is being studied as fundamental research. The objective is to produce pure aluminum chloride.)	---	350	475
	$ 80	$ 510	$ 605
	$1,560	$1,690	$1,795

Question: What research is being conducted on alumina resources by industry or other government agencies?

Answer: Even though we have direct contact with the cost-sharing cooperators (five aluminum firms) of our alumina project in Boulder City, we do not know all of the research being conducted on alumina resources by industry. Certainly, we can infer that each of these five firms is or has been investigating proprietary variations of our work. Of the cooperators:

- Anaconda patented a clay/hydrochloric acid process in the early 1960's.

- Reynolds Metals is known to have a position in clay/nitric acid technology.

- Kaiser Aluminum, through its research laboratories, has supplied information that has been applied directly in the Boulder City project.

- Alcan has an interest in the alumina process investigated by the French firm Aluminium Pechiney that uses both sulfuric acid and hydrochloric acid to treat shale from Brittany.

Of other research, Alcoa recently patented an acid leaching process to treat the rock anorthosite. Toth Aluminum Co. is working on carbochlorination as a method to make alumina from clay. Gibbsite Corp. of America (subsidiary of Colonial Oil and Gas Corp.) has patented a process to recover a gibbsite product from saprolite. In the mid-1970's, alunite from deposits in Utah was proposed as a source of alumina, potash, and sulfuric acid (for fertilizer production); a joint effort by Earth Sciences, Inc., National Steel Co., and Southwire Co. investigated the application of Russian technology on a pilot plant scale.

Overseas, I/S Anortal of Norway is working on hydrochloric acid leaching of anorthosite found, as we understand, along one fiord and in Greenland. The West German firm VAW (Vereinigte Aluminium Werke AG) has recently patented a variation of hydrochloric acid leaching applied to clay. The East German government has decided that its interest will best be served by having a domestic source of alumina, and it is developing a hydrochloric acid leaching technology, too.

Government research other than that conducted by the Bureau of Mines involves two laboratories funded by the Department of Energy. Both the Oak Ridge National Laboratory and the Ames Laboratory are conducting research on the recovery of alumina from powerplant fly ash. Tennessee Valley Authority is also conducting work on alumina recovery from fly ash.

Research on Substitutes for Strategic and Critical Minerals

Question: Substitute materials for critical and strategic minerals is one way to overcome our dependence on foreign sources. How much do you have budgeted for development of substitute materials? What percentage of the Mineral Resources Technology request is this?

Answer: The total budgeted for research on substitute materials is $4.1 million. This is 12.7 percent of the request for Mineral Resources Technology.

There are two parts to this funding request. It includes $2.1 million in the FY 1982 base and a requested increase of $2 million for research to find new materials for mining and processing equipment as well as for energy development. The objective of the research is to find substitute materials that provide adequate performance without having to use as much of the strategic and critical materials that are sometimes required to give best performance.

Question: What research on substitute materials looks particularly promising?

Answer: There is a significant number of research approaches that look promising in this area of substitute materials:

* Low-Chromium Alloy Substitutes for Chromium-Base Stainless Steels. Foreign sources, such as Zimbabwe and South Africa, account for over 90 percent of the U.S. chromium supply. To effect reduction of national requirements for chromium, research is directed toward devising new alloys with adequate chemical and physical properties. Iron alloys strengthened by intermetallic compounds and iron-aluminum alloys strengthened by carbide precipitation have been shown to have adequate corrosion resistance to substitute for stainless steels in many applications. Research also has demonstrated that surface-nitriding of plain carbon steel can make a material substitute for stainless steels in some cases. The nitriding makes the surface corrosion resistant to many combustion atmospheres that now require stainless steel or other heat-resistant materials.

* Reinforced Composites as Substitutes for High-Temperature Chromium Alloys. Metal-matrix composite materials investigated as substitutes for chromium- and cobalt-base superalloys show promise for high-temperature uses such as in gas turbine engines. These composite materials are based on non-critical iron alloys that are reinforced with either silicon carbide or molybdenum filaments. These innovative materials made by powder techniques have adequate strength and corrosion resistance for use up to 2,000° F.

* Substitutes for Cobalt and Platinum in Magnets. Samarium-cobalt and platinum-cobalt alloys are used for high-temperature magnetic devices. As substitute materials in magnets, our early research has shown that nearly as good magnetic properties are obtained when copper, iron, nickel and/or magnesium are used to replace part of the cobalt constituent of super magnets. In addition, rare earth metals can be used instead of platinum. (Although identified as rare earth metals, the ore from which they are recovered is abundant in the Western States.)

* Substitutes for Chromite in Basic Refractories. Iron and steelmaking require large quantities of magnesia refractories, with over 70 percent of these refractories containing chromite. Some of our recent studies indicated that magnesia refractories can be improved while replacing the chromite. Magnesia refractories prepared from periclase grain material with small additions of oxides of zirconium and manganese exhibit high-temperature properties equivalent or superior to those containing chromite.

* High-Purity Titanium Powder for Powder Metallurgy. Titanium is a strong, lightweight, and corrosion-resistant metal. However, it is expensive, $7.00 a pound before melting and casting into solid ingots, and requires special fabrication methods. Research is being conducted to prepare titanium powder from molten metal using a novel furnace developed by the Bureau. The difficulty which this technique overcomes is that it prevents contamination of the powder. The powder metallurgy technique offers the significant advantage of making parts into shapes close to the final specifications, saving time, energy, and material.

* Substitutes for Silver Brazing Alloys. Silver-cadmium alloys are chiefly used for conventional brazing applications. This accounts for seven percent of the total domestic consumption of silver in a use from which little silver is economically recyclable. Successful steps toward developing substitute brazing alloys based on the copper-manganese system have been achieved.

Substitutes for Fluorspar in Steelmaking. The use of fluorspar as a flux for steel production accounts for 32 percent of its consumption. Because more than 80 percent of the fluorspar supply is imported, research has been conducted to find domestic substitutes. One promising substitute is the wornout liners from the electrolytic cells used for producing aluminum. These carbon liners are penetrated by the fluorine salts used in the cells. Experiments have shown that this material could replace fluorspar in cast-iron cupola furnaces and substitute for part of the fluorspar flux used in steelmaking.

Mineral Land Assessments

Question: How are the Wilderness Land Assessments conducted? Describe how a typical assessment is done.

Answer: The Bureau of Mines: (1) compiles and documents past mining claims and related mining activities of areas; (2) conducts field work to evaluate claims and deposits and maps underground and associated surface workings in coordination with the Geological Survey; (3) takes engineering samples from mines and mineral deposits; (4) investigates possible extensions of mineralized structures exposed in existing workings and outcrops by all appropriate means, and coordinates estimations of inferred resources with Geological Survey; (5) collects and evaluates assay, engineering, metallurgical and economic data on past and ongoing exploration by private industry and other sources; and (6) evaluates the mineral potential of the areas based on the compilation and interpretation of all available pertinent data.

Question: How is the work on the wilderness assessments divided between the Geological Survey and the Bureau of Mines?

Answer: The Geological Survey and Bureau of Mines have joint responsibility for the appraisal of reserves and assessment of mineral resources potential on Federal lands. The Geological Survey has the primary responsibility for geologic, regional geophysical surveys, and the evaluation and interpretation of these data to assess total mineral resource potential. The primary responsibility of the Bureau of Mines is to identify, sample, and evaluate mines, prospects, and associated mineralization and to document past and ongoing production, and from these data to appraise the mineral potential and estimate identified subeconomic mineral resources.

Question: For the record, please provide workload data for wilderness land assessments for FY 1980, FY 1981, and FY 1982.

Answer:

WILDERNESS LANDS WORKLOAD
(MILLION ACRES)

STUDY CATEGORY	TOTAL AREA TO BE STUDIED	DRAFT REPORTS COMPLETED END FY 79	SCHEDULE					
			FY 80		FY 81		FY 82	
			FIELD WORK	DRAFT REPORTS	FIELD WORK	DRAFT REPORTS	FIELD WORK	DRAFT REPORTS
WILDERNESS LANDS	24.2	15.8	1.0 1/ (0.6) 2/	2.0	0.4 1/ (1.1) 2/	4.6	0.5 1/ (0.2) 2/	0.7
RARE II LANDS (FURTHER PLANNING)	11.8	0.0	2.4 1/ (0.7) 2/	0.7	2.0 1/ (3.6) 2/	3.2	2.0 1/ (1.3) 2/	5.1
Total	36.0	15.8	3.4 1/ (1.3) 2/	2.7	2.4 1/ (4.7) 2/	7.8	2.5 1/ (1.5) 2/	5.8

1/ New Starts
2/ Carryover

MINERAL LAND ASSESSMENT
(MILLION ACRES)

STUDY CATEGORY	TOTAL ACREAGE TO BE STUDIED	DRAFT REPORTS TO BE COMPLETED END FY 81	DRAFT REPORTS STILL TO BE COMPLETED	AUTHORIZING ACT	DUE DATES
FS- WILDERNESS	24.2	22.4	1.8	P.L. 88-577	9-3-84
FS-RARE II "FURTHER PLANNING "	11.8	3.9	7.9	RPA	12-31-82
FS-RARE II "WILDERNESS RECOMMENDATION"	6.9	0.0	6.9	RPA	NOT SPECIFIED
INTERIOR LANDS	7.7	3.7	4.0	SECY. ORDER	NOT SPECIFIED
BLM WILDERNESS	18.2	0.9	17.3	P.L. 94-579	10-21-91
ALASKA LANDS					
"WILDERNESS"	56.0	0.0	56.0	P.L. 96-487	NOT SPECIFIED
"NON-WILDERNESS"	70.0	0.0	70.0	"	12-2-85
"BLM LANDS"	4.5	0.0	4.5	"	12-2-88

Question: What is the workload for the Minerals Investigations subprogram for FY 1980, FY 1981 and FY 1982?

Answer: The Bureau of Mines reviews and comments on approximately 1000 engineering/environmental studies annually. These include environmental impact statements, State Coastal Zone Management programs, and river basin, water, and land use studies . The studies are initiated by other agencies and are reviewed for adequacy of mineral information.

The Bureau responds to approximately 2,500 annual requests from the public and the minerals industry for information on the nature, location, and extent of mineral occurences on lands assessed by the Bureau.

The Bureau conducts or participates in the conduct of approximately 5 river basin and reservoir damsite investigations each year at the request of agencies such as the Water and Power Resource Service, the Corps of Engineers, and various river basin commissions. The purpose of these studies is to assure mineral consideration in decisions to construct or modify dams, stream or channel modifications, and comprehensive river basin planning.

Additional projects scheduled for FY 1982 includes an update of data on water requirements for mineral development, and identification of Federal lands withdrawn, restricted, or otherwise removed from mineral production in 4 of 11 Western states.

Question: How extensive is the national mine map repository? Has it been used as resource for the inventory of abandoned mine lands that the Office of Surface Mining is preparing?

Answer: The national mine map repository contains about 100,000 mine maps on microfilm for the contiguous United States. Most of the films cover underground mines in the Eastern United States.

The Bureau of Mines has supplied the Office of Surface Mining at their request with copies of three(3) mine maps.

Emergency Minerals Administration

Question: The budget justification describes one of the functions of the Chief Staff Officer as coordination with the Department of the Interior Emergency Minerals Administration. What is this administration?

Answer: Pursuant to Executive Orders 10480 and 11490 under the Defense Production Act as amplified by Federal Register Document 67-1313, and Executive Order 12155 under the Stock Piling Act, the Department of the Interior is responsible for emergency readiness plans and programs for all non-fuel minerals. As set forth in detail in FR 67-1313, the Department of the Interior is, in general, responsible for mines, concentrating plants, and refineries, and for the ores, concentrates, and other materials treated in such facilities. The Department of the Interior has chartered the Emergency Minerals Administration to carry out actual operations in the event of a major emergency, and the Emergency Minerals Administration is based upon the Bureau of Mines, with support as needed from the U.S. Geological Survey and other Interior units. In emergencies, the Department of the Interior operates under the direction of the Federal Emergency Management Agency (FEMA). As a result of its continual monitoring of mineral supply/demand and its technological competence, the Bureau of Mines has the framework needed to discharge priorities, allocations, and supply expansion responsibilities under the legislation cited earlier. The Bureau would also act as the claimant agency for the mineral sector of the economy to assure needed fuel, power, transportation, personnel, supplies, and equipment. To facilitate coordinated government action in the event of an emergency, the Bureau in 1975 organized nearly 100 interagency mineral commodity committees. These committees include experts from the Bureau of Mines, the U.S. Geological Survey, and one or more areas of State, Commerce, Defense, CIA, FEMA, GSA, Treasury, U.S. Trade Representative, Council of Economic Advisors, International Trade Commission, and the Commodity Futures Trading Commission, and for certain commodities, Agriculture and Transportation. These committees would be promptly called upon in the event of any emergency. In the event of a supply disruption, the first action to be taken would be to monitor exports, followed, if necessary, by export controls. A worsening supply situation would require imposition of a system of priorities, under Title I of the Defense Production Act, whereby rated orders would have to be filled first. If priorities proved to be inadequate, they would be followed by a system of allocations, also authorized by Title I. At some point in a serious shortage situation recourse to the strategic stockpile might be required. The Stock Piling Act provides for release "(1) on the order of the President, at any time the President determines the release of such materials is required for purposes of the national defense; and (2) in time of war declared by the Congress or during a national emergency, on the order of any officer or employee of the United States designated by the President to have authority to issue disposal orders . . . if . . . required for purposes of the national defense." To release stockpiled materials, FEMA, in consultation with other agencies including the Bureau of Mines, would prepare a justification and recommendation for the President's signature. Export controls, priorities and allocations, and stockpile releases, however, are only temporary measures of limited effectiveness. Any long lasting supply disruption would call for supply expansion programs under Title III of the Defense Production Act. These would cover not only domestic deposits but also deposits in reliable foreign sources. The Bureau of Mines would recommend needed mineral supply expansion programs to FEMA, which would then direct GSA to make the necessary contractual arrangements.

Technology Transfer

Question: The Bureau has a large number of ongoing research programs with the potential to be of use to the mining industry: a) How do the Bureau's research program successes get translated into the mineral and metallurgy industries? b) What resources do you have devoted to technology transfer? c) To what extent is industry involved in the front-end development of projects?

Answer: The successes get translated to industry by the following: 1) The on-site demonstration, an example being the spray fan technology for methane control on continuous miners. 2) Cooperative agreements and cost sharing contracts, examples being the visibility and fire protection hardwares being demonstrated under cooperative agreement with the Pittsburgh and Midway Coal Mining Company and the water spray coolers being demonstrated under cost-sharing contract with the Homestake Mining Company, and 3) Bureau publications series, articles by Bureau authors in the literature, films, exhibits, seminars, open industry briefings, special briefings for MSHA headquarters and field personnel, and special briefings for industry.

Resources specifically devoted to research technology transfer activities include $160,000 funding and 6 personnel in the Branch of Technology Transfer within the Division of Minerals Health and Safety Technology. This Branch is concerned primarily with accelerating health and safety results into the mines, but also assists the two other research Divisions in the Bureau's Research Directorate. Research facilities that support the technology transfer effort include the 10 Bureau field centers, the Bructon Experimental Mine, the Lake Lynn Test Facility under construction, and several contracted facilities, such as the drop tower facility at the Colorado School of Mines. There are also facilities that are available for demonstration activities under agreement with other agencies and foreign governments. The Bureau also has film-making capability and exhibit preparation capabilities.

Minerals industry involvement in front-end development of projects is achieved 1) through meetings with special industry committees, such as their committees on mine illumination, longwall respirable dust, methane gas, and cabs and canopies 2) through special MSHA requests that reflect industry concerns, such as the special studies requested by MSHA on the safety of oxygen self-contained breathing apparatus 3) through direct input from industry, such as input on needed diesel projects from the Colorado Mining Association and on noise from the American Iron Ore Association 4) through negotiations and individual cooperative or cost-sharing projects, for example the involvement of equipment manufacturers in planning and implementing rollover protection tests on large surface mine vehicles. In this case, the manufacturers ultimately donated over $1,500,000 worth of machinery and have closely monitored the testing.

Question: The budget justification states that, among other things, the Minerals Health and Safety Technology program is designed to increase the rate of transfer of new health and safety technology into mines and mineral processing plants. How much do you have budgeted for technology transfer?

Answer: The Bureau does not budget directly for technology transfer. The mission of the Bureau requires a broad array of technology transfer activities including the Bureau's longstanding publication series and special technology transfer publications, seminars, exhibits, demonstrations, participation in conferences, international scientific information exchanges, films, and briefings. Technology transfer is considered the ultimate end product of all Bureau research projects. Consequently, the considerations of technology transfer are important to the success of research efforts being pursued and most of the costs and manpower associated with the technology transfer plans are directly borne by the respective program areas. One exception, however, is the Branch of Technology Transfer in the Bureau's Research Directorate. This branch has a budget of $160,000 covering salaries and travel. It was created to accelerate transfer of health and safety research results. Recently it has made its services available throughout the Research Directorate.

Helium Program

Question: During 1980, Mobil Oil drilled and completed a second well in the Tip Top Field in Wyoming for the purpose of evaluating the prospects of developing fuel gas production from four deep gas zones. What knowledge have we gained from the second well?

Answer: Mobil has not only completed its second well, it has completed the third well and is drilling the fourth. In addition, the American Quasar Petroleum Co. (Quasar) has completed a well about 6 miles northwest of the second Mobil well and is in the process of drilling another. Although all of these wells have not been tested, engineering data from electric logs of the new wells have increased our knowledge of the porosity and areal extent of the helium-bearing gas zones. Based on this new information, the Bureau now estimates Tip Top helium resources to be about 60 billion cubic feet. This represents a 33-percent increase over the Bureau's prior estimate, which was made before the new wells were drilled.

In addition to Mobil and Quasar, Exxon is also drilling in the immediate vicinity of Tip Top. As information becomes available from these new wells, the Bureau's estimate of helium resources will be refined. There is every indication, however, that the volume of helium in Tip Top is much larger than previously estimated.

Question: What are the options associated with the Tip Top Field?

Answer: There are three basic options associated with Tip Top Field. First, continue to study developments pending recommendation of a specific program; second, do nothing; and third, initiate a program to capture all of the federally owned helium. The Bureau favors the first option because (1) more wells are being drilled and are planned to be drilled, which will provide better data for estimating the volume of resources, and (2) the need for this helium will be better defined. This course of action should not require any appropriations until FY-85 or FY-86 at the earliest. Even if gas is produced before helium recovery facilities are completed, the loss of helium will be a small percentage of the total resource. Initiating conservation at the earliest possible moment, based on hypothetical and speculative information, might result in unwarranted Federal expenditures. Additional drilling is providing more positive information about the size of the resource. Continuing the Bureau's present policy will not require any appropriations for more helium conservation until the extent of the resource is defined and the need for conserving more helium is better established.

Question: From FY-80 to FY-82 the operating costs of the Helium Fund are projected to rise by 22.8%. As part of this increase, administrative expenses will have risen 37%. What has contributed to this large increase?

Answer: There has been no increase in administrative personnel. The apparent $275,000 increase in "Administrative and Other Expenses" is caused primarily by cost allocation rather than an actual increase in administrative support services. Administrative expenses were low in FY-80 because part of the administrative overhead was allocated to major capital projects. Because there are no capital projects of the same magnitude in FY-82, more of the administrative cost appears under "Administrative and Other Expenses." Additionally, about one-third of the increase is the result of the general comparability pay increase of 9.1% in FY-81 and 5.5% projected for FY-82.

Question: What is the Bureau doing to hold down these administrative costs?

Answer: The number of administrative positions has been held constant. Associated expenses, such as overtime and travel, have been curtailed or eliminated. Equipment is being repaired rather than replaced.

Energy Savings

An increase of $900,000 is requested to allow the Bureau to achieve at least a 20 percent savings in energy use.

Question: a. How far will this $900,000 go toward the meeting the objective of a 20% savings in energy use by FY 1985?

Answer: The $900,000 to be spent in FY 1982 should enable the Bureau to achieve the additional savings necessary to attain the goal of 20% energy savings. Pittsburgh, our largest center,is being retrofitted in FY 1981, and the two planned retrofittings for FY 1982 are the second and third largest centers.

Question: b. How much of the request is for survey and how much for retrofit?

Answer: Estimated Costs, FY 1982

Research Center	Survey	Retrofit	Total
Albany, OR	$107,000	$321,000	$428,000
Twin Cities, MN	$118,000	$354,000	$472,000
		TOTAL	$900,000

Question: c. How long will it take to recover the investment from energy savings?

Answer: Assuming weather similar to that in FY 1980 and continued severe rate increases, it its estimated that the investment will be recovered in approximately 10 years.

Question: d. This request covers only two research centers. What is the plan to achieve energy savings at all the Bureau facilities?

Answer: Approximately $800,000 will be requested in FY 1983 to achieve additional energy savings at the remaining Bureau-owned Research facilities. The Spokane facility is leased and the Denver facility is operated by the General Services Administration. The estimated costs are:

Research Centers	Survey	Retrofit	Total
5	$200,000	$600,000	$800,000

Question: e. Is your plan part of an overall Department of the Interior plan?

Answer: Yes, this plan is part of an overall Department of Interior plan.

Control of Administrative Costs

Question: There is an increase of $1,417,000 in FY 1982 for rent payments, telephone service, and payments to the U. S. Postal Service. What attempts have you taken to control these costs?

Answer: The control of costs is of primary interest and is an item that constantly is evaluated and analyzed. All requests for additional space are studied in depth. Possible alternatives are reviewed to be sure that a requirement is valid. Reconfiguration of space and the relocation of segments of an organization are evaluated before new or additional space is requested.

Telephone service is under constant review. Each request is analyzed and all options are studied to insure that a new requirement is valid. Such things as combining small key systems, the realignment of numbers in a current system and even the sharing of telephones are studied before an increase in service is approved.

The reduction of postal charges is an on-going awareness program. The following points are stressed -consolidated mailing should be used whenever possible - fourth class mail is an excellent alternative to first class mail when time is not a controlling factor - registered or certified mail should be used only when control is required and letter size envelopes should be used in lieu of 9½" x 12" envelopes whenever possible because when the larger envelope is used the cost almost doubles.

Administrative Support for Office of Surface Mining

Question: According to material supplied the Subcommittee, the Bureau of Mines has received 10 additional positions from the Office of Surface Mining to provide them with administrative support services. What administrative support services have you provided?

Answer: The administrative support services provided by the Bureau of Mines for the Office of Surface Mining are rather extensive and encompass the systems pertaining to payroll, finance, procurement data, property accountability, fee collection, payroll/personnel, retirement, FEDSTRIP ordering, R&D (refinement) for the fee collection system and the ADP functioning for the above systems, i.e.,the computer on which the systems are programmed and operated.

77-383 O—81——42

Administrative Matters

Question: According to the Budget, there is only $125,000 budgeted for consulting services. What are the comparable totals for FY 1980 and FY 1981? Provide the Committee with examples of how you plan to use the $125,000.

Answer: Comparable totals in FY 1980 were $125,000. In FY 1981 the totals were also $125,000. FY 1982 funds will be programmed as the specific need arises in the area of program evaluations, organization and management analyses, and determination of ADP requirements. In past years, these funds have been used for the Publications Effectiveness Impact Survey; and for the initial phases of the ADP Requirements Survey.

Question: According to the object class schedule on page BM-69, there is $100,000 for grants, subsidies, and contributions. What does this $100,000 cover?

The FY 1981 request in this object classification was $1,000,000, yet the FY 1981 column of the FY 1982 budget shows $100,000. What happened to the $900,000?

Answer: The $100,000 for the object class for grants, subsidies, and contributions covers the amount of funds distributed to academic institutions in the form of grants to perform research and development activities, economic studies, and other technical activities of direct interest to the Bureau.

The variance between FY 1981 object class request and the FY 1981 request of the FY 1982 budget represents the utilization of more contractual arrangements for distributing funds for those activities which are not by definition considered grants according to P.L. 95-224, The $900,000 differential reflects this action and is reported under the object class for other services as contracts.

Question: The average grade for the Bureau of Mines increased from 9.33 in FY 1979 to 9.62 in FY 1980.

-- What has created this large increase in the average grade?

-- What plan does the Bureau have to control the grade creep?

Answer: The increase of 0.29 average grade is attributed to a recent analysis of the Bureau's actual FY 1980 on-board personnel which resulted in a redistribution of the detail position structure. The average grade in FY 1980 reflects the Bureau's employment experience during the freeze imposed by the Carter Administration. The new grade distribution within the position structure reveals a more static turnover rate among higher level employees than those of the lower level. This disproportionate turnover pattern; the Bureau's inability to refill vacancies at the same rate they occurred (predominately lower grades); and promotions taking place primarily in the higher levels because of the tendency for these employees to remain, have together contributed to the increase in average grade.

In an effort to control grade creeps, each year the Bureau determines whether grade reduction targets are needed in occupational series identified as having the greatest rate of increase in average grade, cost impact, or long-range potential savings. This information is reported annually to OMB and is required of all agencies included in the OPM reporting system. Additionally, the Bureau's personnel management evaluation process provides for on-site visits to selected field locations on a quarterly basis to assess the relationship and structure of positions organizationally. Also, a cyclic audit program is carried out to review the qualifications and the appropriateness of position grades. The audit program in conjunction with the evaluation process provides a means for an annual position and grade examination for internal management control.

Questions Submitted by Congressman Regula

Consulting Services

Question: In your budget justifications you are requesting $125,000 for consulting services which you say you use to enhance your evaluative capabilities. During your testimony before this subcommittee on March 4, 1981, however, you said 70% of the work of the Health and Safety Research Program, for which you are requesting $60 million in FY 82, is contracted out. Is the $125,000 in addition to other consultant costs throughout your budget?

Answer: The work of the Health and Safety Research Program that is accomplished through contracts is performed under research contracts. The $125,000 shown in the budget for consulting services represents the total budget for the Bureau for this type of contract.

Question: What specifically will the $125,000 requested for consultants be used for, i.e., how many consultants will be hired, what services will be performed?

Answer: These funds will be programmed as the specific need arises. In past years, these funds have been used for the Publications Effectiveness Impact Survey; and for the initial phases of the ADP Requirements Survey. The services are provided under contract therefore, no consultants will be hired.

Dr. ENZER. We will answer them promptly.
Mr. YATES. Thank you, Mr. Enzer. I thank all your staff.

TUESDAY, MARCH 10, 1981.

HERITAGE CONSERVATION AND RECREATION SERVICE

WITNESSES

ROBERT A. RITSCH, ACTING DIRECTOR, HERITAGE CONSERVATION AND RECREATION SERVICE
ROWLAND T. BOWERS, ACTING ASSOCIATE DIRECTOR FOR RECREATION PROGRAMS
JERRY L. ROGERS, ACTING ASSOCIATE DIRECTOR FOR CULTURAL PROGRAMS
JOHN A. HAUPTMAN, ACTING ASSOCIATE DIRECTOR FOR NATURAL PROGRAMS
LAWRENCE L. DANFORTH, ASSOCIATE DIRECTOR FOR ADMINISTRATION
LARRY D. CARDWELL, CHIEF, DIVISION OF BUDGET AND FINANCE
WILLIAM D. BETTENBERG, DIRECTOR OF BUDGET, OFFICE OF THE SECRETARY
RUSSELL E. DICKENSON, DIRECTOR, NATIONAL PARK SERVICE
NANCY C. GARRETT, ASSOCIATE DIRECTOR—ADMINISTRATION, NATIONAL PARK SERVICE

OPENING REMARKS

Mr. YATES. The hearing will come to order.

This is a hearing on the appropriations, if any, for the Heritage Conservation and Recreation Service for fiscal year 1982. You are here in support or non-support of those appropriations. We have Mr. Robert A. Ritsch, Acting Director; Mr. Bowers, Acting Associate Director for Recreation Programs; Mr. Rogers, Acting Associate Director for Cultural Programs; Mr. Hauptman, Acting Associate Director for Natural Programs; Mr. Danforth, Associate Director for Administration, and Mr. Cardwell, Chief, Division of Budget and Finance.

We also have Mr. Bettenberg, Interior Budget Office, and Mr. Dickenson, Director of the National Park Service.

What is the story here? Do you have a program this year or do you not have a program this year?

Mr. RITSCH. Yes, sir.

Mr. YATES. First we shall place your biography in the record as well as that of Mr. Rogers and Mr. Bowers.

PREPARED STATEMENT

We shall also insert Mr. Ritsch's statement at this point.

[The statement follows:]

Date: March 9, 1981

STATEMENT OF ROBERT A. RITSCH, ACTING DIRECTOR, HERITAGE CONSERVATION AND RECREATION SERVICE, U.S. DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE SUBCOMMITTEE ON APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES, FISCAL YEAR 1982. March 10, 1981.

Thank you for the opportunity to discuss the Administration's recommendations for the FY 1981 and 1982 budgets for Heritage Conservation and Recreation Service programs that are being transferred by Secretarial Order to the National Park Service.

Both the budget and organizational changes I will be discussing for the next few minutes reflect the Administration's commitment to improve targeting of conservation expenditures. Merger of the Heritage Conservation and Recreation Service functions into the National Park Service is designed to achieve economies in the use of money, personnel, and equipment and to improve program services. Good stewardship of the natural, historic, and recreation treasures under National Park Service management will be closely linked to assistance in protection of such resources by others.

Director Dickenson of the National Park Service and I -- and our staffs -- are working closely together to assure the smoothest possible transfer of programs. I am also pleased to report that the Office of the Secretary is playing an active role in this work. This is greatly facilitating the merger, which we believe can be accomplished with little disruption in the provision of services, administration of the three grant programs and coordination of Federal land acquisition activities under the Land and Water Conservation Fund.

Budget Reductions

The President's recommendations for rescission of portions of enacted appropriations and amendments to reduce the proposed fiscal year 1982 Budget for the Land and Water Conservation Fund, Historic Preservation Fund, and Urban Park and Recreation Fund all are a part of the Administration's program of economic recovery. These proposals were transmitted to the Congress by the President on February 18. The President is recommending a moratorium on Federal purchases and the elimination of funding requests for the three grant programs. Postponing Federal acquisition will allow time for a thoughtful review of existing park and recreation legislation. The President intends to improve utilization of land exchanges as well as State and local efforts to achieve conservation goals.

In his February 18 Economic Recovery Plan, the President recommended rescission of $293 million in already appropriated funds and reductions of $578.2 million from the $627.9 million included in the FY 1982 budget submitted in January for the three major appropriations to the Heritage Conservation and Recreation Service. Further changes in the budget activities previously administered by the Heritage Conservation and Recreation Service will be recommended by the President and will be transmitted to the Congress in the next few days.

Land and Water Conservation Fund

The largest share of these reductions come from the Land and Water Conservation Fund. We are recommending rescission of $250 million in FY 1981 and a reduced total of $45 million in new budget authority for FY 1982. The $45 million amount represents a reduction of $475.4 from the $520.4 million included in the January budget for FY 1982.

Federal Land Acquisition

The Land and Water Conservation Fund rescission in FY 1981 includes $105 million from the Federal side of the Fund. This request reflects both the Administration's efforts to bring the budget under control and the Secretary's intent to refocus the Department's conservation program by providing $105 million additional dollars in FY 1982 for restoration and rehabilitation of existing National Park Service areas, provided the Congress enacts amendments to the Land and Water Conservation Fund to permit appropriations from it for these programs. The Administration is developing the necessary amendments to the Land and Water Conservation Fund to allow monies in the Fund to be appropriated for restoration and rehabilitation of the National Park System.

The FY 1982 recommendation of a $45 million appropriation from the Land and Water Conservation Fund is for current court awards, emergency land acquisition, support for land exchanges, and administration of the thousands of active grants previously funded. Coordination of Federal activities under this appropriation will be carried out in the Office of the Secretary.

Current Federal ownership and future land acquisition proposals will be reviewed to determine which lands are essential for protection by the Federal government and which lands could be protected by State, local and private initiatives. For those lands which must be protected, we will determine whether protection can be accomplished through means other than acquisition of full fee title. In addition, exchange authorities will be used to the fullest extent to assist in rounding out the Federal conservation estate.

Assistance to States

The State grants share of the proposed FY 1981 rescission is $145 million. The original FY 1982 request for the Land and Water Conservation Fund State assistance program was $185 million. Because of the need to reduce Federal spending, we are proposing that funding for FY 1982 for the State assistance program be eliminated. However, we are including in the $45 million request an amount for administrative expenses necessary to carry out monitoring and administration of more than 8,000 active grant projects involving more than $600 million in unexpended Federal obligations.

The LWCF State grants program has made enormous contribution to our Nation's recreation estate. Over the life of the program through December 31, 1980, a total of 27,444 grants amounting to $2.5 billion had been obligated of which about 8,200 grants were obligated to acquire 2.1 million acres for recreational

use and about 19,000 grants were obligated for development of facilities. It is time, however, to re-evaluate the program and the options at our disposal to further improve the delivery of recreation for the American people while keeping Federal expenditures at a minimum.

The proposed rescission will create a situation where the States will be left with widely varying percentages obligated of the funds available to them in FY 1981. Therefore, we are recommending appropriation language which would give the Secretary of the Interior discretion to allocate the small amount of remaining unobligated funds in a manner which will assure that the purposes of the Act are achieved.

Historic Preservation Fund

For the Historic Preservation Fund a rescission of $8 million is recommended. We are working to develop a procedure under which funding can be provided for the ten States for which Survey and Planning Grants had not yet been obligated in FY 1981. We believe that such grants can be provided out of remaining unobligated balances although not necessarily for the full amounts requested.

For FY 1982, the revised budget request of $4.7 million for the Historic Preservation Fund is for a grant to the National Trust for Historic Preservation. New funds are not being requested for grants to States and other eligible recipients in FY 1982. This represents a reduction of $27.8 million (including Administration) from the FY 1982 Budget submitted in January. Administration of prior year grant funds will be handled out the Operation of the National Park System account. This revised request is consistent with the Administration's commitment to assuring that responsibilities are properly placed at the State and local levels.

The $4.7 million recommended for FY 1982 for a grant to the Trust provides the same level of funding as is available in FY 1981. We are recommending this continued level because the National Trust is a strong leader in promoting private sector preservation. It maintains and operates several nationally significant properties open to the public which otherwise would have to be administered by the National Park Service. It has an established regional office network, a large individual and organizational membership and an extensive publications program. The Trust conducts a preservation program of national scope and is an integral part of the national historic preservation movement.

Urban Park and Recreation Fund

A total of $35 million is recommended for rescission from the Urban Park and Recovery Fund. This amount is equal to the 1981 appropriation of $20 million plus $15 million from the 1980 appropriation. No new appropriation is requested for this program in FY 1982 and this is a reduction of $75 million from the January version of the 1982 Budget. Administration of prior year grants will be funded under the Operation of the National Park System account. A total of $2 million is provided in FY 1982 under this account for administration of prior grants for Historic Preservation and Urban Park and Recreation Recovery.

We plan a number of actions to insure that Federal investments to date in urban parks and recreation recovery are not lost and that local efforts to improve systematic recreation planning and management continue. The most important of these actions will focus technical assistance on critical management and service problems identified by cities in their Recovery Action Programs. By such targeting of technical assistance, we can help cities meet their own commitments to recreation improvement, even in the absence of new Federal grants.

Salaries and Expenses

Most of the operating programs of the Heritage Conservation and Recreation Service are being transferred intact to the National Park Service. The Secretarial Order merging the Heritage Conservation and Recreation Service with the National Park Service provides for termination of four programs under the Salaries and Expenses account as follows:

- Community and Human Resources Development which has provided direction in improving the efficiency in operation and delivery of Heritage Conservation and Recreation Service programs where they interface with recreation programs of other agencies.

- Water Resources which has provided advice to other agencies on water resource plans and projects to insure they benefit from recreation and cultural preservation grant and technical assistance programs.

- Preservation Policy, Planning and Evaluation which has been used to establish priorities and maintain consistency in the cultural programs legislative, budgetary and program activities.

- Environmental and Compliance Review which has coordinated reviews of Federal and federally assisted projects under general environmental laws and reviews of transportation projects under the specific environmental provisions of transportation related laws.

These programs duplicate or can be merged with similar efforts in the National Park Service or elsewhere in the Department. The FY 1982 savings from this action is estimated to be $2.6 million. Further savings may result from merger of the Heritage Conservation Service and the Nationl Park Service. For example, we believe savings could be realized by reduced costs for maintenance of separate regional offices and executive direction of the programs.

The operating programs will be strengthened through the merger with the National Park Service. For example the National Wild and Scenic Rivers and National Scenic Trails programs in the past have been split between the National Park Service and the Heritage Conservation and Recreation Service.

With this merger, policy and implementation functions could be placed together; assistance to similar State programs will be simplified by having a single Federal contact point. Natural area inventory and identification programs will also be placed in a closer relationship with natural area management and interpretation efforts in the areas managed by the National Park Service. A new partnership will draw on the strengths of the National Park Service in land management and the strengths of the Heritage Conservation and Recreation Service in assistance to other levels of government.

The Park and Recreation Technical Service (PARTS) program focuses on operating problems that affect public and private park and recreation management. The program will continue to assist park and recreation practitioners to be more self-sufficient in order to cope with reduced public resources and to increase the effectiveness of park and recreation services and facilities. Rapidly rising costs and increasing resistance to further increases in taxes have led operating officials to rethink management approaches, to seek options to fee acquisition as well as other cost cutting strategies, to explore private enterprise options and to create partnerships with the private sector, and to consider O & M and energy costs when designing facilities. These are the issues that the PARTS program addresses. The importance of this program to the Nation's States and cities in meeting the challenge of continuing to provide park and recreation services in the absence of grants from the Urban Park and Recreation Fund and Land and Water Conservation Fund is more critical than ever. In addition, the expertise and extensive information sharing network developed in the Heritage Conservation and Recreation Service will now readily be available to National Park Service operating managers.

New Initiatives

In FY 1981, we plan to issue regulations, based on the 1980 Amendments to the National Historic Preservation Act of 1966, which would include implementation procedures which would allow owners to concur in or object to National Historic Landmark designations; establish an appeals process for designations and removals; and make determinations of eligibility on nominations where private owners object to designation. In addition, the fiscal 1982 Budget provides $345,000 to establish boundaries for National Historic Landmark districts that do not now have boundaries, as required by the 1980 Amendments. Further, the National Historic Landmarks program plans to develop systematic priorities for scheduling and conducting theme and special studies to identify nationally significant properties for possible landmark designation. We also will explore cooperative arrangements with other Federal agencies for the identification of National Historic Landmarks in categories of special interest to those agencies. Consistent with this emphasis on National Historic Landmarks in FY 1982, the National Architectural and Engineering Record will give priority to the recordation and documentation of National Historic Landmarks; and the Division of Technical Preservation Services will provide special technical advice on the care, maintenance, and preservation of Landmark properties.

Summary

This brief overview of budget and organizational changes does not report our program accomplishments. I believe the most important accomplishment of both the three grants programs and our other activities has been the development

of strengthened recreation, natural, and cultural programs in the States and localities. In many cases, these programs are the direct result of the momentum and interest stimulated by our activities. The proposed budget reductions will have an impact on the State and local programs. I believe, however, that many States and localities will mirror the Federal Government's efforts to review program priorities and to develop alternative means and funding techniques to meet their highest priority needs to protect natural and historical areas and to provide outdoor recreation opportunities for their citizenry.

I appreciate this opportunity to discuss these matters with you and I am available to answer any questions you may have.

JOHN A. HAUPTMAN
ACTING ASSOCIATE DIRECTOR FOR NATURAL PROGRAMS
HERITAGE CONSERVATION AND RECREATION SERVICE

John A. Hauptman of Gaithersburg, Maryland is presently Acting Associate Director for Natural Programs with the Heritage Conservation and Recreation Service (HCRS), formerly Bureau of Outdoor Recreation (BOR).

As the Associate Director for Natural Programs, Mr. Hauptman has the responsibility for the Division of Federal Lands Planning, Division of Natural Resource Systems Planning, Division of Natural Landmarks, and the Division of State Heritage Programs.

Prior to this appointment, Mr. Hauptman served as Chief, Division of Natural Resource Systems Planning, Assistant Regional Director for Resource Planning Services in the Northeast Region of the Bureau of Outdoor Recreation, and Chief, Division of State Planning and Technical assistance in the Bureau's Northeast Office. Before joining the Bureau Mr. Hauptman worked for Arnold Vollmer Associates in New York City, where he developed the first Comprehensive Outdoor Recreation Plans for the States of Indiana, Connecticut and New York.

Mr. Hauptman was born in New York City in 1935. He received a degree in Landscape Architecture in 1960 from Syracuse University

JERRY L. ROGERS
ACTING ASSOCIATE DIRECTOR FOR CULTURAL PROGRAMS
HERITAGE CONSERVATION AND RECREATION SERVICE

Jerry L. Rogers of Falls Church, Virginia, has served as Acting Associate Director for Cultural Programs from November 1979 to January 1980, and from December 1980 to the present time.

As Acting Associate Director for Cultural Programs, Mr. Rogers has responsibility for the National Register Division, the Technical Preservation Services Division, the National Architectural and Engineering Record Division, the State Plans and Grants Division, the Interagency Archeological Services Division, and the Preservation Policy Division.

Before the present assignment, Mr. Rogers was Deputy Associate Director for Cultural Programs. Prior to the creation of the Heritage Conservation and Recreation Service, Mr. Rogers was manager of the same programs as Chief, Office of Archeology and Historic Preservation, in the National Park Service. Earlier positions in the historic preservation programs included Chief, Division of Grants, and Chief of Registration, National Register of Historic Places.

Mr. Rogers was born December 22, 1938, in Vega, Texas. He received a Bachelor of Arts degree in 1962 and a Master of Arts degree in 1965, both in history and both from Texas Tech University.

ROWLAND T. BOWERS
ACTING ASSOCIATE DIRECTOR FOR RECREATION PROGRAMS
HERITAGE CONSERVATION AND RECREATION SERVICE

Rowland T. Bowers of Falls Church, Virginia, was designated Acting Associate Director for Recreation Programs on November 18, 1980.

As Acting Associate Director for Recreation Programs, Mr. Bowers has responsibility for the Division of Urban Programs, Division of State Programs, Division of Nationwide Recreation Planning and the Division of Park and Recreation Technical Services.

Prior to his present designation, he was Chief, Division of State Programs, Heritage Conservation and Recreation Service. Past positions include: Assistant Chief, Division of State Programs to February 1979; Chief, Grants Division, Northeast Regional Office, Heritage Conservation and Recreation Service, to September 1973 and he served in the U.S. Navy from March 1963 to February 1967.

Mr. Bowers was born August 19, 1941, in Philadelphia, Pennsylvania. He received a Bachelor of Science degree in Forestry from Penn State University in 1963 and a Masters of Forestry degree from Penn State University in 1969.

Mr. YATES. Inasmuch as Mr. Dickenson is in charge, presumably he has a statement which will be inserted into the record at this point.

Mr. DICKENSON. We do not have one.

Mr. YATES. Is your silence of any significance?

Mr. DICKENSON. No, sir. I am in full support of this program.

BUDGET REQUEST AND REORGANIZATION

Mr. YATES. Is Mr. Ritsch in full support?

Mr. RITSCH. Yes.

Mr. YATES. Is Mr. Reagan in full support?

Mr. RITSCH. In full support of the budget submissions.

Mr. YATES. The Carter estimate was $124,342,000; is that right?

Mr. RITSCH. Yes.

Mr. YATES. That is for your entire program. Mr. Reagan has reduced that somewhat from $124 million to $18 million; is that right?

Mr. RITSCH. Yes, sir.

Mr. YATES. What can you do with $18 million that you were going to do with $124 million?

Mr. RITSCH. Well, we think we can do a lot. I would like to summarize my statement.

Mr. YATES. All right. I will stop talking and listen, then.

Mr. RITSCH. All right, sir.

Both the budget and organizational changes I will be discussing are part of the administration's desire to improve the targeting of conservation expenditures. As you know from comments I heard across the table, there is a merger of HCRS authorities and functions into the National Park Service. This is the result of a secretarial order signed by Secretary Watt on February 19th and the merger has to be accomplished by May 31.

In the meantime Director Dickenson and myself and our staffs, and with good support from the Office of the Secretary, are working out details of this merger. We hope to incur very little, if any, disruption in the programs and authorities which are being transferred to the National Park Service.

You have indicated that you have the figures on the proposed budget changes. As you know, the initial recommendations were submitted on February 18. The President is recommending a rescission of $293 million in fiscal 1981 and reductions of $578.2 million in the fiscal year 1982 budget for the three Funds.

I would like to break those out into the program areas which are affected.

LAND AND WATER CONSERVATION FUND

The largest share will be in the Land and Water Conservation Fund where the 1981 rescissions amount to $250 million. In essence, that is $145 million on the State side of the program with the balance being on the Federal side.

Insofar as Federal acquisition is concerned, in 1981 we are talking $105 million of that $250 million. That will reappear, however, in the fiscal year 1982 requests of the administration as new budget authority from the Land and Water Conservation Fund for

restoration and improvement of the National Park System. That, of course, would require an amendment in the Land and Water Conservation Fund legislation.

Also we are requesting a $45 million item in the budget authority request for Land and Water Conservation Fund which will essentially be for three things on the Federal side, current court awards, emergency land acquisitions, and support of the proposed land exchanges program, which will be a highlight of the new administration's approach to rounding out the Federal estate, and for administration on the State side of approximately 8,000 grants which are still moving through the pipeline.

HISTORIC PRESERVATION FUND

In the Historic Preservation Fund a rescission is requested of $8 million in 1981. In fiscal 1982 the new budget authority request is $4.7 million for the National Trust for Historic Preservation. The Trust, as you know, received approximately this amount of funding in fiscal year 1981, so it is more or less a continuation of the same budgetary authority for that entity.

NATIONAL TRUST FOR HISTORIC PRESERVATION

Again, as you know, the Trust does maintain and operate various properties that otherwise might have to be operated by the Federal Government, and they have an extensive regional network.

Mr. YATES. Why does that follow?

Mr. RITSCH. Why does that follow?

Mr. YATES. Yes.

Mr. RITSCH. The Trust, in effect, has chosen to operate those units. If they had not, then I suspect, Mr. Chairman, we would have inherited them in the Federal Government.

Mr. YATES. Why does that follow? The Trust owns them outright. Why does it follow the Park Service would necessarily inherit them? How do you come to that conclusion?

Mr. DICKENSON. If the National Trust were not involved, then there would be pressures for some Federal agency to administer them, Mr. Chairman.

Mr. RITSCH. That is right. As you know, they have an extensive regional setup and an extensive publications program, and in effect they are taking a lot of pressure off the Federal Government through their operation in the historic and cultural fields.

URBAN PARK AND RECREATION FUND

In the Urban Park and Recreation Program, a total of $35 million is recommended for rescission. The new appropriation request for fiscal 1982 is zero, or a reduction of $75 million from the earlier January version of the budget you received.

Mr. YATES. Does that money go for operating expenses or capital?

Mr. RITSCH. These grant funds are primarily used by localities as capital funds for rehabilitation of existing facilities. However, some innovation grants are funding operation of new programs on a single-year demonstration basis. In accord with the UPARR Act, ongoing or routine operation and maintenance activities are not

eligible for grants and no activities of this type have been funded. The $75 million budget did contain a portion to be used for Federal administration of the program. With regard to that Fund and the Historic Preservation Fund from which we also drew our administrative expenses, there will be a $2 million line item in the operations budget of the National Park Service which is intended to support our staffing in both the Urban Park and Recreation Program and Historic Preservation Fund. Therefore, that $2 million line item should take up the slack, Mr. Chairman.

MERGER OR TERMINATION OF ACTIVITIES

Under Salaries and Expenses, which I understand is to be the major portion of our budget you will review this morning, the order to merge these activities into the National Park Service did terminate four of the activities which are line items in the earlier budget submission. These are activities associated with our community and human resources development, water resources program, preservation policy, planning and evaluation, and with environmental and compliance review.

These programs basically were duplicative or they can be merged with similar efforts already going in the National Park Service or elsewhere in the Department.

Mr. YATES. Is that true?

Mr. RITSCH. That is true, yes. For example, the environmental and compliance review function handles all of our audit coordination activities such as GAO reports or Inspector General reports. That function is duplicated by an office in the National Park Service insofar as control of that function. With regard to the remainder of their responsibility, which is review of Department of Transportation crossings of park areas, or what are called section 4-F statements, and NEPA, is handled in another office of the National Park Service as a control feature.

Actual work on those, Mr. Chairman, usually is done in the program areas at the field level, and we are transferring our major program authorities to the National Park Service, so we are transferring the actual on-the-ground working units, coordination mechanisms being already there.

Termination of these four activities would effect, by the way, a savings in fiscal 1982 of about $2.6 million. Insofar as staffing is concerned, it attaches only about 10 percent of our total service staffing.

We hope that the operating programs will be strengthened through the merger.

Mr. YATES. Can you handle all of those programs without additions in personnel?

Mr. RITSCH. Yes, sir; I think we can.

Mr. YATES. All right.

Mr. DICKS. There is not much to handle, is there?

Mr. RITSCH. Oh, yes. We are reviewing about 2,000 NEPA and 4(f) statements per year, for example.

Mr. YATES. With fewer personnel will you be able to expedite that review?

Mr. RITSCH. Our personnel are duplicative of a lot of the people already doing this function in the National Park Service. I am sure

Mr. Dickenson will want to look at some of the people we have in the field who are not transferable but who have developed some expertise in this area, and decide whether or not he would like to take them into vacant positions he might have so we will not lose their knowledge and ability.

Mr. YATES. How will you cover recreation and cultural aspects?

Mr. RITSCH. Recreation and cultural aspects?

Mr. YATES. Yes.

Mr. RITSCH. The staffs associated with those functions that will not be terminated will transfer under the Order to the National Park Service, so they will receive our entire staff remaining for those two functions. A $2 million line item in the budget will pay for UPARR and HPF grant administration staffing for 1982.

Mr. DICKENSON. We will bolster our ability to deal with the environmental and compliance review. We will do it through adjustment of personnel so there is no need for additional personnel.

Mr. YATES. What do you mean adjust? Will you explain that? Are you moving some over?

Mr. DICKENSON. A number of people are being identified who would be transferred to different activities, different functions, so some of those people can be placed within the environmental and compliance program to assist with that new workload.

Mr. DICKS. Can you tell us specifically how many people and from where?

Mr. DICKENSON. Not at this time. That is still in process.

Mr. DICKS. Can you submit that for the record?

Mr. DICKENSON. Certainly.

Mr. DICKS. So we understand.

Mr. DICKENSON. Yes.

[The information follows:]

NPS PERSONNEL FOR ENVIRONMENTAL AND COMPLIANCE REVIEW

Subsequent to the Congressional hearing, the Secretarial Order No. 3060, which provided for the consolidation of Heritage Conservation and Recreation Service functions into the National Park Service, was amended to provide for the transfer of environmental and compliance review functions to the National Park Service. This decision will strengthen the existing activity within the National Park Service since additional resources will be available.

An estimated total of seventeen workyears will be transferred to the National Park Service. The staff will be primarily involved with environmental activities relating to recreation and cultural programs.

Mr. DICKS. You are taking people out of the areas you are reducing and you will reassign them to do this other work?

Mr. DICKENSON. That is correct, sir. That task force is working on it now. As soon as it is available we will submit it for the record.

HISTORIC PRESERVATION

Mr. DICKS. One of the issues that came up in the hearing with the Secretary the other day is this. You do away with the support for a State program on Historic Preservation, yet the States have been responsible for going through the requests for the Tax Act credits which are absolutely essential to the Historic Preservation Program.

Mr. DICKENSON. Yes.

Mr. DICKS. Therefore, that work no longer is to be done by the States. It will have to be done, I assume, at the Federal level by the Park Service. Do I understand that correctly?

Mr. DICKENSON. At the present time that is simply impossible for us to undertake, Mr. Dicks.

Mr. DICKS. Why is that? That is not what the Secretary said. He said just the other day, "Oh, yes, we will take over and do it. We are not sure the States necessarily will do away with historic preservation at the State level but if they do then we will take care of that responsibility at the Park Service."

That is what I understood him to say.

Is that right, Mr. Bettenberg?

Mr. BETTENBERG. That is right.

Mr. DICKS. You told us that is impossible. I am sure the Secretary was not wrong. Therefore, why don't you restate it?

Mr. DICKENSON. I readily concur he was not.

Mr. DICKS. Will you revise and extend your remarks?

Mr. DICKENSON. Let me simply say that certainly we cannot perform those activities at the same level that the States did. If we are to absorb them, they will be performed at an entirely different level than formerly.

Mr. DICKS. Does that mean fewer applications for the tax treatment will be approved? Is that not the bottom line?

Mr. DICKENSON. That is the bottom line. It will just have to be handled in a different fashion than it was before.

Mr. DICKS. Obviously you had a different idea or a different plan in mind for this particular area when you first spoke today, Mr. Dickenson. Can you tell us what your understanding was?

Mr. DICKENSON. The States are performing a number of activities at the present time. With the kind of budgetary levels which are being forecast here, a number of States will have to make some very difficult decisions regarding professional staffs.

I don't know what the answer to that is right now. It needs a lot of thought and a lot of discussion.

I believe some States will make the decision to put more State funds into that kind of operation in order to keep it going. Other States undoubtedly will have to drop those activities if the kinds of budgetary forecasts hold. Therefore, I do not have a definitive answer for you.

However, it is very much on our minds and we are looking at it closely.

TAX CREDITS

Mr. DICKS. Do you process applications for tax treatment now?

Mr. ROGERS. We process those applications, Mr. Dicks, using to a great degree the advice and information prepared by the State preservation officers.

Mr. DICKS. Can you tell me how you would proceed if the State money was eliminated? Obviously there is a Federal law which says these people have a right to the tax treatment. How would we proceed?

Mr. ROGERS. Are you talking about the Tax Act programs?

Mr. DICKS. Yes.

Mr. ROGERS. I am not exactly sure what kind of a system we would have to devise.

Mr. DICKS. Don't you think it is important to start thinking about it in light of this budget?

Mr. ROGERS. We are.

Mr. YATES. Should it not have been thought about before the budget?

Mr. DICKS. Absolutely. Obviously this was prepared in a month. The implications of all of this clearly were not thought through, as we witness here this morning, in juxtaposition to the testimony of the Secretary of just the other day. Obviously the Department has not thought through the consequences of this.

We would like you to submit an answer for the record. I will ask the Chairman if that will be allowed.

Mr. YATES. That may be done.

[The information follows.]

IMPACT OF HPF ELIMINATION ON TAX REFORM ACT CERTIFICATION PROCESS

Question. How will you proceed if the States no longer have staff to help you with tax certification work? How will NPS handle this work?

Answer. Proposed elimination of the Historic Preservation Fund (HPF) will necessitate changes in the existing review process for certifications under the Tax Reform Act of 1976. Department of the Interior regulations require that State Historic Preservation Offices review applications and make recommendations to the Department. These regulations would have to be changed to require only Department of Interior review if State participation is not continued. We are seeking to identify options to carry out Interior's certification activities if States no longer receive HPF funds to assist in application processing.

Mr. DICKS. The Secretary gave us strong assurance just a few days ago he was committed to the tax credit side of this issue. He felt that was absolutely essential. What you are telling me here today is that you have not thought through how the Federal Government will handle this responsibility if the States no longer do the work for you.

Mr. RITSCH. That is right.

Mr. DICKENSON. There are a number of activities being transferred to the National Park Service for which there is not a final decision.

Mr. DICKS. I understand that. That is fine. However, there has been a hue and cry in the country from people concerned about historic preservation who say, "Wait a minute. You have not thought through what total elimination of the State program will mean to you back here at the National Park Service taking over this responsibility."

They seem to be right on that. I don't believe you have fully had a chance to think this through. However, it is important that you do because I believe the administration and the Congress is very much committed to making sure that that part of the program continues as a strong, flourishing and viable part of our historic preservation effort. That is really where the real guts of the program is, and that is where we gained all the benefits and revitalization of certain cities around the country.

If you are going to cut people from other programs and shift personnel, you better have a personnel shift for this responsibility as well.

Don't you agree?

Mr. DICKENSON. I appreciate that. I assure you of our dedication to the same principles you articulated.

ESTIMATES OF TAX EXPENDITURES

Mr. YATES. The Carter budget estimated tax expenditure in fiscal 1981 to be $50 million. You think that the tax expenditure in 1982 will be $100 million.

How do you explain the doubling of the tax law expenditures one year with no changes in the tax laws and the tax certification process?

Mr. ROGERS. The estimates of tax expenditures are in fact very diverse ranging all the way from the Joint Committee on Taxation's estimate when the Act was originally passed of $37 million through fiscal year 1981 to the figure you see before you. There has been a wide range of estimates of tax expenditures. The facts are somewhere within that range of estimates.

Mr. YATES. The range of estimates from $37 million to $100 million is substantial.

Mr. ROGERS. The final figures just really have not been put together.

Mr. YATES. What is the basis for the $100 million estimate?

Mr. ROGERS. I cannot answer the basis for it. I don't know.

Mr. YATES. Was that OMB or your department?

Mr. ROGERS. We didn't prepare that. I believe that came from Treasury.

Mr. YATES. I wonder how Treasury arrived at it and what the basis for it would be.

TAX CREDIT APPLICATION PROCEDURES

What procedure do you have to follow in order to take advantage of the tax provision?

Mr. ROGERS. A property owner seeking to take advantage of these provisions must first have a commercial property listed in the National Register of Historic Places and he must then have that property certified to the effect that it is a contributing structure if it is a district in the National Register.

Then the owner prepares his proposal for rehabilitating the property in accordance with the Secretary of the Interior's standards for rehabilitation, and works with the State historic preservation officer to be sure those standards are well applied and to be sure that the application is in order. Then he submits that application to the HCRS where our regional offices do the certification.

Mr. YATES. All right.

Mr. ROGERS. If the application is certified then the owner takes advantage of the various aspects available to him.

Mr. YATES. Will you still continue that same procedure?

Mr. ROGERS. I think we would have to be prepared at least to do without the help of State historic preservation officers in some States. We don't know how many States would be able to continue their programs, or we don't know how many States will be able to continue this part of the program.

Mr. DICKS. Have you written a letter to them yet and asked them?

Mr. ROGERS. We are in the process of asking them right now. As a matter of fact, the National Conference of State Historic Preser-

vation Officers is cooperating with us in gathering some of that information. It should be available within a few days.

INCOME LEVEL OF TAX CREDIT APPLICANTS

Mr. YATES. I note a Congressional Budget Office study of the historic preservation tax provisions indicates that tax incentives generally go to the high end of the taxpayers. What element of the preservation program will remain for the low to moderate income taxpayers?

Mr. ROGERS. States conduct a wide range of activities of their own which are intended to provide information to the full range of people who might need to do work on historic resources. Some States have their own grant programs. Some States have their own tax provisions, including property tax advantages. However, it is correct that the Federal tax incentives are basically applicable to people who have $50,000-plus annual income. That is the nature of the tax advantage.

NEW ORGANIZATION CHART AND NUMBERS OF PERSONNEL

Mr. Yates.

Do you have a table of organization prepared which would show how the National Park Service proposes to absorb and to operate with the shifts which the Reagan administration has made?

Mr. DICKENSON. That is under preparation and should be ready shortly. It is not available today.

Mr. YATES. It is not available?

Mr. DICKENSON. Not at the moment. It is being worked on.

Mr. YATES. Can you tell us the numbers of personnel to be used for each activity?

Mr. DICKENSON. We can give you some estimates at this time.

Mr. YATES. That won't help. You have not really been able to work it through yet, have you?

Mr. DICKENSON. Not all the way through. There just has not been sufficient time to date.

Mr. BETTENBERG. The Secretarial Order provided for a period of 45 days.

Mr. RITSCH. Actually it worked out to about 90 days. May 31st is the date set.

Mr. BETTENBERG. It will take that long to work through all the actions that need to be taken in terms of merging these organizations.

HISTORIC PRESERVATION FUND PROPOSED RESCISSION

Mr. YATES. Where will the Historic Preservation Fund rescissions take place, that is the $8 million mentioned here?

Mr. RITSCH. There was a total available for Historic Preservation Fund purposes. Eight million dollars is a reduction in that amount. According to analysis we did as we assessed our mid-year activity, there will be approximately $1.6 million remaining to be obligated after the rescission amount.

Mr. YATES. $1.6 million?

Mr. RITSCH. Yes, sir.

Mr. YATES. Is that enough?

Mr. RITSCH. Well, there are 10 States which have not yet entered into survey and planning grants. This is to support the staffs you have been discussing here. Their aggregate request is something in the realm of $2.3 or $2.4 million for those 10 States to meet their emergency needs. We have about $1.6 million remaining, so there will have to be some adjustment. However, I think we can handle it by working with the States.

Mr. YATES. Can the States handle it?

Mr. RITSCH. I am hopeful they can.

Mr. YATES. Do you know?

Mr. RITSCH. No.

Mr. YATES. Have you heard from them?

Mr. RITSCH. No, sir.

Mr. YATES. Had you finished your statement?

Mr. RITSCH. Yes.

EFFECT ON WEST VIRGINIA

Mr. YATES. We have heard from Congressman Rahall, from West Virginia, who wrote a letter, dated February 26th, to the committee in which he stated that:

> OMB has frozen all Historic Preservation Funds. Under a formula established in my home State of West Virginia, it would have received $398,000 if the freeze had not been imposed.
>
> Since it has been imposed, and since I am told the rescission order is forthcoming, the State will be required to provide payment for expenses previously incurred.

Is that the effect of the Order?

Mr. ROGERS. Mr. Chairman, that would be approximately correct. The amount of the survey and planning money to support the staff activity in West Virginia would be $284,000-plus and a few hundred, and the balance would be the money the State would expect to spend in development projects.

EFFECT ON OTHER STATES

Mr. YATES. How many times should the amount frozen for West Virginia be multiplied for the rest of the States?

Mr. ROGERS. All of the money had been basically earmarked for State activities of this type.

Mr. YATES. And then it was frozen?

Mr. ROGERS. And then it was frozen.

Mr. YATES. How much money was that?

Mr. ROGERS. The full $8 million.

Mr. YATES. Would the $8 million have covered everything?

Mr. ROGERS. It would have covered the requests which they had made under this year's appropriation.

Mr. YATES. It would have?

Mr. ROGERS. Yes, sir.

Mr. YATES. And a little left over? It just does not come out to $8 million. Would you have had too much money with the $8 million or not enough?

Do you know what the State figures are?

Mr. ROGERS. I don't have those figures in mind, Mr. Chairman. We do have the full State requests.

APPORTIONMENT TO STATES

Mr. RITSCH. And the apportionment certificate was issued to them to make money available.

Mr. YATES. What is the total of all the States? Do you know?

Mr. RITSCH. For fiscal 1981?

Mr. YATES. Yes.

Mr. DICKS. Is this a situation whereby if you do not request the money you don't get it and if you do request it you will get it? How will the $8 million be cut?

Mr. CARDWELL. It would be cut from the amount allocated to the States under the formula, which was about $25.3 million for State grants out of the $32.5 million appropriation for 1981.

Mr. YATES. Would that have covered it on the basis of the certificates you have?

Mr. RITSCH. I am sure that the States probably had an aggregate of what they felt was a larger need for money than was requested.

Mr. YATES. Let's find out. As I understand what Mr. Cardwell said, he said you have allocated $8 million for that purpose.

Mr. RITSCH. Yes.

Mr. YATES. That does not answer my question. How much did the States submit to you as being the amount of their costs for the purpose?

As in the case of West Virginia, it was $398,000.

Mr. RITSCH. That is right.

Mr. YATES. What was it with respect to the other 49 States?

Mr. BETTENBERG. We are going around in a circle.

Mr. YATES. I think so.

Mr. BETTENBERG. The way that amount was derived was through a formula allocation of the amount appropriated.

Mr. RITSCH. That is right.

Mr. BETTENBERG. The amount appropriated.

Mr. YATES. Does it all come out to $8 million?

Mr. BETTENBERG. So the grand total for appropriation comes out to $32.5 million.

Mr. DICKS. The rescission is $8 million, is that correct?

Mr. BETTENBERG. Yes.

IMPLEMENTATION OF PROPOSED RESCISSION

Mr. DICKS. Won't the rescission be implemented for those States which have not received their money? It will not be on the basis of a similar formula allocation.

Mr. BETTENBERG. That is right.

Mr. YATES. Then the States that have received their money are way ahead.

Mr. DICKS. Those who received the money early and spent it, okay. It is a similar situation to the charities who received and spent the money they were given. Is that the way it works?

Mr. BETTENBERG. Yes.

Mr. DICKS. Is that fair, Mr. Bettenberg?

Mr. BETTENBERG. It is not equitable in terms of allocation among the States, clearly.

Mr. DICKS. Can you tell us which States have not received money, those States that will lose funds because of the rescission?

Mr. BETTENBERG. We have that data available. What Mr. Rogers was talking about were those States which had not yet received their survey and planning funds.

Mr. YATES. Which State besides the State of Washington has not received the money?

Mr. DICKS. I believe the State of Washington has because we have an effective program.

Mr. BETTENBERG. Washington has not received its survey and planning funds.

What Mr. Rogers referred to was the survey and planning portion of the grants. The grants go for both survey and planning and for specific historic preservation projects, restoration types of projects.

There would be about $2.4 million of unfunded survey and planning grants, of which there is about $1.6 million would remain available to cover those, so on average I guess you would assume you might be thinking in terms of 75 cents on the dollar for those.

GRANT PROJECTS FUNDING

Mr. YATES. Some of the projects take more than one year, do they not? Are not some of the funds for 1981 supposed to be payment of a project which spills over from one year to the next?

Mr. ROGERS. Technically a project does not go over from one year to the next. The money itself must be divided into fiscal years. However, it is true the work on one specific building, for example, might be divided into several projects.

Mr. YATES. Would an example of that be finishing two rooms while the other rooms would be deferred until the next year?

Mr. ROGERS. Yes, sir.

Mr. YATES. Now in the case of buildings where you have had preservation of part of the building that was accommodated by let's say funds for fiscal year 1980, and which funds already have been expended. In 1981 you look to a three or four-year restoration, that will affect the neighborhood, will it not?

Mr. ROGERS. Certainly that would be correct. It is a cumulative process in many cases.

Mr. YATES. Then, in view of the freeze for 1981 and 1982, it would be interesting to see how much of the total amount of historic preservation funds is referred back to the States. Do you have that figure?

Mr. ROGERS. No.

Mr. YATES. Do you understand my question?

Mr. ROGERS. I am not sure I did.

Mr. DICKS. It is about 80 percent, is it not?

Mr. YATES. The Federal Government was to put up a certain amount of money. In this case it was $32.5 million.

Mr. RITSCH. That is right.

Mr. YATES. Of that, $8 million was rescinded. Is that right?

Mr. RITSCH. That is correct.

Mr. YATES. The amount for 1982 was totally abandoned.

Mr. RITSCH. For grants to States, yes, sir.

Mr. YATES. The projects that the States were undertaking covered not only expenses for fiscal 1981 and 1982 but really started in 1976, 1977, and were ongoing for five, six or seven years.

Therefore, if the freeze is placed in effect for 1982 it is probable that the Reagan administration intends as well to freeze it for 1983 and forward. Is that right?

Mr. ROGERS. That appears to be so.

Mr. YATES. In that case, then, the amount projected for completion of the projects goes entirely to the States if they want to complete them.

Mr. ROGERS. The responsibility for funding goes to them or to the private owners who may be actually doing the preservation work. Many such properties are owned by non-profit corporations—by a wide range of owners.

Mr. YATES. Are there any commitments by the Federal Government beyond a single fiscal year?

Mr. ROGERS. No, sir, not in this program.

Mr. RITSCH. We sometimes do in some of the other grant functions what are called phase projects, where we will realize it will take three, four or five years for that project to be completed. However, the money is all obligated at the front end and then it is up to the State to recoup expenditures against that obligated amount.

Mr. YATES. The money is obligated at the front end, and, as the money is obligated, the States rely on the fact that money is obligated and then undertake their projects.

Mr. RITSCH. That is correct.

Mr. YATES. But the freeze will stop them in their tracks if they have not gotten that money.

Mr. RITSCH. The freeze affects just ability to obligate new budget authority.

Mr. YATES. And on-going projects will receive their money?

Mr. RITSCH. That is right. Once we enter into a contract for a grant project, for instance, a three-year project for which they anticipate spending a third each year, we obligate for the entire amount. That immediately becomes a contract with the United States.

As they complete parts of it they can request payments. Those funds are available for payments.

Mr. YATES. Those are not affected?

Mr. RITSCH. That is right.

NEW ORGANIZATION AND RESPONSIBILITIES

Mr. YATES. When will you be able to tell the committee of your new table of organization? By what date?

Mr. DICKENSON. I would estimate, Mr. Chairman, by mid-April.

Mr. YATES. How will your new functions affect your new responsibilities? How will they affect your existing responsibilities for administering the Park Service?

Mr. DICKENSON. There should be no conflict or impact on existing authorities or responsibilities.

Mr. YATES. Will you be using existing personnel to handle the new functions?

Mr. DICKENSON. Some of the existing personnel will indeed absorb new duties and new activities.

Mr. YATES. How many of them?

Mr. DICKENSON. I don't know that precisely.

DEPARTMENTAL EMPLOYMENT LEVEL

Mr. DICKS. Will you reduce the overall level of employment in the Department?

Mr. BETTENBERG. We will reduce overall employment by about 3,200. These are tied to the budget cuts. The administration has kept personnel numbers floating somewhat frequently from the budget but in concert with it, yes.

Mr. YATES. What does that mean? Is there no relationship between the budget and personnel?

Mr. BETTENBERG. There is some relationship but we continually go through freezes, no matter who is in the White House.

Mr. YATES. You can go through freezes and thaws?

Mr. BETTENBERG. Freezes and thaws.

Mr. RITSCH. More of one than the other.

Mr. YATES. Are you in a thaw or freeze now?

Mr. BETTENBERG. Definitely in a freeze.

Mr. DICKS. In your judgment will the freeze lead to more contracting out by the Department?

Mr. BETTENBERG. Clearly not. Overall the gross reductions in the Department will total about $1.1 billion, so there will be a lot less contracting out than there used to be.

DEPARTMENTAL AUDIT RESOLUTION

Mr. DICKS. Inasmuch as we are talking about the Department as a whole, I have a question of Mr. Bettenberg which was the subject of a GAO report filed last week.

Mr. YATES. Why not?

Mr. DICKS. Just to get his general view.

Mr. YATES. Very well.

Mr. DICKS. Last week before Congressman Brooks' committee the GAO came in with a very extensive report talking about the question of audit resolution. These are basically situations where we audited a program, we being the Federal Government. We found somebody who owed us money and yet the report indicated rather dramatically that the various departments of government were not very effective in going back and collecting the money that was owed. They found there was a real management problem within the various departments.

I do not think the Department of the Interior was one of those which was involved in this. Perhaps they were, and if I am wrong correct me.

I would like to ask you, as chief budget officer of the Department, what the policies of the Interior Department are regarding audit resolution and collecting the money owed us, or following up on the fruits of those investigations by the GAO, or survey investigations conducted by this committee?

How is that handled by the Department?

Mr. BETTENBERG. The Inspector General's Office is responsible for working together with the bureaus on items that are picked up on audit. Frankly, most audits are not financial audits. They are more management audits. Frequently there is a wide difference of opinion as to whether the recommendations of the Inspector General ought to be followed with regard to policy matters.

Mr. DICKS. Are you familiar with the GAO report I am referring to?

Mr. BETTENBERG. I am not familiar with it.

Mr. DICKS. I will send you a copy of it. You ought to have one.

Basically the report shows how various agencies handled these audits in 1978. They discovered $4 billion was owed to the Federal Government.

In a follow-up study, two years later they analyzed the same agencies. The amount increased to $14 billion. In other words, management audits were conducted, and it was discovered that money was not being collected nor was anyone really following up on the audits and trying to resolve them. Advice from internal staff was not even secured, in some instances, in an effort to collect the amount that was due

Mr. RITSCH. Perhaps I can answer that.

Mr. DICKS. I would like to know what the Department of the Interior is doing about this.

LAND AND WATER CONSERVATION FUND AUDIT RESOLUTION

Mr. RITSCH. To audit the stateside of the Land and Water Conservation Fund, we furnish money to the Office of the Inspector General. They either handle it with existing staff or contract out for programmatic or financial audits on the States' Land and Water Funds. Those audit findings are then furnished to us by the Office of the Inspector General.

The actual grant program personnel handles the resolution of those audits. We are given a very short amount of time, usually——

Mr. BOWERS. 120 days.

Mr. RITSCH. It is handled by our field people in the regional offices working directly with the State liaison officers, for example, who conduct the grant program at the State level. We are required to recoup those kinds of costs, and we have those 120 days to prove it.

Fortunately we have a good track record in that fund. Audit resolution never has been a major problem nor have we suffered any real unkind remarks about our capability to handle it and getting the moneys recouped.

Roughly that is the process through which we go. It is a 120-day opportunity to resolve.

Mr. BETTENBERG. The Inspector General has a tracking system at the departmental level for those funds. He provides regular reports throughout the Department on what things remain outstanding.

HISTORIC PRESERVATION FUND AUDIT RESOLUTION

Mr. YATES. What is the extent of debts outstanding in connection with the Historic Preservation Fund?

Mr. ROGERS. $1.3 million to be collected and about $6 million within the resolution process.

Mr. YATES. Do you mean negotiation?

Mr. ROGERS. The audit has been prepared and we are working with the States.

Mr. YATES. Do you anticipate any difficulty in collecting?

Mr. ROGERS. We do not. We substantially improved our audit resolution process within the last few months.

Mr. DICKS. If you would indulge me on this, Mr. Chairman.

Mr. YATES. Very well.

DEPARTMENTAL AUDIT RESOLUTION

Mr. DICKS. I would like to have Mr. Bettenberg look at the GAO report which was done for the 34 agencies of government. It would be very useful for this committee to have him submit to us a description. It does not have to be a long description but a picture of what the Department is doing about audit resolution. It was really a staggering amount of money in other departments. I think it would be very helpful to this committee to know whether you are doing a good job. If so, we will pat you on the back. If not, we will help you attack that problem. It seems to me that this whole question of waste is a big one and we should be addressing it together.

Is that possible to do?

Mr. BETTENBERG. Surely. I would propose to have the Inspector General prepare a report on that matter.

Mr. DICKS. Doesn't the Inspector General have to have cooperation of the Department in order to be sure that the people managing these programs are committed to this? It cannot be just the Inspector General, can it?

Mr. RITSCH. That is what I was trying to explain. It is up to the people actually operating these grant programs at the grass roots level to interact with the State and recoup costs. I think we can show you a very good record on the whole.

Mr. DICKS. You need more than just the Inspector General. It seems to me that part of this is trying to get management within the Department committed. One of the things that the GAO report indicated is that many times management says it is not a big issue. They call that policy problems.

Is that a valid statement?

Mr. RITSCH. Every one of those is carefully reviewed. We stick closely to the letter of the law in accomplishing the resolution.

Mr. BETTENBERG. I think the Inspector General would be best prepared to submit the report. That office is the one which oversees the process and knows the kind of cooperation it is getting with each bureau.

Mr. DICKS. They are independent and can give us the best and frankest appraisal of how you are doing.

Mr. BETTENBERG. I suspect it is probably covered in at least the detail you want to see in the annual report of the Inspector General.

Mr. YATES. How many of your auditors are being eliminated under the reorganization?

Mr. DICKS. Do you have an Inspector General?

Mr. BETTENBERG. We have an Acting Inspector General, not a permanent one.

Mr. DICKS. Who is he?

Mr. BETTENBERG. Bob Beuley.

Mr. DICKS. Thank you, Mr. Chairman.

PROGRAMS TRANSFERRING TO NATIONAL PARK SERVICE

Mr. YATES. Mr. Dickenson, how many new programs has the Park Service inherited under the reorganization order?

Mr. DICKENSON. There are 13 activity programs and they are the Nationwide Recreation Planning and State Comprehensive Outdoor Recreation Planning, Park and Recreation Technical Services, Resources Area Designation, including Rivers and Trails Studies, Urban Park and Recreation Recovery Act, Federal Lands Coordination

Mr. YATES. Urban Park and Recreation Recovery Act?

Mr. DICKENSON. Yes.

Mr. YATES. What are you inferring there, that there are no funds for it?

Mr. DICKENSON. The activities and the authority associated with it are temporarily unfunded.

Mr. YATES. When will it be refunded?

Mr. DICKENSON. I don't know that.

Mr. YATES. All right.

Mr. DICKENSON. Natural Area Programs, National Register of Historic Places, National Historic Landmarks, Technical Preservation Services, National Architectural and Engineering Records, Interagency Archeological Services, Land and Water Conservation Fund and the Historic Preservation Fund.

Mr. YATES. How many additional personnel will be required by the Park Service to administer those new responsibilities?

Mr. DICKENSON. The January Budget provided 582 permanent positions for fiscal year 1981.

Mr. YATES. That is 582 for which programs?

Mr. RITSCH. That is 582 full-time, permanent positions associated with HCRS programs in the January version of the 1982 Budget in the 1981 column.

Mr. YATES. Does that involve the 13?

Mr. RITSCH. And some of the functions that are being abolished.

Mr. DICKENSON. That is everything.

Mr. YATES. Five hundred eighty-two personnel. Are the personnel all being transferred?

Mr. RITSCH. Just those associated with the programs that Mr. Dickenson mentioned. The National Park Service may elect to hire some of these people to fill vacancies, particularly in their field offices.

Mr. DICKENSON. In the four areas being discontinued there are 80 people involved, Mr. Chairman.

Mr. YATES. Which four are they?

Mr. DICKENSON. These are Coordination Community and Human Resource Development; Water Resources; Preservation Policy Planning and Evaluation; and Environmental and Compliance Review.

This is tentative. We are looking at the possibility that there might be perhaps another 100 positions which might bring it up to about 180 out of 582 that might be placed elsewhere.

Mr. YATES. What is that number of positions? I am told it is 45.

Mr. DICKENSON. The number that I have been given is about 80 positions.

Mr. RITSCH. About 80 not counting the National Park Service. We have to make decisions with the people associated with the

Federal side of the Land and Water Conservation Fund. The Federal side, according to the Executive Order, will be handled in the secretariat rather than the National Park Service.

Mr. YATES. According to the information we derived from Secretary Watt's press release of February 19, the Federal Interagency Coordination function has the equivalent of 16.5 full-time jobs and Water Resources 18 full-time jobs, which makes 34. The Preservation Policy Planning and Evaluation has four full-time jobs and the Environmental and Compliance Review has seven full-time jobs so you have 45 jobs.

Mr. DICKENSON. The figure 80 I gave you obviously includes——

MANAGEMENT OF THE FEDERAL LAND ACQUISITION PROGRAM

Mr. RITSCH. Positions associated with the Federal side of the program is a pretty large chunk, about 26 additional positions.

Mr. YATES. Where are those 26 positions?

Mr. RITSCH. Well, the Federal side is going to be administered outside of the National Park Service at the secretarial level.

Mr. YATES. By whom?

Mr. RITSCH. At the present time it will be transferred to the Assistant Secretary for Policy, Budget and Administration.

Mr. YATES. What is he going to do with it? He is not supposed to take care of that, is he?

What is your title?

Mr. ROGERS. Acting Associate Director for Cultural Programs.

Mr. YATES. Who is the Assistant Secretary?

Mr. BETTENBERG. We don't have one right now.

Mr. YATES. Who is going to carry on these functions if you don't have an Assistant Secretary?

Mr. BETTENBERG. We have had a lot of discussion.

Mr. YATES. Do you have an Acting Assistant Secretary?

Mr. BETTENBERG. No.

Mr. YATES. Do you have a Deputy Acting Assistant Secretary?

Mr. BETTENBERG. We have a full-time Deputy Assistant Secretary.

Mr. YATES. Will he carry on the function then?

Mr. BETTENBERG. Well, that is still under discussion within the Department. There is every likelihood that that responsibility will go to another Assistant Secretary rather than the Assistant Secretary for Policy, Budget and Administration.

Mr. YATES. That is today and that will not be the same tomorrow?

Mr. BETTENBERG. My statement is that there is every possibility and I would stand on that for however long.

Mr. YATES. Would you like to strike the word "every" from your statement that you will stand on "every" possibility? Would you prefer to use the word "probability?"

Mr. BETTENBERG. Very probable.

RETURN OF FUNCTIONS TO THE NATIONAL PARK SERVICE

Mr. YATES. Well, has the Park Service carried on and engaged in carrying on these functions before?

Mr. DICKENSON. Sure.

Mr. YATES. Have you done all this work before?

Mr. DICKENSON. Certainly.

Mr. YATES. Of the 13 agencies?

Mr. DICKENSON. Several years ago we had many of the same 13 functions but the Heritage Conservation and Recreation Service added new activities in the interim.

Mr. YATES. I see, and that is why it was taken out of the Park Service and now you are getting those back?

Mr. RITSCH. There are several that relate to a return of functions to the National Park Service. The technical assistance functions in large measure came from the National Park Service about a year or so ago; for example, the National Landmarks program came from the National Park Service program as did the Interagency Archeological Services.

PREVIOUS RESPONSIBILITIES OF ACTING DIRECTOR RITSCH

Mr. YATES. Mr. Ritsch, you are the Acting Director.

Mr. RITSCH. Yes, sir.

Mr. YATES. What was your function before that?

Mr. RITSCH. I was originally a division chief in charge of the State side Land and Water Conservation Fund and before that for the last year and a half I have been Acting Associate Director for Natural Programs.

Mr. YATES. What is a natural program?

Mr. RITSCH. Well, this included, for example, the administration of the Federal side of the Land and Water Conservation Fund, the surplus properties program, our work with the military establishments to make their lands available for the recreational use. It also included the Natural Landmarks Program and our work in response to provisions of the Wild and Scenic River Act and the National Trails System Act..

Mr. YATES. Natural land?

Mr. RITSCH. Yes, sir. Natural landmarks.

Mr. YATES. What about unnatural landmarks?

Mr. RITSCH. Well, hopefully we don't have any of those. I think they are all fairly natural. These are the ecological and geological unique areas.

Mr. YATES. Heritage conservation.

Mr. RITSCH. The Rivers and Trails Program and several others.

FEDERAL LAND ACQUISITION

Mr. REGULA. You mentioned you are asking for $45 million, is that correct?

Mr. RITSCH. That is correct.

Mr. REGULA. All of the money is to be expended for emergency land acquisition. Explain that.

Mr. RITSCH. That is one of the three functions. It will also support staffing both on the State side and the Federal side and to carry out the emergency land acquisition functions. Those are acquisitions particularly that the National Park Service was caught in midstride on. For example, there are court cases. They have excessive court awards or they have cases that are filed under the declaration of taking that we have to follow through. There are

also cases where we have The Nature Conservancy or some other entity of that type that has been holding land anticipating us picking it up and of course they are incurring interest costs in the money they have tied up for our benefit. Those are the types of emergencies.

Mr. REGULA. Do they submit a list of those that fall within that emergency land acquisition class?

Mr. YATES. Can you do it?

Mr. RITSCH. I suppose we could get back with the acquisition officers of the National Park Service and try to determine what their actual listing of those types of emergencies may be at this point.

Mr. YATES. Fine. Put it in the record.

Mr. RITSCH. We will provide that for the record.

[The information follows:]

EMERGENCY FEDERAL LAND ACQUISITIONS

The attached listing shows pending National Park Service condemnations and Declarations of Taking which are in process for court judgement over the next few years for the four federal agencies which participate in the Fund. These actions, as well as hardship cases as they become known, will be reviewed individually to determine which ones the Department will proceed to acquire. A listing of hardship cases has not yet been developed.

Table III

Land and Water Conservation Fund - Federal Portion

Summary
FY 1981 Status of Current Complaints

Management Unit	Date Filed	Current Estimated Value
NPS	Various	$97,102,283
FS	-	-
FWS	-	-
BLM	-	-
Pinelands NR	-	-
Total		$97,102,283

Table III

MAR 27 1981

Land and Water Conservation Fund - Federal Portion
Bureau/Service National Park Service
FY 1981 Status of Current Complaints

Management Unit	Date Filed	Current Estimated Value 1/
Appalachian Trail	09/80 - 01/81	37,150.00
Big Cypress N Preserve	08/76 - 02/81	25,735,307.00
Bighorn Canyon NRA	07/78	432,042.00
Big Thicket N Preserve	11/76 - 09/80	8,700,000.00
Biscayne NP	02/78	2,523.00
Boston NHP	02/78	525,000.00
Buffalo N River	12/77 - 09/80	3,500,000.00
Canaveral NS	04/78	75,000.00
Cape Cod NS	05/72 - 12/79	6,401,925.00
Cape Lookout NS	01/78 - 07/78	4,300,000.00
Chickasaw NRA	07/80	1,000.00
Colonial NHS	06/80	25,450.00
Cumberland Island NS	03/77	2,500,000.00
Cuyahoga Valley NRA	03/78 - 09/80	4,563,079.00
Death Valley NM	02/79	40,000.00
Everglades NP	03/74 - 01/76	400,000.00
Fire Island NS	01/78 - 04/79	371,000.00
Fort Donelson NMP	01/79	30,000.00
Gateway NRA	08/79	11,963,000.00
Golden Gate NRA	12/76 - 03/77	438,200.00
Gulf Islands NS	09/79	400,000.00
Harper's Ferry NHP	07/80	80,000.00
Indiana Dunes NL	03/77 - 12/80	2,803,402.00
Jean Lafitte NHP & Preserve	12/80	415,000.00
Lake Mead NRA	07/70 - 07/78	384,000.00
Lower Saint Croix NSR	03/77 - 02/78	1,932,872.00
Minute Man NHP	03/77 - 01/78	325,000.00
Moores Creek NB	02/79	100,000.00
Piscataway Park	08/74 - 04/75	65,000.00
Saguaro NM	01/78	105,000.00
Saint Croix NSR	10/73 - 09/76	161,916.00
Scotts Bluff NM	07/79	32,519.00

Sleeping Bear Dunes NL	03/77 - 11/78	13,000,000.00
Valley Forge NHP	10/78	128,960.00
Voyageurs NP	09/77 - 01/80	7,127,938.00
TOTAL		97,102,283.00

1/ Historically, court awards have exceeded current estimated value by an average of 40%.

Table IV

Land and Water Conservation Fund - Federal Portion
Summary
FY 1981 States of Current Declarations of Taking

Management Unit	Date Filed	Current Estimated Value
NPS	various	$39,250,843
FS	various	5,078,244
FWS	various	2,721,226
BLM	various	596,900
Pinelands NR	--	--
Total		$47,647,213

Table IV

MAR 27 1981

Land and Water Conservation Fund - Federal Portion
Bureau/Service National Park Service
FY 1981 Status of Current Declarations of Taking

Management Unit	Date Filed	Amount Deposited 1/ (Just Compensation)
Appalachian Trail	02/80	183,000.00
Assateague Island NS	05/67 - 06/68	113,825.00
Bent's Old Fort NHS	10/80	74,500.00
Big Cypress N Preserve	11/78	970,000.00
Big Thicket N Preserve	04/68 - 08/80	498,250.00
Buffalo N River	07/78 - 11/80	194,985.00
Cape Cod NS	03/78 - 02/79	41,800.00
Cape Lookout NS	11/77	86,000.00
Chickasaw NRA	07/79	1,000.00
Congaree Swamp NM	03/77 - 06/80	31,337,400.00 2/
Cuyahoga Valley NRA	09/77 - 04/78	710,400.00
Delaware Water Gap NRA	09/70 - 10/78	1,081,167.69
Fire Island NS	07/79	20,000.00
Grand Canyon NP	12/77	1,050.00
Hot Springs NP	12/78 - 02/79	211,500.00
Indiana Dunes NL	11/76 - 07/80	1,439,035.00
Joshua Tree NM	06/78 - 07/79	56,917.50
Lassen Volcanic NP	08/80	992,000.00
Lowell NHP	03/80	244,000.00
Mammoth Cave NP	09/80	500.00
Minute Man NHP	08/79	2.00
North Cascades NP	08/79 - 01/80	381,110.57
Olympic NP	04/78	20,000.00
Point Reyes NS	09/79	76,000.00
Sleeping Bear Dunes NL	09/77 - 04/78	477,400.00
Yosemite NP	12/77 - 03/78	39,000.00
TOTAL		39,250,842.76

1/ Historically, court awards have exceeded amount deposited by an average of 40%.
2/ Anticipate deficiency award of $15,000,000 this fiscal year

Table IV

Land and Water Conservation Fund - Federal Portion
Bureau/Service Forest Service
FY 1981 States of Current Declarations of Taking

Case Name and Management Unit		Date Filed	Current Estimated Value	Potential Deficiency
M.F. Clearwater -	Paddison	7/22/77	89,000	40,000
" "	Wimer	1/20/78	18,000	7,000
" "	Hazelbaker	3/24/78	18,600	7,000
" "	Schinner	7/26/78	7,500	2,500
" "	Robinett	7/26/78	28,400	10,000
" "	Carr	8/4/78	6,600	2,000
" "	Carr	8/4/78	20,000	10,000
" "	Denham	8/4/78	4,500	1,000
" "	Little	1/26/79	6,375	2,000
" "	Little	1/26/79	2,250	1,000
" "	Little	1/26/79	1,350	2,000
" "	Bohn	1/26/79	1,500	1,500
" "	Laws	5/22/79	6,000	3,000
" "	Bryan	5/22/79	5,200	2,000
" "	Ruckman	5/22/79	12,350	4,000
" "	Fike	5/22/79	6,000	2,000
" "	Linn	5/22/79	10,000	-----
" "	Miller	11/20/79	1,000	500
" "	Barath	2/19/80	13,500	4,000
" "	Schwartz	5/12/80	57,000	25,000
" "	Mundhenk	11/4/80	5,000	2,000
" "	Mundhenk	11/4/80	8,000	3,000
" "	Engle	11/4/80	6,000	2,000
23 Cases			334,125	133,500
M.F. Salmon	Pistol Creek (38 Lots)	6/74	152,760	236,500
Cascade Head	Russell	5/17/77	203,000	79,780

Table IV

Land and Water Conservation Fund - Federal Portion
Bureau/Service Forest Service
FY 1981 States of Current Declarations of Taking

Case Name and Management Unit		Date Filed	Current Estimated Value	Potential Deficiency
Spruce-Knob Seneca Rocks NRA				
	Alt	3/4/80	2,716	2,000
	Booth	4/12/75	5,100	750
	Fetty	4/12/75	5,000	2,000
	Riggleman	8/27/75	50,000	14,600
			62,816	19,350
Sawtooth NRA				
	Swiss Villa	4/13/78	610,000	1,523,000
BWCAW				
	Perko	2/11/81	13,000	25,000
	Pete	5/14/80	247,000	661,094
	Smrekar	To be filed by 4/14/81	40,600	50,000
			300,600	736,094
Composites				
	Davidson Industries	8/10/79	715,000	437,500
	Pruet	2/26/79	11,985	8,500
	Graham	1/9/78	1,400	1,500
	Harris	2/21/78	8,836	3,500
	Williams	9/28/77	870	1,000
	Lampe	4/30/71	18,400	27,000
	Mitchell	6/29/73 (Potential interest payment after verdict)		21,000
				500,000
Eleven Point W&SR				
	Adams	12/20/77	7,000	10,000
	Conners	12/20/77	39,000	35,000
	Kitchen	12/20/77	22,680	25,000
	Roberts	12/20/77	41,000	35,000
	Shaw	8/4/78	141,000	170,000
	Staack	10/4/78	137,200	150,000
	Taylor	11/29/78	92,400	125,000
			480,280	550,000

Table IV

Land and Water Conservation Fund - Federal Portion
Bureau/Service Forest Service
FY 1981 States of Current Declarations of Taking

Case Name and Management Unit		Date Filed	Current Estimated Value
Cascade Head	Gibson	2/28/78	64,500
	Carlyle Corp.	4/7/80	200,000
			264,500
Rogue W&SR	Commerce Investment	12/7/79	57,500
	Kronenberg	2/16/81	185,000
	Miller	11/7/78	21,500
			264,000
Flathead W&SR	Kalbfleisch	To be filed	63,950
Alpine Lakes	Mt. Cashmere	---------	76,000
Appalachian Trail Rights-of-way		4/5/76-12/9/80	-------
BWCAW Additional Awards and Deficiencies		5/14/80-4/14/81 (D/T's signed 4/23/80)	
M.F. Clearwater W&SR Additional Awards and Deficiencies - 7/77-11/80			
Sawtooth NRA	Matthes	5/2/78	29,000
	Mayer	11/11/76	92,200
	Sarychoff	9/14/77	8,500
	Van Lamb	9/14/77	54,800
	Stewart, et al.	8/25/80	446,020
	Hansen	9/14/77	30,000
			660,520
Grand Total			

Table IV

Land and Water Conservation - Federal Portion
Bureau/Service Fish and Wildlife Service
FY 1981 States of Current Declarations of Taking

Management Unit	Date Filed	Current Estimated Value
Bear Valley	5-31-78	$ 275,000
Attwater Prairie Chicken	9-29-78	1,837,500
San Bernard	9-29-78	4,576
San Bernard	9-29-78	11,576
Santa Ana	9-29-78	9,750
Santa Ana	9-29-78	20,000
Indiana Bat (Blowing Wind Cave)	9-13-78	325,000
Great Swamp	3-7-78	237,226
		$2,721,226

Table IV

Land and Water Conservation Fund - Federal Portion
Bureau/Service Land Management
FY 1981 States of Current Declarations of Taking

Management Unit	Date Filed		Current Estimated Value
Rogue W&S River	August 14, 1976	Scott	20[illegible],000
	August 17, 1978	Young	4,800
	September 11, 1978	Henderson	125,000
	October 11, 1978	Hanton	40,000
	October 11, 1978	Chilton	2,500
	February 2, 1979	Brownell	1,250
	May 1, 1979	Jones	14,900
	May 1, 1979	Whitmore	2,000
	June 27, 1979	Johnson	9,000
	December 12, 1979	Denhouting	1,500
	December 17, 1979	Klose	73,000
	December 18, 1979	Arrington	1,500
	November 15, 1979	Martin	2,100
	January 14, 1980	Tice	5,250
	December 17, 1979	Retzloff	1,500
	December 11, 1979	Thome	1,500
	May 12, 1980	Burnette	12,500
	December 18, 1980	Reynolds	1,600
	January , 1981	Gallagher	9,000
	January , 1981	Padgett	2,500
	May 1, 1979	Wickham	20,000
Pacific Crest Trail	June 2, 1980		500
Total			$596,900

Mr. BETTENBERG. For the record let me say that a fair number of those are court awards for land acquisition on a declaration of taking or a condemnation so all that will be done there is the forecast. You are probably better off getting the property because of court costs.

Mr. REGULA. You still know which lands are being targeted as a result of the court proceedings. Why can't you give a property-by-property description?

Mr. BETTENBERG. A property-by-property description can be made available and the allocation of funds, what is being considered excess.

Mr. REGULA. I understand.

Also, I would like you to supply for the record a breakdown of the pending land acquisition which includes Wild and Scenic Rivers, on and so forth, authorized by the Congress which either a land acquisition program has not been put into effect or no money has been appropriated.

[The information follows:]

PENDING LAND ACQUISITIONS

The land acquisition program in the following areas has not yet resulted in the acquisition of any acreage:

National Park Service

Big Bend NP (boundary expansion); Biscayne NP (boundary expansion); Chaco Culture (boundary expansion); Channel Island NP (boundary expansion); Chick. & Chatt. NHP (boundary expansion); Georgia O'Keeffe NHS; Great Sand Dunes NM (boundary expansion); Hohokam Pima NM; James A. Garfield NHS; Kaloko Honokohau NHP; Kalaupapa NHP; Lyndon B. Johnson NHP (boundary expansion); Manassas NBP (boundary expansion); Martin Luther King, Jr., NHS; Mound City Group NM (boundary expansion); Rio Grande NSR; Rocky Mountain NP (boundary expansion); Salinas NM; San Antonio Missions NHP; Saratoga NHP (boundary expansion); Tuzigoot NM (boundary expansion); Wind Cave NP (boundary expansion); and Women's Rights NHP.

Forest Service

Arapaho NRA; N.F. American WSR; Skagit WSR; and Pere Marquette WSR.

Fish and Wildlife Service

Tensas NWR.

Bureau of Land Management

Yaquina Head ONA.

Mr. REGULA. What is the Department's plan for those additions which have been authorized but not yet completed?

Mr. RITSCH. Excuse me, sir. What was that?

Mr. REGULA. You have the Wild and Scenic designation authorized by law that has not yet been funded. What is your current position with respect to the further action on that particular project?

Mr. RITSCH. Well, right now we would be subject to determining whether or not this economic recovery is going to permit us to request future funding for these types of units. In the interim, we intend to utilize a very strict approach to using other than fee techniques, and to using land exchanges to see if we cannot ease the problem. Our efforts largely are being converted to those types of activities to offset Federal land acquisition and in large measure that is what will have to be done until we can see what the future looks like.

Mr. REGULA. What you are saying is that stewardship means to take care of what you have and not to acquire more at the moment.

Mr. RITSCH. I think that is very true.

Mr. REGULA. Even though you may have a particular designation of something to be included in the Wild and Scenic Rivers area?

Mr. RITSCH. That is true but hopefully we will be able to complete whatever we foresee as necessary after an examination of those areas targeted for future Federal ownership and we will use other techniques to do that rather than direct fee acquisition.

Mr. REGULA. Thank you, Mr. Chairman.

TRANSFER OF EMPLOYEES AND FUNCTIONS IN HCRS OFFICES

Mr. YATES.

Let's turn to page 1 of the justification which shows the organization of your HCRS service. It has the Director, and it has the Deputy. You are the Acting Director, Mr. Ritsch.

Mr. RITSCH. That is correct.

Mr. YATES. There is no Deputy?

Mr. RITSCH. No, sir.

OFFICE OF EQUAL EMPLOYMENT OPPORTUNITY

Mr. YATES. What has happened to the Office of Equal Employment Opportunity, will that continue?

Mr. RITSCH. Well, a lot of the functions associated with the offices, like the EEO program, Legislation and Congressional Affairs, Public Affairs, are duplicative of the functions that currently exist.

Mr. YATES. Do they exist in the Park Service?

Mr. RITSCH. In the Park Service, yes.

Mr. YATES. Is there an Office of Equal Opportunity in the Park Service?

Mr. RITSCH. Yes, sir, there is.

Mr. YATES. How many people do you now have in the Office of Equal Employment Opportunity in HCRS?

Mr. RITSCH. Three people.

Mr. YATES. What is going to happen to those three people? Will they be referred to the Park Service or will their jobs be cancelled?

Mr. RITSCH. Well, we anticipate that we will be able to locate quite a few of these people either within the National Park Service or elsewhere in the Department.

Mr. YATES. Let's take it step by step. What happens to the three people who are in the EEO office of HCRS?

Mr. DICKENSON. We don't know that yet precisely, Mr. Chairman.

Mr. YATES. Well, have they been notified that their services will no longer be required?

Mr. DICKENSON. I cannot answer that.

Mr. RITSCH. No. The Department has a lead on that and they are now examining all of the positions and the functions they are associated with. We have a schedule to develop those that definitely will transfer with the functional areas to the National Park Service and then those that are identified as not directly transferring.

Mr. YATES. Do you have the data for the National Park Service with you today?

Mr. DICKENSON. Yes, the Budget Officer.

Mr. YATES. Can the Budget Officer tell us how many people are projected for the Park Service for the next fiscal year for the Office of EEO?

Ms. GARRETT. Yes, sir. In our office there are 12 permanent positions in the EEO office right now.

Mr. YATES. How many are in the field?

Ms. GARRETT. We have approximately 32 or 33 in the field in our 10 regional offices. Those are full-time permanents.

Mr. YATES. So you have 45.

[COMMITTEE NOTE.—Staff was later informed that the actual number is 26.]

Ms. GARRETT. Mr. Chairman, we talked with the employees in the EEO office. Our officers had conversation with them and it is our plan at this point to transfer those three people with their function to our EEO office in the National Park Service in the Washington office.

Mr. YATES. So you will become 15 then?

Ms. GARRETT. That is correct.

Mr. YATES. All right. That is what I wanted to know.

Ms. GARRETT. We had one vacancy in that office which we decided not to fill but our commitment to those three individuals is that they would transfer with their function over to the Park Service.

OFFICE OF LEGISLATION AND CONGRESSIONAL AFFAIRS

Mr. YATES. Let's turn to Legislation and Congressional Affairs.

Ms. GARRETT. We have in our——

Mr. YATES. Wait a minute now. How many are there in HCRS now?

Mr. DANFORTH. Four.

Mr. YATES. What happens to those four? How many do you have in the Park Service? Would they be transferred over to the Park Service?

Ms. GARRETT. Right now in the Park Service, as you know, we are organized the same way that HCRS is in that we have Legislation and Congressional Affairs in one office and the staffing level for those two offices right now is 26. To supplement what Mr. Dickenson said, on that particular staff while we have had some discussion with them, Mr. Chairman, we do not know exactly how many of those positions will move into the National Park Service's similar office.

Mr. YATES. You don't really need any additional people for the Park Service Office on Legislation and Congressional Affairs, do you?

Ms. GARRETT. We would expect that is true.

Mr. YATES. What would happen to the four?

Ms. GARRETT. One of two things would happen. There is a moratorium in the Park Service on filling positions until the decision is made as to what to do with all the HCRS employees who would be adversely affected by this action and secondly commitment by the Secretary's office that throughout the Department these individuals would be given priority consideration for all vacancies which

presently exist throughout the entire Department of the Interior in Washington.

Mr. YATES. No matter what jobs are open? These are people who are in Legislation and Congressional Affairs. Suppose you need an expert in the Park Service and the job becomes open, would you transfer to that job?

Mr. DICKENSON. They would be properly placed in accord with their experience and qualifications, Mr. Chairman.

Mr. YATES. You have a ceiling of 26 in the Park Service; where do they find a position in Mr. Bettenberg's office?

Ms. GARRETT. Many people who work there have skills and talents that would qualify them for other generalist kinds of positions in both the Park Service and throughout the Department.

Mr. YATES. The Department is a generalist Department rather than a specialist Department, is that it?

Ms. GARRETT. That is right, yes, sir.

OFFICE OF PUBLIC AFFAIRS

Mr. YATES. Let's take a look at the Office of Public Affairs. How many does HCRS have?

Mr. DANFORTH. Eight.

Mr. YATES. Eight. That is a big office, isn't it?

How many does the Park Service have?

Ms. GARRETT. Mr. Chairman, right now we have 17 authorized positions in the Washington office but I might add that unlike the Park Service the Office of Public Affairs in HCRS includes two functions which we have in other areas of the Park Service. They do their professional publications and their responsibility for printing is included in that eight figure.

Mr. DANFORTH. No, that is an additional five.

Ms. GARRETT. I am sorry. I was going to say in that whole Public Affairs office they have more functions than we do of our 17 and they are all devoted to doing Public Affairs work. Our Public Affairs Chief has talked to those employees at HCRS and is planning to integrate those individuals into the Public Affairs Office of the Park Service.

Mr. YATES. Do you need all those people in the Office of Public Affairs?

Ms. GARRETT. We would expect that not all of those people would be needed but the decision as to the long-term effect simply has not been made.

Mr. YATES. How many of them that we talked about so far are Schedule C people?

Ms. GARRETT. None in the Park Service, sir.

Mr. YATES. How many in the HCRS?

Mr. RITSCH. None.

Mr. YATES. Are any of them Schedule A people?

Ms. GARRETT. No. I cannot imagine, Mr. Chairman, they would fit the definition.

Mr. RITSCH. I don't know what Schedule A is.

Ms. GARRETT. It is a noncompetitive classification we use for lawyers and so forth.

Mr. DICKS. What do the Public Affairs people do, what is their role in the Park Service?

Mr. RITSCH. Of course, our Public Affairs, in addition to all of our press releases that cover all of our grants activities and so forth, make the announcements on the major publications efforts we have—the availability of them. They assist us when we have such things as ceremonies and functions. In addition, as Miss Garrett has indicated, we also have our people associated with the actual publications in the Public Affairs Office.

Mr. DICKENSON. In the National Park Service the Public Affairs Office is essentially associated with the public; it is a public information office; it is not an agency promotional vehicle and so the kinds of staffing and the kinds of skills are geared toward responding to citizen requests for information about visits to parks or changes in hours of operation or other kinds of inquiries about National Park Service policies.

Mr. DICKS. Thank you, Mr. Chairman.

Mr. YATES. I am looking at your Park Service table of organization and I see an Office of Legislation and an Office of Public Affairs. Where is your printing done? I think Miss Garrett indicated that printing is not done by the Office of Public Affairs in the Park Service.

Ms. GARRETT. That is correct, sir. That is a function of the Management Consulting Division in the Office of Administration.

Mr. YATES. In your office you have an Associate Director of Administration and a Management Consulting Division. Where is your printing done in the National Park Service?

Ms. GARRETT. The Servicewide responsibility for printing policy, for sending documents to the Government Printing Office, those kinds of things, is housed in the Management Consulting Division in the Office of Administration. The editing and the actual writing of professional publications are located in the Office of Cooperative Activities which is an office reporting directly to the Director of the Park Service. There is a small unit of four people who have that responsibility Servicewide.

Mr. YATES. So we have got eight people floating in the HCRS Office of Public Affairs right now, right? Is that correct or are they going to be transferred definitely? As Mr. Bettenberg says, there is every possibility they will be transferred.

Mr. DICKENSON. They will be transferred but their placement side has not been definitely set yet.

Mr. YATES. That is 15 that are going to have to be transferred, is that right? Three in EEO, four in Legislation and Congressional Affairs and eight in the Office of Public Affairs.

Ms. GARRETT. That would be correct.

OFFICE OF ASSOCIATE DIRECTOR FOR CULTURAL PROGRAMS

Mr. YATES. Now we have the Associate Director for Cultural Programs. How many people do you have there?

Mr. BETTENBERG. In that immediate office this year, Mr. Chairman, there are five in the budget for 1982 and that goes down from three.

Mr. YATES. They will stay on?

Mr. BETTENBERG. They will be transferred to the National Park Service.

Mr. YATES. Two will be transferred to the National Park Service?

Mr. BETTENBERG. Yes. Three, sir.

Mr. YATES. You start out with five.

Mr. BETTENBERG. Start out with five and that will be reduced to three.

Mr. YATES. That leaves two to be transferred.

Mr. BETTENBERG. No, that leaves three to be transferred, sir. It will be reduced to the number of three.

Mr. YATES. Oh, I see. So you will have two for 1982.

Mr. RITSCH. If I understood you, we will have three. We currently have five but by 1983 we will have only three remaining and they will be subject to transfer to the National Park Service.

Mr. YATES. Because the program will have been absolutely moribund.

Mr. RITSCH. Yes.

Mr. YATES. All right. How many does the National Park Service have for that, if it has one?

Ms. GARRETT. We are organized a bit differently. We do have an Assistant Director for Cultural Activities and in that immediate office there are two individuals, the Assistant Director and his secretary, but beyond that we are organized very differently than HCRS.

Mr. YATES. Are you going to inherit three people then or two people?

Mr. BETTENBERG. Three.

Mr. YATES. Three.

ATTRITION RATE

Mr. REGULA. How do you factor in the attrition rate when you are looking at the transfer from HCRS?

Mr. YATES. Let's find out what the attrition rate is for HCRS. What is the attrition rate for 1981, for example, or 1980?

Mr. DANFORTH. We usually count on about five percent but that has been slowing down.

Ms. GARRETT. Ours has been running about seven percent.

Mr. DICKENSON. Ours has been running about seven percent, Mr. Chairman.

Mr. YATES. If you wanted to be conservative, you would say seven percent. Seven percent of the numbers will have attrited in how long a period; one year?

Mr. DICKENSON. Yes.

Mr. YATES. Is there such a verb as attrited?

Mr. DICKENSON. I surely hope not.

OFFICE OF ASSOCIATE DIRECTOR FOR RECREATION PROGRAMS

Mr. YATES. How many are in the office of Associate Director for Recreation and Natural Programs?

Mr. RITSCH. That office has three positions associated with it.

Mr. YATES. What happens to the three?

Mr. RITSCH. Well, again they are subject to transfer.

Mr. YATES. Where will they be transferred?

Mr. RITSCH. Right now they would be transferred to the National Park Service as part of the overall recreational function that is going to the National Park Service.

Mr. YATES. How many does the National Park Service have for that now?

Mr. RITSCH. I don't think for the most part the National Park Service has carried this mission. This is more of the recreation mission of a plan that would be directly associated with the administration of the National Park Service so it is entirely a new mission.

Mr. YATES. Hasn't the National Park Service had a national recreation mission for its parks?

Mr. DICKENSON. We operate a national recreation area, Mr. Chairman, but as far as the kind of policy development and relationships with the State that HCRS carried out that was unique to HCRS, if we had engaged in such, it would certainly have been duplicative of their efforts so we did not.

Mr. YATES. Will you be able to use the three?

Mr. DICKENSON. The organizational breakdown that we are looking at here now in no way is duplicated within the National Park Service and with the transfer of activities to us that means that most of the people associated with those programs will simply be transferred to the National Park Service.

Mr. YATES. What about transferring them to other activities or other agencies, is that opportunity available to them?

Mr. RITSCH. Well, it is generally available and particularly that is what we are looking to do with those people associated with the functions that will not be transferred. Due to the fact we have been under several freezes there have been vacancies in each bureau of the Department.

Mr. YATES. Does that mean when I ask you how many people are associated with a particular activity and you answer three that the three jobs may not be filled? That is what you are saying, because of the freezes from time to time, if I understood what you just said right now.

Mr. RITSCH. Mr. Rogers was talking about there were currently five and there will probably be three.

Mr. YATES. Two will have been frozen for that, I can understand that. When I asked you, for example, about the Office of Public Affairs and you said you had eight people, does that mean there are now eight people in that office?

Mr. RITSCH. I am not aware of a vacancy.

Mr. YATES. That is what I want to know. I want to know what your authorized personnel is and whether you have the full complement.

Mr. RITSCH. I think the full complement is there.

Mr. YATES. And that is true with respect to each of the boxes I have asked you about.

OFFICE OF THE ASSOCIATE DIRECTOR FOR ADMINISTRATION

The Associate Director for Administration, that is obviously one person.

Mr. DANFORTH. Two, myself and my secretary.

Mr. YATES. What are you going to do?

Mr. DANFORTH. I have obtained employment elsewhere.

Mr. YATES. In the Government?

Mr. DANFORTH. Yes, sir.

Mr. YATES. In the Park Service?
Mr. DANFORTH. No, sir.
Mr. YATES. When do you leave?
Mr. DANFORTH. The 23rd of this month.
Mr. YATES. Where do you go?
Mr. DANFORTH. The Office of Information Resource Management, which is a computer scientist position and I will be responsible for developing information systems for the Secretary.
Mr. YATES. Is that the Office of the Secretary?
Mr. DANFORTH. It is part of the Office of the Secretary, what we call PBA.
Mr. YATES. The Office of the Secretary.
Mr. DANFORTH. Yes.
Mr. YATES. What happens to your secretary?
Mr. DANFORTH. I am talking with Nancy Garrett to place her in the process.

DIVISION OF PRESERVATION POLICY

Mr. YATES. Now how many people are in the Division of Preservation Policy?
Mr. BETTENBERG. Four positions, sir.
Mr. YATES. That is eliminated then. What happens to those four people?
Mr. ROGERS. Those people are exceptionally well qualified people and they need to be placed.
Mr. YATES. Where will they be placed?
Mr. ROGERS. I don't know the answer to that.

RELOCATION OF HCRS EMPLOYEES GENERALLY

Ms. GARRETT. Mr. Chairman, we are having a meeting this week with the Department in which we will mutually agree on the specific names of individuals who will need special treatment assistance by both the Park Service and the Department and we are going through an exercise this week with the head of Personnel of HCRS and myself, to try to match 171's of those individuals with current vacancies in the Park Service. Those we are not able to place we will provide the Department with those names and ask their special assistance in trying to place them in current vacancies elsewhere in the Department and we are doing that on a name-by-name basis.

DIVISION OF PRESERVATION POLICY

Mr. YATES. So four of them are floating right now then, is that right? The four exceptionally qualified people, who are in Preservation Policy, have not yet been placed?
Mr. DICKENSON. They are the target area.
Mr. YATES. Do you have any operation in the Park Service where they might be placed that you know at the present?
Mr. DICKENSON. We do not have that knowledge at this time.

DIVISION OF NATIONAL REGISTER OF HISTORIC PLACES

Mr. YATES. Next is the Division of National Register of Historic Places.

Mr. RITSCH. The remainder of those units, Mr. Chairman, will go with the people associated with them to the National Park Service.

Mr. YATES. Under those names?

Mr. RITSCH. At least for the time being.

Mr. YATES. How many people are there in each of them?

Mr. ROGERS. That program has about 33 positions attached to it nationwide.

Mr. YATES. What about the next one?

Mr. ROGERS. Division of State Plans and Grants, 30; Division of Interagency Archeological Services, 23; Division of National Architectural and Engineering Record, 16.

OPERATING EXPENSES

Mr. YATES. We note in the new Reagan budget material that has been furnished us that under the Department of the Interior there is a line under Program Changes which says, Reduce recreation and cultural programs, minus $5,754,000. I understand that could be changed. Is that the correct number?

Mr. BETTENBERG. It is the correct number, but the distribution of the reduction is still being worked out.

Mr. YATES. How is that affected by what we are discussing here, or is it affected at all?

Mr. RITSCH. It will have an impact in 1982, where we are taking reductions, we hope the people associated with those functions are going to be absorbed elswhere. Hopefully in the natural program we will be combining functions as we merge with the National Park Service. For example, our rivers and trails functions that have been split over the years will be reamalgamated in the National Park Service and perhaps we can effect some real economies there both in terms of people and program impetus.

Mr. YATES. What is the total amount projected to be spent for the programs that are to be eliminated? Is it two million plus?

Mr. RITSCH. Yes, sir, $2.6 million.

Mr. YATES. The figure that I just referred to in the new Reagan budget indicates that you are eliminating $5,754,000 worth of programs. What happens to the balance of the three million plus?

Mr. RITSCH. The balance of three million plus?

Mr. YATES. There it is. Look at that yellow figure.

Mr. RITSCH. We are taking $5,754,000 out of what was originally requested in 1982 for our salaries and expenses and the total request would have been $16.8 million so we have reduced that by the $5.7 million leaving us whatever the difference is, $11 million plus, to operate the Salaries and Expenses portion of the budget which is for the most part being transferred to the National Park Service.

Mr. YATES. Where are the cuts?

Mr. RITSCH. Well, the cuts, like I say——

Mr. YATES. Identify the $2.6 million. The Reagan budget identifies $5.7 million.

Mr. RITSCH. The remainder will be taken in the recreation programs. We are taking a very slight reduction.

Mr. YATES. I know. What I am trying to do is find the specific programs where the reductions will be taken.

Mr. RITSCH. What I am getting ready to enunciate is our preliminary thinking. We split it between our recreation and natural programs in the main and in our recreation programs we are considering reducing our nationwide planning effort by a very small amount, I think about $90,000, and the remainder will be taken in our technical assistance program.

Mr. YATES. Is technical assistance a part of recreation or cultural programs?

Mr. RITSCH. Well, we have two technical assistance programs. We have one in our cultural program but we have a major one which we call Park and Recreation Technical Services which is in the Park and Recreation Technical Assistance Program.

Mr. YATES. Is that to be reduced by $90,000?

Mr. RITSCH. No, Nationwide Planning would be reduced by about $90,000 and the remainder would be in the Park and Recreation Technical Assistance Program.

Mr. YATES. For how much money?

Mr. RITSCH. Do you have the figure?

Mr. DANFORTH. The total reduction we are considering for recreation programs is about $3,010,000.

Mr. YATES. Do you have a breakdown of the $3 million?

Mr. DANFORTH. We are in the process of working it out right now. We have some preliminary numbers which have not been checked.

Mr. YATES. In other words, OMB gave you the figure of $5.7 million and you are trying to accommodate that?

Mr. RITSCH. We are trying to see where we can best accommodate it in each of the program areas. A little over half of it will have to be absorbed in our recreation programs and a little less in our natural programs. Those are the two major areas we have to reconsider how to allocate those funds.

BUDGET REVISION PROCESS

Mr. YATES. Tell me how your process with OMB works. Did they tell you how much money you had available or did you tell them how much you could reduce your program?

Mr. BETTENBERG. I think it would be fair to say that it was based on analysis provided by OMB budget documents and our office to Secretary Watt.

Mr. YATES. How did it operate? Did Mr. Stockman propose certain cuts in the Department of the Interior to the Cabinet and Mr. Watt then agreed on a number that was to be cut from the overall budget of the Interior?

Mr. BETTENBERG. Yes.

Mr. YATES. What was the figure that you agreed on?

Mr. BETTENBERG. We went through several rounds coming up to the number that you will see on the face sheet of the paper that we have.

Mr. YATES. Let's look at the face sheet.

Mr. BETTENBERG. That would be a reduction of $383 million in 1981 and $876 million net in 1982.

Mr. YATES. How did you arrive at $383 million? Is that what Mr. Watt arrived at with Mr. Stockman?

Mr. BETTENBERG. Yes.

Mr. YATES. How did Mr. Watt get $383 million?

Mr. BETTENBERG. There were numerous Cabinet meetings as well as members discussing back and forth before they all were locked into the figures.

Mr. YATES. I am not sure I understand. For what purpose were there numerous Cabinet meetings?

Mr. BETTENBERG. The Cabinet meetings on budget decisions.

Mr. YATES. Did Secretary Watt ask his Departments to reduce it by a certain amount and then take that figure to Mr. Stockman?

Mr. BETTENBERG. No.

Mr. YATES. He did not. Did Secretary Watt ask Mr. Stockman what the reduction would be?

Mr. BETTENBERG. Mr. Stockman identified amounts based on OMB analysis that he thought were appropriate. We went through those papers.

Mr. YATES. What was the amount of the reduction resulting from analysis that Mr. Stockman presented to Secretary Watt? Was that $383 million in the first instance?

Mr. BETTENBERG. It would be around that number.

Mr. YATES. Did Mr. Stockman give Secretary Watt a block grant?

Mr. BETTENBERG. Very much similar to that.

Mr. YATES. Did he give him a block grant of $383 million and say, "This is yours; now distribute it"?

Mr. BETTENBERG. There was the possibility of change and in fact numbers were modified at various points and the concepts set forth in the OMB papers were very substantially modified both by the Secretary and Mr. Stockman in discussion.

Mr. YATES. What do you mean by concepts?

Mr. BETTENBERG. The build up to a number in a certain way. They would say, "We can reduce Program A by X millions of dollars and Program B by Y millions of dollars." The Secretary was not locked into that and had tremendous responsibility both within the total and in addition the totals, over time, were modified somewhat.

Mr. YATES. The totals were modified. Do you mean you did not start with $383 million for 1981?

Mr. BETTENBERG. No, we did not.

Mr. YATES. But you were close to it?

Mr. BETTENBERG. We were close to it.

Mr. YATES. We can take $383 million as being in the nature of a block grant. Did OMB tell you can vary that in any way you want but they have certain suggestions to make, and Secretary Watt could take it or not as he wished?

Mr. BETTENBERG. I am positive that some of the larger decisions were even made or discussed and ratified in Cabinet meetings.

Mr. YATES. What do you mean by a larger decision?

LAND AND WATER CONSERVATION FUND BUDGET REVISION

Mr. BETTENBERG. A decision on the Land and Water Conservation Fund, for instance.

Mr. YATES. Do you know whether the Secretary wanted more or less money for it? What is the nature of the argument that took place?

Mr. BETTENBERG. I was not present.

Mr. YATES. Would that be speculation on your part?

Mr. BETTENBERG. Yes.

Mr. YATES. When did you enter the picture?

Mr. BETTENBERG. Well, I have been involved in the process.

Mr. YATES. Were you involved from the beginning?

Mr. BETTENBERG. From the beginning.

Mr. YATES. Tell me how you got into the picture. You are in the picture because you are the key man in the Department of the Interior as far as figures are concerned.

Mr. BETTENBERG. Yes.

Mr. YATES. Did Secretary Watt call you in and tell you that Mr. Stockman said you could have so much money?

Mr. BETTENBERG. Well, we were involved with the Secretary on the budget well before that took place.

Mr. YATES. As to how much you would get along with?

Mr. BETTENBERG. We had prepared papers in our office for briefing the Secretary giving him ranges of numbers on many programs to think about. As one example of that, we indicated that the new administration would have a range for the Land and Water Conservation Fund of between approximately zero and perhaps $900 million. We had had extensive discussions with the Secretary on the budget of the various programs, and had supplied him with numerous budgetary papers describing potentials for increases and decreases before he entered that process.

Mr. YATES. What good would that do if Mr. Stockman told him the figure that he needed?

Mr. BETTENBERG. Well, again that would be speculation on my part as to what transpired in Cabinet meetings between Mr. Stockman and the Secretary.

Mr. YATES. That would be very interesting but that is not my province, my province is the Department of the Interior. Mr. Stockman and Secretary Watt had their discussions and Secretary Watt came back with an agreement with the Director of OMB for $383 million. Is that correct?

Mr. BETTENBERG. Roughly.

Mr. YATES. Then what was the next process? How did you then decide to apportion the $383 million?

Mr. BETTENBERG. The OMB had laid out how it arrived at these numbers in terms of a great many programs, specific information. The Secretary went through a process of reviewing with a number of us in the Department the manner in which OMB had arrived at the allocation, those things that troubled him specifically; those things that he thought were more appropriate for reduction; those things that he wanted increases for—for instance, $105 million for the National Park Service restoration effort.

Mr. YATES. Did the Secretary then tell you his priorities for the $383 million?

Mr. BETTENBERG. Yes.

Mr. YATES. I see. Among those was the $105 million. Were there other priorities other than the $105 million?

OTHER DEPARTMENTAL BUDGET REVISIONS

Mr. BETTENBERG. In terms of programmatic increases that are reflected in the number that is before you, there is about $6 million provided for specific energy leasing programs between the Bureau of Land Management and the Geological Survey. There are, however, decreases in a number of cases and so the net amount of money in those programs will be reduced somewhat.

Following those discussions, the Secretary met with the bureau head or acting bureau head of the respective bureaus to ask them their views on the budget itemization for their respective programs, those things that the bureau heads would like to protect that were itemized by the Office of Management and Budget, substitution possibilties as well as potential further reductions. There were meetings subsequent to that time. In some cases as we were adjusting numbers, the Secretary dealt directly with the Office of Management and Budget and frequently with the bureau head.

Mr. YATES. Who reduced HCRS, was it you or the Secretary?

Mr. BETTENBERG. That would be the Secretary.

Mr. YATES. Go ahead.

Mr. BETTENBERG. The week before last there was a lot of news that there was a further step taken in that there was——

Mr. YATES. Mr. Stockman found the need to increase the amount of the reduction by an additional three to four billion dollars. Was that reflected anywhere in the Interior budget?

Mr. BETTENBERG. Yes.

Mr. YATES. To what extent was the Interior budget affected?

Mr. BETTENBERG. Overall about $50 million.

Mr. YATES. For this last budget or just for a total number?

Mr. BETTENBERG. For the last round.

Mr. YATES. For last week's round you lost another $50 million?

Mr. BETTENBERG. Yes.

Mr. YATES. Where did you lose it?

Mr. BETTENBERG. We lost it in a variety of programs.

Mr. YATES. Your block grant was unblocked then?

Mr. BETTENBERG. It was decreased. The items that made up that additional reduction that had to be taken were at the option of the Secretary.

CONTACT WITH OMB

Mr. YATES. Let us turn now to OMB for a minute. Have you dealt with OMB over the years?

Mr. BETTENBERG. Yes.

Mr. YATES. Did you find yourself dealing with the same people in OMB this year that you dealt with in previous years?

Mr. BETTENBERG. Yes, very much so, but I don't deal on a political level.

Mr. YATES. I am not talking politics now, I am talking about the program content.

Mr. BETTENBERG. Yes.

Mr. YATES. Did you deal with the same people in OMB who know about the operations of the Department of the Interior or did you deal with new people?

Mr. BETTENBERG. I dealt with the same branches and divisions at the Office of Management and Budget.

Mr. YATES. Are they the same people you have been dealing with for a number of years?

Mr. BETTENBERG. Yes.

Mr. YATES. Did they have orders to reduce your budget to a certain amount?

Mr. BETTENBERG. I presume so.

Mr. YATES. You presume so. Okay.

Did any of your Department heads say they could not live within the budget that you were giving them?

Mr. BETTENBERG. I have not heard that said.

Mr. YATES. Well, it is twelve o'clock and Mr. Regula has to hurry home. We will return at one thirty when we will pursue this a little further.

AFTERNOON SESSION

TRANSFER OF PERSONNEL

Mr. YATES. Mr. Ritsch, would you please provide for the record what is intended to be done with the agency personnel that appear on page one of your justification and how they will fit in the Park Service?

Mr. RITSCH. Yes, sir.

Mr. YATES. Provide numbers and where they will go.

Mr. RITSCH. I think by the middle of April we will by and large make those determinations.

Mr. DANFORTH. For clarification, you are looking for actual people and not positions, is that right?

Mr. YATES. Let's have both.

[The information follows:]

IMPACT OF REORGANIZATION ON HCRS PERSONNEL

The specifics of how each NCRS employee will be affected by the merger with the National Park Service will not be known for certain until final proposals are presented to the Secretary for his decision. When decisions are made the Subcommittee will be provided with the information requested.

ADVANTAGES OF THE NEW STRUCTURE

Mr. YATES. What are the advantages of the new structure?

Mr. RITSCH. Well, one, I think, is it will create a single Federal focal point for a number of programs that appear to have been split—rivers activities between the National Park Service and HCRS heretofore, and certainly some of the natural landmarks. Technical assistance for States in the inventory business has been split somewhat and that will be reunited and in some of the cultural aspects we found the same kinds of things. So not only will it reunite some programs but also we hope it effects some economies in this move over the long haul.

Mr. YATES. Do you foresee any economy? You have less funds for it so you have to have economy, don't you?

Mr. RITSCH. Actually, yes. There probably will be economies where the function is being carried out in both agencies and not all of the personnel will be needed and we can find other offices in the Department for those people.

Mr. YATES. How does that effect economy if they get paid the same or more?

Mr. RITSCH. Because it vacates a position that formerly we had to fill with a human being who drew a salary. The vacancies exist in other agencies and we will fill that vacancy with an HCRS person whereas if HCRS remained we would have had to have filled two vacancies.

Mr. YATES. Not necessarily. You would not have had to have the second.

Mr. RITSCH. I am saying, for example, if we had someone doing compliance review in HCRS who is not transferred to the National Park Service and BLM has the position, we will not have to fill the HCRS position as a result.

NATIONWIDE OUTDOOR RECREATION PLANNING

Mr. YATES. Why is there no funding for the Nationwide Outdoor Recreation Plan survey?

Mr. RITSCH. Why no funding for that survey, sir?

Mr. YATES. Yes.

Mr. RITSCH. Well, at the current time we have staffing that is associated with gathering that information and quite frankly we think there are other ways of gathering the data.

Mr. YATES. How will you gather data that is different from the way you are doing it now?

Mr. RITSCH. Rowland, would you care to address that.

Mr. BOWERS. It would be a limited survey probably a supplement to the Bureau of Census, Nationwide Crime Survey, National Travel Survey, or Quarterly Housing Survey. We have not determined exactly where the funds will come from but we could assess other programs within the Department that would utilize that information.

Mr. YATES. You say there won't be a Nationwide Outdoor Recreation Plan survey. What you are going to do is pull in information from existing surveys.

Mr. BOWERS. We will utilize existing data but we would also have a Nationwide Survey that would utilize the Bureau of Census information gathering systems.

Mr. YATES. Are there other alternatives to that method?

Mr. BOWERS. Well, there would be that method plus utilizing available information. We are in fact studying the process up right now called the Outdoor Recreation Trends Information System where we would gather information from current surveys and put it on a computer base and have that available—have a continuous source of data. That is at least planned at the present.

Mr. YATES. How do you propose to maximize public involvement in the Nationwide Planning process for the outdoor recreation?

Mr. BOWERS. Well, of course, it would be done through the utilization of a survey. Also we need public input in order to identify issues for our Action Program which is an outgrowth of the Assessment. The Assessment identifies a number of issues that are impor-

tant in terms of providing recreation resources nationwide. As part of the continuing planning process there is an Action Program which will probably be a biennial program. We have not really settled on the future of the Action Program in terms of the Nationwide Plan but in developing that Action Program we allow for distribution through the Federal Register, mailouts to various interest groups. We try to obtain widespread review of the issues and what action should be taken to address those issues. There is an extensive amount of public involvement in that respect.

COORDINATION OF RECREATION PROGRAMS WITH OTHER GOVERNMENT PROGRAMS

Mr. YATES. The Community and Human Resource Development program is going to be eliminated as well as number of other programs. How are you going to coordinate recreation programs with other governmental programs?

Mr. RITSCH. Well, through this we have, of course, a unit that creates agreements with other Federal agencies to try to work recreation into their programmatic operations and that is largely what this division has done. Of course, it involves the responsibility of the individual program units; for example, Land and Water Conservation Fund state grant planning. If we want to improve coordination of the planning in a specific area, and we already have an outstanding Memorandum of Understanding, that will be passed on to the people who work in the statewide planning function and they would carry it out in the future. They are being transferred to the National Park Service.

NATIONAL ENDOWMENT FOR THE ARTS

Mr. YATES. Why is there a Memorandum of Understanding between you and the National Endowment for the Arts? What do you give the art program?

Mr. RITSCH. I think this is an effort to utilize recreation that has been placed on the ground through various programs of ours, in particular our grants programs, to bring the programs of the Nationwide Endowment for the Arts into some focus with recreation. Is that correct, Rowland?

Mr. BOWERS. And also to emphasize the point that in developing and planning for outdoor recreation as well as indoor recreation opportunities, that the arts are an integral part of that planning.

Mr. YATES. In what way?

Mr. BOWERS. If you have a recreation program in a community you may want to necessarily provide for those facilities to be used by a theater group or some other type of cultural activity that can be integrated into the physical plant that is used for recreation whether it is an existing facility or one that is being developed to incorporate those concerns.

Mr. YATES. How frequently did you do this last year?

Mr. BOWERS. I do not have any details on the frequency, sir.

Mr. YATES. Do you know how many times you have consulted with the National Endowment for the Arts?

Mr. BOWERS. I don't have the exact number on that, no.

Mr. RITSCH. We had coordination meetings with them, of course, in working up a Memorandum of Understanding.

Mr. YATES. On the basis of the testimony I would guess that you could save some money here. Is that what you are going to do?

Mr. RITSCH. Yes, sir. All of those agreements that have been initiated through this particular centralization in HCRS will be reexamined and as we join the National Park Service we will see which one of those MOU's have to be in effect to enhance the program and they will be passed on to the action units that actually handle those programs.

ANTICRIME AND URBAN PROGRAMS

Mr. YATES. How do you get into an anticrime program with HUD now?

Mr. BOWERS. That was primarily focused on HUD's attempt to reduce crime at housing projects.

Mr. YATES. I would think that would be good but I don't know how you get into the program.

Mr. BOWERS. Well, primarily through the UPARR programs and the innovation grants provided under it to improve recreation activities within housing projects. There are about 12 such projects.

Mr. YATES. Is that going to be eliminated?

Mr. BOWERS. Well, one thing that will be considered would be to put that responsibility for that MOU with our Urban Program Division to be carried out with existing funds.

Mr. YATES. Will the Parks Service have an Urban Program Division?

Mr. DICKENSON. That has not been determined yet.

Mr. YATES. Somehow I cannot picture the parks with an urban program. It seems you are big outdoor men rather than indoor men or intercity men.

Mr. DICKENSON. The only real consideration is in terms of the existing authority which exists for the Urban Park and Recreation Recovery Program now existing in HCRS but beyond that we have no plans.

Mr. YATES. Unless we can recreate the Urban Forest Program, we could not put you in the cities again.

Mr. DICKENSON. That would be true, sir, except I think we have our hands full now with our other activities.

Mr. YATES. Do you mean before or after you take over HCRS?

Mr. DICKENSON. Both ways, yes, sir.

Mr. YATES. I see, both ways. More so after, I guess.

Mr. DICKENSON. Yes.

Mr. YATES. You are in Urban Forestry too? You are in the arts, you are in health promotion, you are in HUD, you are in aging, you are in urban forestry, you are with special projects.

You were on your way to becoming an empire, weren't you?

Mr. RITSCH. Very much so.

Mr. YATES. Now the National Park Service is on the way to becoming an empire. That is interesting.

Mr. DICKENSON. I assure you that we have no interest in expanding into an empire, Mr. Chairman.

RELATION TO PRIVATE SECTOR PROGRAMS

Mr. YATES. What about your relationship with the private sector program? In 1979 you said you were instrumental in assisting the J. C. Penney Company. Now that was quoted to us last year, too, was it not?

Mr. RITSCH. That is right.

Mr. YATES. That must be a very outstanding program because you quote it every year.

Mr. RITSCH. It was, and it is a good example how you can bring in private enterprise to offset what other impacts would either fall on State or local government.

Mr. YATES. Are you currently working with J. C. Penney?

Mr. RITSCH. Yes, there are other programs.

Mr. YATES. But not as well?

Mr. RITSCH. But not as well. That was sort of a pilot approach.

Mr. YATES. According to the February 19 press release, the Park Service and the Fish and Wildlife Service and Water and Power Resources Services have activities similar to that of the Water Resources Program of HCRS. Is there any expertise in these agencies to provide technical assistance to urban communities for waterfront renewal that incorporates both recreation and preservation activities?

Mr. RITSCH. Well, I hope so.

Mr. YATES. Well, I do, too.

Mr. RITSCH. EPA, for example. We have worked with them to try to encourage greater consideration of recreation opportunities and treatment sites. Trail opportunities on sewer lines is an example of what is being constructed and they seem to have pretty well taken that into account.

Mr. YATES. I have to go to another subcommittee meeting, I am sorry. I will be back later.

COASTAL ZONE MANAGEMENT

Mr. MURTHA [presiding]. Among the examples of workload for the Coastal Zone Management activity is the assistance offered by HCRS to Jacksonville, Florida which led to an application for a grant from the Land and Water Conservation Fund. Similarly, the justification relates the coordination of Federal funding sources for a San Francisco waterfront area.

Mr. RITSCH. Are you again addressing what the planning to function is to provide outdoor recreation and so forth?

Mr. MURTHA. Yes.

Mr. RITSCH. Of course, in our Land and Water Conservation Fund program we have a planning exercise which is statewide in scope and therefore in a coastal State takes in recreational opportunity in the coastal region as does the Coastal Zone Management Plan. We are trying and for years have been trying to coordinate with CZM to get those planning efforts into syncronization. For example, if we are doing a survey that involves a coastal area, there is no reason for them to repeat that same survey but rather to use the data that is being done at the State level and vice versa. That has been an ongoing activity for years.

Mr. MURTHA. What does this program add that cannot be done by the people who review the Land and Water Conservation Fund grants?

Mr. RITSCH. I am not sure I quite understand the question, Congressman Murtha.

Mr. MURTHA. My examples of the workload for the Coastal Zone action is the assistance offered by HCRS to Jacksonville, Florida which led to an application for the grant from the Land and Water Conservation Fund. Similarly, the justification relates the coordination of Federal funding sources for a San Francisco waterfront area.

Mr. BOWERS. Those were efforts conducted through our urban waterfront action groups. There was an interagency Memorandum of Understanding signed on November 7, 1979 between the Department of Commerce, the Department of Housing and Urban Development, the Department of the Interior, the Department of Transportation, the Environmental Protection Agency, the Federal Emergency Management agency, National Endowment of the Arts and other agencies to coordinate the redevelopment of waterfront areas. Our effort in this coordinated function was to enhance the recreation opportunities in urban waterfront areas where there is redevelopment taking place, and we provide the expertise for recreation, natural and cultural activities. Jacksonville was one of the first projects that was done in the Southeast and there was some Land and Water Conservation Fund money that went into that.

PARK AND RECREATION TECHNICAL SERVICES

Mr. MURTHA. We go now to Park and Recreation Technical Services. On page HCRS-35 of the justification you state that a focus of the Park and Recreation Technical Services will be to evaluate and refine the inventory of products to ensure they meet the most pressing needs of public officials.

When you use the word "products," what do you mean?

Mr. BOWERS. The products that we produce are technical assistance information. One of our primary functions in the Park and Recreation Technical Services Program is to develop materials that are appropriate and can be used by Park and Recreation managers in the areas of operations, managing parks in the most energy efficient manner, in the area of trying to get the private sector involved through donations, and other means of leveraging private capital. These are tools and products that we produce and I have a number of samples here, if you would be interested in seeing actual handbooks that can be made available through our information systems. We have a number of workshops we also put on utilizing these products or tools nationwide. These tools are also used for training at Recreation conferences and at the local level.

We also have the Information Exchange. The Information Exchange has been a very successful means of getting these tools out to the park practitioner. There are over 11,000 members of the Information Exchange right now and they all have available to them on a periodic basis the list of publications that we produce that can be of benefit to the management of their programs. They can also contribute through the Information Exchange technical

information that park managers have developed based on their own expertise.

Mr. MURTHA. How much of this will be put out in the 1982 budget?

Mr. BOWERS. We have not come down with a final figure on that yet although there will be some cutback involved.

Mr. MURTHA. How do you determine the most pressing needs or the priorities?

Mr. BOWERS. They are primarily determined by the park practitioner. They are the ones who set the priorities for us by telling us what types of information they need and that is probably the best way that you can set priorities by going right to the source, those who need to know.

Mr. MURTHA. One part of the HCRS Information Exchange is the publication Notifications. How often is Notifications published?

Mr. BOWERS. When sufficient information is available to put an issue together—about six times a year.

Mr. MURTHA. Do the members of the HCRS Information Exchange pay for this publication or is it financed through Federal appropriations?

Mr. BOWERS. No. As a member of the Information Exchange they receive these Notifications. As a member of the Information Exchange they are also contributing information, too, so to that extent they are paying.

Mr. MURTHA. What has been the extent of PARTS' involvement with the Land and Water Conservation Fund and the Urban Parks grant program?

Mr. BOWERS. Well, there are several areas. For example, one of our functions is to develop information with regard to the design of the facilities. We have put out several publications on the best way to design facilities for the disabled. These publications are used by recipients of the Land and Water Conservation Fund to assure that they have accessible facilities. We also have Park Practices which provides technical information as well as general information on the development and management of park and recreation areas and this is extremely important to grant recipients that have this information available to them so we know they are utilizing the funds we provide in an efficient manner.

Mr. MURTHA. In the fiscal year 1982 budget there is no request for special designated studies. Under this program HCRS performed special studies and reports to provide current and accurate information to make intelligent decisions regarding the protection or wise use of natural resource values.

Why are you dropping the special designated studies?

Mr. RITSCH. We made a decision, Congressman, that since most of the studies undertaken by this unit are influenced either by the rivers program or the trails program, and since we generally have found over a few years' experience that we end up with no more than two or three studies a year, we felt that we could absorb the studies within the moneys and personnel we are requesting for either the rivers or trails programs. For example, we are doing a study right now on the Des Plaines River Valley outside of Chicago in Illinois, which is funded in 1981 out of the special designated

studies account. The study area is located in a river corridor and could be funded out of the rivers system money.

Mr. MURTHA. How do you propose to cover the work previously done under the program?

Mr. RITSCH. The work previously done, the studies you mean that we have previously done? Of course, once a study is completed, it is turned over to whomever is identified through the study as having the level of competence for management. If the study recommends the area be State administered, it would go to the State agency that would be responsible for the river management. They then would proceed to study such problems as management, ingress, egress, etc. Our study really is to determine the worth and the merit of the proposal and then we turn the study over to the managing agency.

Mr. MURTHA. What activities will you sacrifice in order to fund high priority studies?

Mr. RITSCH. Well, if we have to sacrifice, it will be in terms of our current inventory of Wild and Scenic Rivers and our assessment of the National Trails System. I cannot foresee, given the level of funding we have available and the fact that these inventories are pretty well along, that there is going to be that much of an impingement on them. I really can't foresee that much of a problem.

Mr. YATES. How many studies do you estimate you will complete in fiscal year 1981 and in fiscal year 1982?

Mr. RITSCH. Specific designated studies, I would estimate no more than three.

SURPLUS PROPERTY TRANSFERS

Mr. MURTHA. On page HCRS-52 there is a table showing the number of surplus property transfers to local units of government by year. The numbers decrease practically every year. Why is there a decrease in the number of transfers?

Mr. RITSCH. Well, this could be due to a number of things. Of course, as you can see, there was a heavy volume of business in 1971, 1972, actually through 1974 when there was a very concentrated effort leading really up to the bicentennial year to turn over many properties. You might say we have gotten a little bit of the cream off the top in those early years and the 1980, 1981 and 1982 projections are down to pretty much of a standard volume of business really in the surplus property field.

Of course, then, too, we are bound up with only having available to us to review for transfer those properties that are determined to have recreation utility and we are working with GSA now to see if we cannot screen a broader spectrum of properties that come up through the Federal excess process to see if we cannot find more properties that have more and increase this volume of business. This is one way to get local government and State level government a land base on which to build capital improvements and to provide recreation and hopefully have it close to population centers. You may see some increase in these figures as the result of some recent interactions we have with GSA.

Mr. MURTHA. Does the Reagan budget propose to expedite transfers?

Mr. RITSCH. Yes, I think there will be an increased emphasis on the transfer of surplus properties as part of the overall program and certainly as you know Secretary Watt has asked the western Governors and the local governments to try to identify federally-owned properties that they could utilize and that alone should generate some more activity.

COOPERATIVE MANAGEMENT

Mr. MURTHA. Through fiscal year 1980 there were 57 HCRS military-State cooperative agreements to promote planning, development, maintenance and coordination of recreation and wildlife conservation and rehabilitation on military reservations.

Does the Department of Defense have a unified policy or does the policy vary from base to base?

Mr. RITSCH. Yes, they have a policy to participate in the program, of course, but the base commander is the key. If they have a tremendous leaning toward fish and wildlife and outdoor recreation your job is a lot easier; you have them two-thirds sold when you walk on the base to try to negotiate one of these agreements. It has been a very successful program and it seems now the Navy Department, which has been one of the tougher areas to get into, is showing a lot more interest in the program. We expect to see some real activity with the Department of the Navy in 1981 and 1982. The basis of our program is a memorandum of understanding between the Department of the Interior and the Department of Defense.

Mr. MURTHA. Have you exhausted the potential of recreation on military sites?

Mr. RITSCH. Have we exhausted it?

Mr. MURTHA. Yes.

Mr. RITSCH. No, sir, I would not say that we have. As the military mission changes, I think we will find some opportunities that we have not identified in the past. I would say no.

FEDERAL RECREATION FEE PROGRAM

Mr. MURTHA. The Federal Recreation fee program regulates the administration of Federal recreation fees.

What factors go into the determination of the fees?

Mr. RITSCH. I do not have a specific answer to that.

Mr. MURTHA. Why don't you answer that for the record.

Mr. RITSCH. I will answer that for the record. Recreation fees are based on an analysis of comparability both in Federal units and in units administered by the State. We have expanded consideration of the private sector fees as part of that comparability analysis. That is a general answer and I will be glad to provide a complete answer for the record.

[The information follows:]

Question. What factors go into the determination of the fees?

Answer. Criteria for establishing recreation use fees are found in 36 CFR, Part 1227:

§ 1227.9 Establishment of recreation use fees.

(a) Recreation use fees shall be established by all outdoor recreation administering agencies of the Department of the Interior in accordance with the following criteria: (1) The direct and indirect cost to the government, (2) The benefit to the recipient, (3) The public policy or interest served, (4) The comparable recreation fees

charged by other Federal agencies, non-Federal public agencies and the private sector located within the service area of the management unit at which the fee is charged, (5) The economic and administrative feasibility of fee collection, and (6) Other pertinent factors.

(b) With the approval of the Secretary of the Interior recreation use fees may be established for other types of facilities in addition to those which are listed below.

(c) Types of recreation facilities for which use fees may be charged.

Tent, trailer and recreation vehicle sites;[1] Group camping sites; [1 2] Specialized boat launching facilities and services;[3] Lockers; Boat storage and handling; Elevators; Ferries and other means of transportation; Bathhouses; Swimming pools; Overnight shelters; Guided tours; Electrical hook-ups; Vehicle and trailer storage; Rental of nonmotorized boats; Rental of motorized boats; Rental of hunting blinds; Reservation services; and Specialized sites (highly developed).

Mr. MURTHA. The Federal Recreation Fee program operates the Golden Eagle Passport Golden Age Passport and the Golden Access Passport activity. Has the program maintained and increased its popularity?

Mr. RITSCH. To the best of my knowledge, it has. Of course, the Golden Access Passport is the newest feature of that program and that is being implemented for the current recreation season wherein blind and disabled persons will enjoy a free entry permit and 50 percent off of use fees. Demand has been high in this program area.

Mr. MURTHA. Why don't you answer that also for the record then.

Mr. RITSCH. All right.

[The information follows:]

Question. Has the program maintained and increased its popularity?

Answer. The Golden Age Passport is a lifetime permit, therefore, a continued gradual decline in the number issued each year is anticipated.

The Golden Eagle Passport is an annual permit, costing $10, and has maintained its popularity. The sales have fluctuated, especially in 1978 and 1979 as indicated in the following chart:

Golden Eagle Passport sold

Year:	
1977	162,262
1978	240,211
1979	129,717
1980	133,398

We believe that the major reasons for the decrease in sales for the last two years has been the increased cost of gasoline and the general economic conditions. The decrease in sales coincides with the decrease in attendance to the national parks and other recreation areas.

Mr. MURTHA. Do you know what it costs to operate this program?

Mr. RITSCH. Of course, our estimate is $50,000 and we have about one and a half full-time workers associated with it so we are able to do the coordinational activity that appeared as a modest price and a lot of that is associated, of course, with printing of the permits and so forth.

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[1] Provided, that in no event shall there be a charge for the use of any campsite and adjacent related facilities unless the campground in which the site is located has all of the following: Tent or trailer spaced, drinking water, access road, refuse containers, toilet facilities, personal collection of the fee by an employee or agent of the bureau operating the facility, reasonable visitor protection, and simple devices for containing a campfire (where campfires are permitted).

[2] The administering agency may establish a group use rate in lieu of the above "Group Camping Sites" recreation use fee in accordance with the criteria set out in this section provided such rate is not less than $3.00 per day per group. Such a group use rate may constitute either a special recreation permit fee or a recreation use fee as determined by the administering agency.

[3] Use fees for boat ramps are prohibited. However, in the case of boat launching facilities with specialized facilities or services, such as mechanical or hydraulic lifts, reasonable fees may be assessed in accordance with the criteria set out in a paragraph (a) of this section.

Mr. MURTHA. Are there any proposals to increase the cost of the Golden Eagle Passport?

Mr. RITSCH. No, not to my knowledge there are not.

DEVELOPING ALTERNATIVES TO LESS-THAN FEE ACQUISITION

Mr. MURTHA. There is a $345,000 reduction in the Federal Real Property Program. What are the consequences of reducing the effort to develop alternatives to less-than-fee acquisition for use by non-Federal groups?

Mr. RITSCH. Well, actually we are placing a lot of emphasis on the alternatives to fee approach and that has been as a result of activity by the agencies that participate in the Federal side of the Land and Water Conservation Fund through the Land Policy Group which is staffed by HCRS. We have conducted one study, have another under consideration and are preparing to make recommendations to the Land Policy Group. The program continues to have high visibility and I believe it is part and parcel of this administration's whole overview of the Federal side of the program and how we conduct that side of the program.

NATURAL LANDMARKS PROGRAM

Mr. MURTHA. On page HCRS–56 of the budget justification you discuss the Natural Landmarks Program. Does the Geological Survey participate in the identification of the potential national natural landmarks?

Mr. RITSCH. Well, they participate, I guess, to an extent. It is handled internally insofar as the way the potential landmarks are identified at the present time by the HCRS and it is through what we call the national region studies that are conducted in the 33 regions of the United States. We do one for geology and one for ecology and each of those studies generates a number of potential landmarks. Those are placed into a public participation process which includes the affected Federal agencies, and they comment on what we determine to be the natural worth of America—that is, a unique site. So to that extent, yes, they do participate and some of their individual scientists have even undertaken through transfer of funds to do, for example, a geologic study in a certain physiographic region. So, sometimes based on that expertise they actually help us develop the original studies. I would like to provide additional material for the record.

[The information follows:]

ROLE OF GEOLOGICAL SURVEY IN NATURAL LANDMARKS

The Heritage Conservation and Recreation Service has used the Geological Survey to perform two of the natural region studies which identified potential national natural landmarks. Those studies were Atlantic Coastal Plain, geology portion and Arctic Lowland, Alaska, geology portion.

Geologists from the Survey have also done the field evaluations on several dozen potential landmarks and participated in the review panels used in 1979 to process the backlog of potential sites. In addition, we have attempted to use the Geologic survey staff more often, but they are very busy with other duties and have not been available as often as we wished.

Mr. MURTHA. What are the criteria used to determine if a particular site is to be selected as a Natural Landmark?

Mr. RITSCH. I will be glad to furnish that for the record.

[The information follows:]

LANDMARK CRITERIA

The natural landmark criteria are part of the Procedures for the Natural Landmark program which were published in the Federal Register on December 1, 1980. These procedures reflect comments received from Federal agencies, State and local officials, private organizations and interested citizens on interim regulations for the natural landmarks program which appeared in the Federal Register on November 20, 1979.

NATURAL LANDMARK CRITERIA

National natural landmark designation recognizes areas which best represent the ecological character of the United States, including, for example, terrestrial communities, aquatic communities, landforms, geological features, habitats of native plant and animal species, and fossil evidence of the development of life on earth. The identification, evaluation, and designation of national natural landmarks is based on the fact that the characteristics of each of the different natural regions of the United States are distinct, such that their features are also distinct. Thus, for the purposes of the natural landmarks program, if an area, using the criteria below, is determined to be significant to a particular natural region, it is considered to possess national significance because it is a distinct and representative illustration of the nation's natural heritage. Determination of national significance is made by comparing areas which possess similar characteristics, within the framework of the natural region studies. These studies of ecological and geological features in each natural region provide a scientific basis for designating natural landmarks.

When identifying and evaluating examples of the different types of ecological and geological features, the following criteria are used to determine national significance and potential for landmark designation:

(a) *Primary criterion.*—The guiding principal in determining potential for landmark designation is that the area being evaluated must contain one or more excellent examples of the ecological and geological features identified in the natural region classification system.

This primary criterion is applied to all areas being evaluated for possible landmark designation. Use of the term "excellent", emphasizes the program's goal to recognize only those features that best represent the Nation's natural heritage.

(b) *Secondary criteria.* The following criteria, not necessarily in this order, are used to determine which of the excellent examples best represent the different ecological and geological features of a natural region and therefore qualify for landmark designation:

(1) *Viability.*—The area is better capable of retaining and perpetuating its inherent natural values over time than other areas of its type in the natural region. Relative to other such areas, it exists in a state which encourages its persistence and survival. In the case of ecological communities, the area contains a fuller complement of the species which are known to naturally occur in that type of community than other such areas; and/or

(2) *Condition.*—The area has been relatively free from disturbance and human intervention for a longer period of time than other areas of its type in the natural region, and therefore more closely approximates a stable and natural environment. Certain types of features may only occur in a somewhat disturbed state, while other types tend to be less disturbed. The best available examples of each type in a natural region are sought, not merely types that are undisturbed; and/or

(3) *Inherent diversity.*—The area contains a relatively greater number of excellent examples of the ecological and/or geological features characteristic of the natural region than other areas of its type in the natural region; and/or

(4) *Education and research.*—The area has greater value to scientific research, education, and/or public awareness of the nation's natural heritage than other areas of its type in the natural region.

The secondary criteria are applied uniformly to all areas being evaluated, although each of them may not be directly applicable in every case. Taken as a whole, they directly pertain to the inherent natural values of ecological and geological features. The primary criterion and secondary criteria provide the basis for the application of professional expertise to the identification, evaluation, and designation of natural landmarks.

Mr. MURTHA. One of the objectives of the Natural Landmarks Program is to encourage the preservation of sites illustrating the ecological and geological character of the United States. What

enforcement power, other than the power of persuasion, do you have?

Mr. RITSCH. Frankly, we don't have any other power than the power of persuasion in this program. It is strictly a scientific program to identify the scientific merits of the site; if federally owned, the agencies are advised as to where these sites are located. In their planning I think most Federal agencies consider those sites and try to either avoid or mitigate them, particularly those agencies that are in the resource business, as is the National Park Service. When it comes down to having absolute control, we have none, it is strictly a scientific program.

MONITORING PROGRAM

Mr. MURTHA. What is the extent of the monitoring program?

Mr. RITSCH. Well, we have a monitoring responsibility, of course, and an annual report to Congress. Every year we have to report those that have been threatened as to whether the values for which they were nominated and designated have been destroyed or affected. We do that monitoring. We are trying to use many sources of expertise for that.

For example, we are working with the Soil Conservation Service. We don't have the actual number of people in the field to look at some 600 Natural Landmarks every year but the Soil Conservation Service is working with us and we may enter into an agreement where they will help us in that task and they do have the scientific expertise to do it. The Boy Scouts of America offered their Explorer troops, the older kids going into college. They are very interested in natural resources and they have agreed on a pilot basis this year to adopt a number of these landmarks across the country and to help us in the reporting on them.

We are trying to do that, and then we follow through where there is some report of damage or threat and to actually try to compute some on the unit and verify that. So it has cencentrated our effort into finding where the new threats are found.

MAINTENANCE OF THE NATIONAL REGISTER

Mr. MURTHA. Maintenance of the National Register. On page HCRS–68 you describe the maintenance of the National Register. What is the actual physical form of the files that make up the National Register?

Mr. RITSCH. I would like Mr. Rogers to answer that particular question.

Mr. ROGERS. Congressman, the National Register is still a paper file in which nominations are prepared by citizens, local governments, State Historic Preservation Officers and also by Federal agencies and forwarded to us on a short four-page paper form. This form and the photographic documentation and map documentation that goes along with it enable us to make a judgment about the significance of the property. We file it in that fashion and we have now attempted to get that file in the computer where it will be much more useful.

Mr. MURTHA. How are the files protected from fire at the present time?

Mr. ROGERS. We are protecting those records by microficheing each of them and then sending the paper file to the Federal Record Center. We are well along in that process.

TAX TREATMENT EXTENSION ACT OF 1980

Mr. MURTHA. The Tax Treatment Extension Act of 1980 included an additional responsibility to certify structures and historically important land areas for charitable tax deduction purposes. What type of structure and land areas qualify for charitable tax deduction purposes?

Mr. ROGERS. Any commercial property that is listed in the National Register individually is automatically a certified historic structure and therefore qualified. A property encompassed within a historic district listed in the National Register which contributes to the significance of that district also qualifies. Specific criteria have not been worked out for land areas to be certified within the meaning of the Tax Treatment Extension Act but I believe those criteria will run very parallel to the criteria for listing in the National Register themselves.

Mr. MURTHA. What is required to make the certification?

Mr. ROGERS. Again this is like most of the work that is done within the programs. It is something that is initiated by the citizen who wants the certification, with the advice and assistance of the State Historic Preservation Officer, and then forwarded to us with the opinion of the State Historic Preservation Officer. The certifications are made by the HCRS personnel in the regions.

WORKLOAD

Mr. MURTHA. How much of a workload do you anticipate as a result of the new responsibility?

Mr. ROGERS. From the new responsibilties under the Tax Act, we do expect some increase in workload. I believe we were estimating 1,800 Tax Act certifications of significance as compared to a little over 1,600 during the current fiscal year. People are learning about the Tax Act and an increasing number of people are attempting to take advantage of it.

Mr. MURTHA. Why do you expect the number of Tax Act certifications to increase so dramatically?

Mr. ROGERS. Largely because the word is getting around that it is a program that works. It is a program that does not involve a great deal of haggling with bureaucrats and it does not involve an awful lot of red tape. It is a program that has seen to the rehabilitation in the course of only about three years of about $1.1 billion worth of work on historic properties. The direct administrative costs to HCRS have been only a little over $1 million and add to that the revenue loss that we were discussing this morning. We see a substantial program. People are learning about it and they want to get into it.

Mr. MURTHA. Will you be able to handle the increase in business without an increase in staff?

Mr. ROGERS. Mr. Chairman, we believe we can handle the increase in business insofar as the workload that we had been expecting within HCRS. Obviously, we do have a new ball game to try to

figure out how the program will operate if certain States decide not to participate after the end of this fiscal year—so there will be a hurdle to leap over.

DETERMINATIONS OF ELIGIBILITY

Mr. MURTHA. The National Historic Preservation Act Amendments of 1980 also create the additional responsibility to provide determinations of eligibility on nominations where private owners object to the listing of their properties in the National Register. Have you been called on to make any determination at this point?

Mr. ROGERS. We make determinations of eligibility as a matter of routine under earlier authorities: Executive Order No. 11593 and Section 106 of the National Historic Preservation Act of 1966. Normally those are made at the request of Federal agencies. We are accustomed to making those kinds of determinations; however, we have not yet implemented the new determination responsibility of the Historic Preservation Act Amendments of 1980 because we are in the process of working out regulations that will define how we intend to handle this matter of allowing the owner an opportunity to concur in or object to the nomination. Until we get those regulations complete and until we have allowed Congress the amount of time it asks for in the law to review those regulations, we will not be making determinations on privately owned property.

CERTIFICATION OF REHABILITATION PROJECT

Mr. MURTHA. In fiscal year 1980 just a little more than 50 percent of the applications for certification of rehabilitation projects on historic structures were approved. Why are so many turned down?

Mr. ROGERS. We are being vigilant in our review of those certifications. We decide whether the property should be certified under the meaning of the Tax Reform Act based on the Secretary of the Interior's standards for rehabilitation. It is not uncommon for an applicant to be working on a property and then discover the Tax Reform Act and later discover the standards and then seek certification. Normally they have not used standards to do the work and are not able to get certification.

[COMMITTEE NOTE.—Staff was later informed that Mr. Murtha's question was based on a typographical error in the text of the HCRS budget justifications on p. HCRS–88 which states "In fiscal year 1980, 100 rehabilitation projects * * * were approved. Another 90 projects were denied certification * * *" The correct approval number is 1,100. Overall, between 85 and 90 percent of the applications for tax certification are approved. The other comments regarding the careful application of the Secretary of the Interior's standards for rehabilitation are correct and appropriate.]

REASON FOR REJECTIONS

Mr. MURTHA. What are the typical reasons for rejections?

Mr. ROGERS. The most common reason of all is probably something that an average contractor would think would be a good thing to do to a historic building. In fact, it is terribly destructive—that is to clean paint off brick by some abrasive means like sand-

blasting. Not only do you do harm to the brick at the moment but you may set up a perpetual cycle of destruction that will cause the building to be totally destroyed over a period of years. That is not uncommon.

Another very common mistake that the average worker makes is to use Portland cement when repointing a brick or stone building. The Portland cement is stronger than the material the building itself was made of and so the next time there is some settling in the building or the earth, it is the original material that gets destroyed while the Portland cement survives. Those are somewhat esoteric, technical things to the normal person but they are very important to the practitioner.

Mr. MURTHA. If a brick building has been painted, it is detrimental to sandblast the paint?

Mr. ROGERS. It is extraordinarily destructive and we try to get the word around why it is detrimental, how you can clean buildings without harming them, and why it might be better to leave the paint on the building.

Mr. MURTHA. You would recommend to leave the paint on the building in a case like that?

Mr. ROGERS. We often would, but there are other ways of cleaning buildings. One of the technical publications we have done is this one which is sold by the Government Printing Office for $1.25 and it has had very broad distribution. "The Cleaning and Waterproof Coating of Masonry Buildings." It attempts to show how one should be very careful in selecting technical methods and not rush into solutions that are believed by the average contractor on the street to be good things to do. They very often are harmful.

A second publication shows the dangers of abrasive cleaning to historic buildings. I think the photograph on this one is self-evident as to what happens when you sandblast a historic building.

Mr. MURTHA. Are you talking about the dangers of abrasive cleaning to stone and marble as well as to brick?

Mr. ROGERS. As a matter of fact, any masonry should not be cleaned by harsh, abrasive methods. Obviously, tough granite is a lot more resilient than sandstone, but some terrible mistakes have been made by abrasive cleaning in past years. We feel these little publications which have been produced at an average cost of between $5,000 and $9,000 each have been very much worth the money.

There is, I think, a lady in Detroit who applied for Tax Act certification of a commercial building she had rehabilitated, and her contractor had made a fundamental mistake in using Portland cement to replace the old resilient mortar. We denied the certification. She appealed that case and I heard the appeal and I denied it as well. The lady is now suing the United States.

Mr. MURTHA. If she had used a cement, other than Portland cement, you would have approved it?

Mr. ROGERS. If she had used lime mortar which would have been capable of giving and moving and pulling along with the structure as it shifts or settles through the coming decades, it would not have done harm to the building. I daresay the United States will spend more money on litigating the case than we spent on this publication.

Mr. MURTHA. Do people reapply for Tax Act certification?

Mr. ROGERS. We get people who reapply after they find out we mean business about applying the Secretary's standards. Very often it takes an initial refusal to get the attention of the architects and get them to understand that we don't certify just any old work they decide to do on old buildings.

ADVICE ABOUT STANDARDS

Mr. MURTHA. Do you give advice to those you deny certification? Do you tell them exactly what the problem is?

Mr. ROGERS. Yes, sir, we do because they have the right to appeal. We try to be very specific on the area under contention that they may disagree with.

Mr. MURTHA. I assume this is a program of educating your applicant so there will be fewer rejected, is that right?

Mr. ROGERS. That is our objective. Our principal objective is to try to see that the right things are done, by whomever, to the historic buildings throughout the United States.

SANDBLASTING

Mr. MURTHA. Are you saying it is detrimental to any masonry building to be sandblasted?

Mr. ROGERS. I cannot think of any time I would recommend sandblasting as a proper cleaning technique. There are a few times when it is conceivable that it could be done with minimal harm. However, the technology of abrasive cleaning is improving very dramatically as people are learning to clean not just with sand but with other types of abrasive materials. It is possible that this technology would develop new cleaning systems that can be used in the future.

Mr. MURTHA. To what extend does sandblasting increase the rate of deterioration of a brick building?

Mr. ROGERS. If I were to answer that generally, I would automatically be overgeneralizing because bricks are different from one place to another around the country. When we are dealing with soft brick, if you take the outer skin off that brick by sandblasting it away, you have very often created a situation where the next fall or winter, rains will penetrate the brick. Then it will freeze and bits of brick will be broken away with the expansion of the moisture inside as it freezes. Sometimes it can drastically accelerate the deterioration of the building. It is not unusual for someone's well meaning work on a historic building to actually damage it.

Mr. MURTHA. Not only a historic building but any building, is that right?

Mr. ROGERS. Yes, sir. We feel our information should be useful to people who are rehabilitating existing buildings of whatever type.

URBAN PARK AND RECREATION FUND

Mr. MURTHA. Urban Park and Recreation Fund. According to the President's Program for Economic Recovery, the Urban Parks grant program is to be eliminated in fiscal year 1982 and $35 million rescinded in fiscal year 1981.

Is the Urban grant program being eliminated because of flaws in the program or for purposes of economy?

Mr. RITSCH. No, I would say it is for the latter, for purposes of the economy.

Mr. MURTHA. Other programs have been cut back but not eliminated. Why do you propose elimination rather than a reduction? Rather than answer that now, you may want to elaborate on your answer to this particular question.

Mr. RITSCH. Well, actually we are proposing no moneys for any of our three major State grant programs in 1982 and it is all part of the economic recovery proposals of the President so we have not singled out the Urban Park and Recreation Recovery program. We have bitten a pretty hard bullet here and it is a tough one to bite but that is the decision to make, Congressman Murtha.

Mr. MURTHA. The President's program does provide an increase of $105 million for National Park restoration and improvement. Portions of the Nation's population live in areas where access to the National Parks is not easy and even more expensive as transportation costs escalate. The Honorable Ray T. Kest, Commissioner of Lucas County, Ohio, testified before our committee and he said: "The National Urban Recreation study in 1978 showed that 50 percent of the visitors in our national parks live within two hours of the entrance. In addition, it is shown that the farther a visitor traveled, the greater the likelihood that the visitor had a higher income and more education than the average visitor. The elderly and the poor must use our local park systems no matter what condition they are in but they lack the access to our National system. This was confirmed in the National Urban Recreation Study."

What remains in the President's program to meet the recreation needs of the elderly and poor?

Mr. RITSCH. Well, for 1982 there will not be funds to accomplish that. Now we are hopeful that we have done a number of things through the funding that has been made available. For example, we have been funded for the past fiscal years, including this year, at $20 million in fiscal year 1979, $65 million in fiscal year 1980 and another $65 million in fiscal year 1981, taking in account rescissions and deferral to date. The program has been geared not only to renovating older park systems in situations like you describe but it has also funded Recovery Action Programs which are really a planning function at the local level and it has funded innovation grants at the local level. Those two were done in order to enhance the localities' capability to really handle themselves better regardless of the level of Federal funding. So at least we have put that much money in over a three-year period.

My understanding is there are probably 300 cities that are doing these Recovery Action Planning efforts, out of the total number of cities that are eligible. So who knows in that structure. Of course, part of that was to demonstrate new ways to do programs and to bring the private sector in, so we have created some mechanisms out there that will offset these cuts, at least in part. I cannot say it will be the panacea but that much we have done.

Mr. MURTHA. It has also been suggested by Commissioner Kest and others that park restoration can be a first step in the neighbor-

hood revitalization process. The Republican Mayor of St. Joseph, Missouri testified that the program has enhanced the qualify of life and economic development prospects of St. Joseph.

What other catalyst does the administration envision to spark neighborhood revitalization and economic redevelopment?

Mr. RITSCH. I think that question is a lot broader than I have the purview to answer but again I have to fall back to some of these systems that we have put into place, and their money generation aspects. Their economizing aspects are freeing up moneys that have heretofore been lost through improper management or poor systems for controlling use of the existing systems and so forth and will help offset this program elimination. That is probably the best answer I can give you at this point.

Mr. MURTHA. Please provide the rest of that answer for the record.

[The information follows:]

NEIGHBORHOOD REVITALIZATION AND ECONOMIC DEVELOPMENT

This Administration has been in office for a very short time. We know the recommendations that affect our programs but have not been involved in decisions affecting other urban programs. We are therefore not in a position to provide the other catalysts the administration envision to spark neighborhood revitalization and economic development.

GRANTS FOR THE NATIONAL TRUST FOR HISTORIC PRESERVATION

Mr. MURTHA. The President's Program for Economic Recovery also eliminates the Historic Preservation Fund grants except for a grant to the National Trust for Historic Preservation. Why is the National Trust singled out for preservation while other elements of the program are scheduled for demolition?

Mr. ROGERS. The National Trust was chartered by an act of Congress in 1949. It does a series of jobs that were intended under that law to expand beyond what the Federal Government was able to do, principally through the National Park Service, before 1949—not only maintaining properties for public visitation but helping support the citizen movement to preserve historic resources throughout the Nation.

Also something we have not pointed out, the Federal Government is the National Trust's successor in interest if the National Trust were ever to disappear.

Mr. MURTHA. Does the administration propose to continue making grants to the National Trust in future years?

Mr. DICKENSON. I would presume so.

Mr. MURTHA. What is the basis for the level of the request for the Trust?

Mr. ROGERS. The National Trust submits to us a work program proposal similar to those submitted by the States that describes the work it would propose to undertake in pursuance of its congressional charter and a figure is negotiated with them based on the total amount of the appropriation for that year.

Mr. MURTHA. What percentage of the Trust's funds comes through the Historic Preservation Fund?

Mr. ROGERS. I would probably want to elaborate on that to check on the precise facts but it is my understanding that it is somewhere in the neighborhood of 40 percent.

Mr. MURTHA. What impact would a 25 or 50 percent reduction in the grant have the Trust?

Mr. ROGERS. I would need to ask the National Trust which of its programs it would need to cut down on in order to answer. It would impact some important programs.

BUDGET, MEMBERSHIP, AND OVERSIGHT OF THE NATIONAL TRUST

Mr. MURTHA. In a document prepared by the National Trust for Historic Preservation they list $1.5 million as an effort responsible for growth in the membership of the National Trust, thereby allowing the American public to become increasingly aware of and involved in the preservation movement. Additionally, it has yielded the support necessary for the successful outreach program outlined above. Is this a legitimate expenditure of money?

Mr. ROGERS. Mr. Chairman, I am not sure that $1.5 million of Federal funding would have been used to increase the National Trust membership.

Mr. MURTHA. Of your total budget of $1.5 million do you think, 40 percent is funded by the Federal Government?

Mr. ROGERS. I think it is possible that 40 percent of the total budget of the National Trust is funded by the Federal Government. The National Trust does deliver its services largely through its members, including its individual members and its organizational members. The Trust reaches around two million Americans with its services and its information. Its membership is a means of access to the information and services of the Trust, it is not just a means of supporting the Trust.

Mr. MURTHA. What oversight is there for the grant to the Trust?

Mr. ROGERS. Well, as I said, the National Trust does submit a work program to us. We evaluate that work program against the legal authorities under which the Historic Preservation Fund has been operated, against the legal authorities of the National Trust Act, and against whatever we have gained from the appropriations process concerning the intent of Congress.

Mr. MURTHA. If you do monitor the program, what is your opinion and the opinion of the Department, about this expenditure of $1.5 million?

Mr. ROGERS. My opinion would be that the National Trust did not use $1.5 million in a self-serving manner just to increase its membership but rather to expand its outreach of services and information.

Mr. MURTHA. Would you elaborate on that in detail for the record? I would like you to provide also answers to several additional questions for the record.

Mr. ROGERS. Yes.

[The questions and answers follow:]

Representative Murtha's Questions

MEMBERSHIP OF NATIONAL TRUST

Question. In a document prepared by the National Trust for Historic Preservation they list $1.5 million as an effort responsible for growth in the membership of the National Trust thereby allowing the American public to become increasingly aware and involved in the preservation movement. Additionally, it has yielded the support

necessary for the successful outreach program outlined above. Is this a legitimate expenditure of money? Would you elaborate on that in detail for the record?

Answer. Under its Congressional Charter (16 U.S.C. 5468, et seq.), the National Trust is a membership organization. The membership is used as a means of identifying those citizens who want and need historic preservation services and information, and as a means of delivering such services and information. Many members are organizations composed of many individuals. Thus, through its membership the Trust reaches several million individuals. The National Trust has reported to HCRS that $1.2 million was used to increase membership during fiscal year 1980; $600,000 of this was Historic Preservation Fund money. Membership development is an allowable cost under OMB Circular A-122 "Cost Principles for Nonprofit Organizations", issued June 27, 1980. That Circular allows public information service costs to "inform or instruct individuals, groups, or the general public; interest individuals or groups in participating in a service program of the organization; disseminate the results of sponsored and nonsponsored activities." This expenditure generates significant additional private support for the Trust. As a result of the $1.2 million expended in fiscal year 1980 on membership, membership support of $2,373,000 was achieved. In fiscal year 1981, the Trust has budgeted $957,000 for membership development, $474,000 of which is from HPF monies.

GRANTS FOR HISTORIC PRESERVATION

Question. What percentage of the Trust's funds (budget) comes through the Historic Preservation Fund?

Answer. In fiscal year 1980, the National Trust was allocated $5.2 million from the Historic Preservation Fund. This comprised forty-five percent (45 percent) of the Trust's total budget expenditures. In fiscal year 1981, the $4.7 million grant constitutes forty percent (40 percent) of the Trust's total annual budget expenditures. Occasionally the Trust also receives smaller grants from the HPF such as Secretary's Discretionary Fund grants for various specific projects, and funds for the Maritime Grants program.

Question. What impact would a 25 or 50 percent reduction in the grant to the Trust have?

Answer. The National Trust is an organization with ongoing programs and it is difficult for it to adjust to dramatic fluctuations in financial support. The Administration's current proposal reflects a belief that reductions in grant support to State programs would increase public demands upon the National Trust.

A reduction of the 25 percent in the fiscal year 1982 grant would restrict outreach activities that inform, advise, and assist National Trust members' and the public's participation in preservation. Specifically, the Trust would:

Curtail the work of the six regional offices serving as the primary preservation advisory and information clearinghouses to States, local governments, non-profit organizations, businesses, and individuals;

Cancel planned capital improvements to National Historic Landmarks in its stewardship, which are open to the public for visitation and use;

Restrict maintenance work on Trust properties.

A reduction of 50 percent would even more seriously diminish all National Trust programs. Such a reduction would severely reduce the organization's ability to continue programs of technical assistance, education, and outreach, and would render the Trust unable to properly administer and maintain its historic properties. Specifically, it would be necessary to:

Eliminate matching financial assistance for such programs as maritime and consultant services;

Close at least two regional offices and reduce staff in the remaining offices;

Decrease the number of educational publications;

Cut back or eliminate public awareness activities;

Close most or all the National Trust's properties for part or all of the year, including the Restoration Workshop (which would have a further adverse impact on National Trust income);

Reduce staff by up to 25 percent.

ADMINISTRATION OF THE HISTORIC PRESERVATION FUND

Mr. MURTHA. The Historic Preservation Fund has provided for 30 Federal employees to administer the program. This staff, among other duties, provides for the resolution of financial audits and inspections of development projects.

How will these activities be accomplished in fiscal year 1982 since all financial audits will not be complete and development projects will continue into fiscal year 1982?

Mr. ROGERS. As I think Mr. Ritsch indicated at one point this morning, there is supposed to be a $2 million amount in the operation of the National Park System budget under which the continuing obligations of the Historic Preservation Fund along with UPARR would be financed. Clearly, we would have to do some very close evaluation of the priorities of work needed to accomplish the purpose of winding down the program to provide those services.

DAMAGE TO BUILDINGS BECAUSE OF SANDBLASTING

Mr. MURTHA. Going back to the previous question about the deterioration of the brick building, do you have any idea how much damage sandblasting has done to buildings throughout the country? Sandblasting seems to be a common practice. I see it quite frequently.

Mr. ROGERS. It is an enormously common practice. There are even sandblasting companies that advertise their services on historic rehabilitation. We still need very badly to get that basic information not only into the hands of preservationists but in the hands of builders and contractors and craftsmen.

ADMINISTRATION OF THE HISTORIC PRESERVATION FUND

Mr. MURTHA. How much would be needed to maintain a staff to close out financial audits, inspect development projects, monitor the grant to the National Trust and manage grants to the States to allow them to maintain their current preservation staff?

Do you want to answer that for the record?

Mr. ROGERS. I am told about $1 million is needed in 1982, excluding indirect costs. Only assessment of new development projects would no longer be performed.

PROGRAM TO INSURE LOANS FOR PRESERVATION

Mr. MURTHA. Now let's go to Historic Preservation Act Amendments. Section 104(a) of the National Historic Preservation Act Amendments of 1980 authorizes a program to insure loans made by a private lender to finance any project for the preservation of a property included on the National Register.

Please describe for the committee how this program would operate.

Mr. ROGERS. Mr. Chairman, under the present budget we would not anticipate being able to implement that program.

Mr. MURTHA. How would it operate if it were implemented?

Mr. ROGERS. If it were implemented, we would need to understand the intention of the person whose loan was being insured, we would need to understand what they propose to do to the historic building so that it would be properly preserved, and we would need to be sure that the kind of technical information you see before you was in their hands. The intention is to simply insure the loan rather than to supply low interest rates.

Mr. MURTHA. How much would be needed in order to start the program?

Mr. ROGERS. There were some early planning figures discussed of a little over $900,000 over a two-year period to decide how to implement the program. We were not at the stage of estimating how much money it would take to actually insure against loan defaults.

PRESERVATION AWARDS PROGRAM

Mr. MURTHA. The Preservation Act Amendments also establish an annual preservation awards program which permits payment of up to $1,000 to individuals for special achievements in the preservation of historic resources.

How much, if any, is planned in either fiscal year 1981 or fiscal year 1982 for the awards program?

Mr. ROGERS. We had not intended to budget money for implementation of the awards program although it is very possible that we would be able to use existing staff and appropriated funds to develop the standards and methods by which that program would be operated.

Mr. MURTHA. Tell us about this awards program.

Mr. ROGERS. Mr. Chairman, I think the idea is to stimulate the preservation of historic properties by people other than those on the staffs represented here in this room and to recognize outstanding contributions as one more means of trying to get a broad spectrum of people in government and out to preserve historic properties to high standards.

Mr. MURTHA. Let me read to you Public Law 96-515, December 12, 1980.

> The Secretary shall establish an annual preservation awards program under which he may make monetary awards in amounts of not to exceed $1,000 and provide citations for special achievement to officers and employees of Federal, State and certified local governments in recognition of their outstanding contributions to the preservation of historic resources.

Mr. ROGERS. Frankly I appreciate your asking about that subject. It would give me a great deal of pleasure to be able to give the Commissioner of Public Buildings in the General Services Administration a $1,000 award because he adopted the Secretary of the Interior's standards for treatment of the public buildings under his care. I would love to do the same thing for the head of the Veterans Administration and for all of those agencies throughout the Government that have responsibility for historic buildings even though they have other responsibilities to look after, too. This is one of the means of rewarding the ones who do it well and getting the attention of those who do not.

Mr. MURTHA. Isn't it shortsighted? In these circumstances we can refer again to the example that we had just talked about, that is the substantial deterioration of a brick building by using the wrong procedure. It seems to me the awards program has real merit, not only for historic preservation but to the country as a whole. We would like to encourage and help a program such as this one. Yet all the effort is just not worth the little bit of money that would be involved.

Mr. RITSCH. Well, as you can tell by these figures, we are under some pretty severe constraints and you have to judge your priorities. I agree with him that it would be nice if we had that finan-

cial award. Right now we have some very beautiful certificates but they carry no money. We are very anxious to give those out also but it is a matter of priorities. I guess I would have to answer, Congressman, these are austere times.

Mr. MURTHA. I just believe that this program may very well save us a lot more money.

Mr. RITSCH. I understand. It could really generate considerable savings.

Mr. MURTHA. It could generate savings and certainly historic preservation.

Who would administer the awards program if it were to be implemented?

Mr. RITSCH. Well, we have a current program. Each Service basically has a certificate program and presents awards of this nature. I know HCRS has for years. As a matter of fact, we have a combined award now that attaches to all three of our program areas regardless of whether it is a recreation venture that we are awarding with the certificate or a natural program or cultural. I don't know how many we do per year but we certainly single out people who have done worthwhile things in these program areas and we try to give them a certificate and try to arrange an appropriate ceremony—nothing extra fancy but at least have it presented in an atmosphere that will please the recipient of the award.

PROVISION ALLOWING OWNERS TO KEEP PROPERTY OFF THE NATIONAL REGISTER

Mr. MURTHA. One of the more significant provisions of the Preservation Act amendments is the provision allowing owners of properties to reject inclusion of their properties on the National Register.

What is the status of the regulations to cover this provision?

Mr. ROGERS. Those regulations have been drafted and have been shared with State Historic Preservation Officers during the past few days to see the degree to which they think they might be workable. Essentially, we intend to implement that provision by adapting a notification process that the State Historic Preservation Officers use now and to ask the property owners in responding to that notification to give us either their concurrence or objection. They will have a specified period of time within which to respond. If they do not respond, we will be able to list the property. If they object, we will not list the property. The regulations should be ready to come to Congress for the congressional review shortly.

Mr. MURTHA. The objection of the property owner is final and you cannot override that objection?

Mr. ROGERS. That is right. We are also directed under the law under those circumstances, if the property meets the criteria for the National Register to determine it eligible.

ASSISTANCE TO FEDERAL AGENCIES TO PRESERVE HISTORIC PROPERTIES

Mr. MURTHA. The Preservation Act amendments also require each Federal agency to assume responsibility for the preservation of historic properties which are owned or controlled by that agency

and the Secretary of Interior is to assist the agencies in this endeavor.

To what extent have you been providing assistance to the agencies?

Mr. ROGERS. Mr. Chairman, we have had a long-standing approach of advising and assisting Federal agencies concerning the identification of historic properties so they know when they have one, and then concerning the appropriate treatment. Our assistance has consisted of contacts between our regional office and regional personnel of other Federal agencies, Washington contacts, and two different courses that we have provided for the benefit of other Federal agency people, including General Services Administration building managers. However, we have barely begun to actually provide those services in terms of this specific authority.

THE PENSION BUILDING/NATIONAL MUSEUM OF THE BUILDING ARTS

Mr. MURTHA. Let's move on to plans for the Pension Building. With the termination of HCRS, what plans do you have for use of the Pension Building?

Mr. ROGERS. I believe that question belongs to the General Services Administration.

Mr. RITSCH. That is right. Currently we are occupying probably two and a half floors of the Pension Building with HCRS divisions and offices, some of which will be absorbed, I assume, into other offices that the Department has but I think probably over the shorthaul we will be there for a while yet until we get this merger.

Mr. MURTHA. You will be in the Pension Building?

Mr. RITSCH. Yes, until we get this merger worked out and determine how to distribute those people.

Mr. MURTHA. The Preservation Act Amendments direct the Secretary of Interior and the Administrator of the General Services Administration to enter into a cooperative agreement with the Committee for a National Museum of the Building Arts to establish a museum in the Pension Building.

Have the negotiations started on this cooperative agreement?

Mr. ROGERS. The answer to that is: not in any substantive form. We expect to undertake those negotiations.

Mr. MURTHA. Do you know the timetable for the establishment of a museum at this point?

Mr. ROGERS. I do not know.

Mr. MURTHA. Check and put that in the record if you can.

[The information follows:]

NATIONAL BUILDING MUSEUM

The National Building Museum has been established in the Pension Building with a full-time director and a small professional staff occupying four offices; additional space has been requested for programs. The Museum is already conducting programs in different areas of its Congressional mandate and it will be the site for the exhibition of a selection of entries from the Vietnam Veterans Memorial Fund design competition, to open June 12. Other specific events are being scheduled. The Museum has seen to the restoration of the Courtyard Fountain and will shortly establish an information desk in the Courtyard. Officials of the Museum have held a preliminary meeting with the Commissioner of the GSA Public Building Service.

The Department of the Interior will initiate work with the Museum as soon as the integration of HCRS into the National Park Service has been completed.

Mr. MURTHA. What long-range involvement with the museum will the Department of the Interior have?

Mr. ROGERS. Certainly the Department of the Interior has an interest in a museum that portrays the building arts because it relates so closely not only to the cultural programs that are now in HCRS but also to the National Park Service's historic units under its stewardship. However until the memorandum of agreement has been worked out, I don't believe you could define the details of a long-range relationship.

Mr. MURTHA. You will have the same relationship as you have with the Visitor Center, I presume?

Mr. RITSCH. Well, we certainly hope not.

QUESTIONS AND ANSWERS FOR THE RECORD

Mr. MURTHA. This completes the questions that we have and we will leave the record open so that further questions may be asked in detail when the budget reductions are provided.

Without objection, these questions from Mr. Long will be answered for the record, as well as questions submitted by Mr. AuCoin and remaining committee questions.

[The questions and answers material follows:]

REPRESENTATIVE LONG'S QUESTIONS

Question: I am concerned that there has been a lack of consultation with the State Historic Preservation officials in assessing the impact of these drastic budget cuts in the Historic Preservation Fund. How many State programs do you estimate will be able to survive without Federal assistance?

What are the budget implications on the Department of Interior if some or all of the State programs no longer undertake the federally mandated activities of the Historic Preservation Amendments Act of 1980?

Answer: Some of State Historic Preservation programs will continue to function without Historic Preservation Fund (HPF) assistance, though at a reduced level of effort. Some State Historic Preservation Offices--we believe about four out of five - would not be maintained.

The budget impacts of HPF-assisted State preservation program termination fall into three general categories: HPF program closeout; administration of the Tax Reform Act program; and agency performance of Section 106 responsibilities. These categories are discussed below.

HPF Program Closeout

In 1982, about $1 million (not including bureau indirect costs) will be required for closeout activities. These requirements would decrease in subsequent fiscal years as development projects are closed out and State participation in the HPF program is curtailed.

Closeout activities include:

- Monitor grants to the National Trust
- Process grant amendments
- Resolve fiscal audits and recover disallowed costs
- Implement recommendations from Title VI compliance review
- Disburse grants
- Consult on uniform grants management requirements and project convenants
- Project Inspection Visits
- Review and assess program progress and project completion reports
- Oversee legal, financial, and administrative requirements for the orderly phase-out of State programs
- Assist States to maintain program and financial staff to oversee subgrants through 1983 (end date of 1981 awards)

Administration of the Tax Reform Act Program

The Tax Reform Act certification program is administered by the States and the Federal Government. State administrative expenses for Tax Act certification activities are chargeable to the HPF. Interior's administrative expenses are not supported by the HPF, but instead are charged to the HCRS Salaries and Expenses (S&E) account. In 1980, States spent approximately $816,000 ($480,000 from the HPF allocation) for operation of Tax Reform Act responsibilities; Federal S&E costs were $341,999. These figures will increase in 1981, due to the program's growing popularity (since 1977 it has generated $1.4 billion investment). The Tax Act workload for 1982 is estimated to be twice that of 1980.

Administration of this program at the Federal level, without project review now being performed by the State, is likely to increase Federal expenditures at least by the amount that is now expended by States.

Section 106 Responsibilities of Federal Agencies

Budget impacts on the Department of the Interior and other land managing agencies will be particularly significant, but all Federal agencies would have additional costs as a result of State program termination. The Department of the Interior, for example, administers large tracts of land that have not been surveyed for cultural resources. At the same time, these lands are being proposed for economic development, energy exploration, agricultural, and recreational uses. As a result, increased expenses for cultural resource surveys, evaluation, protection and treatment will be incurred as the Department fulfills responsibilities directed by the National Historic Preservation Act, the Federal Lands Policy and Management Act, and other pertinent legislation, without the benefit of current State planning guidance and data. In addition, Interior will have to perform for all Federal agencies that portion of the National Register determination of eligibility process formerly handled by States.

Question: I understand the States review thousands of Federal actions each year for impacts on historic resources. In Maryland, for example, the figure is approximately 3,000 projects. These reviews occur because of Federal mandates. And, all but a small percentage -- 12 to 14 per State -- are resolved at the State level. Can Federal agencies quickly and aggressively pick up this workload which has, until now, been jointly supported on a 50-50 matching basis by the Historic Preservation Fund and the States?

Answer: The National Historic Preservation Act Ammendments of 1980 (P.L. 96-515), authorizes Federal agencies to use program funds to meet responsibilities mandated by the Act.

Federal agencies are authorized to assume full responsibility for their Section 106 workload. In 1980, approximately $3.8 million ($1.9 million HPF) was spent by States to facilitate Section 106 activities. Federal outlays for Section 106 would likely be higher in the absence of State programs, due to the training and orientation needs and higher Federal personnel costs. These costs would be compounded by the termination of ongoing State survey and inventory activities that generate data used in the Section 106 process. In FY 1980, $24.8 million was spent on inventory activities. Federal agencies may have to incur significant new costs in developing and carrying out surveys on nonfederal lands, as well as in nominating properties to the National Register when such properties are under their control, or risk disruptions and delays resulting from an indequate data base for planning and decision making.

Question: What are the services that the Federal government will have to assume in the absence of the State program? What are the legal authorities?

Answer: The services assumed by the Federal government in the absence of state programs have been itemized in response to your questions #1 and #2 above. The relevant legal authorities are:

- National Historic Preservation Act of 1966 as amended (16 U.S.C. 470);
- Tax Reform Act of 1976, as amended (26 U.S.C. 191).

Questions Submitted by Congressman AuCoin

Funding for Historic Preservation Fund

Question: I am concerned that the Administration has frozen survey and planning grants to ten States which had not obligated all of their funds thus far this year. If I understand Mr. Rettenberg's testimony correctly, if these States had spent their money fast, they would be in great shape. So, why are those States, which are slowly and carefully obligating their funds, being penalized?

Answer: There are ten States whose survey and planning component is affected by the proposed rescission of fiscal year 1981 Historic Preservation Fund monies; in addition, many other States' acquisition and development projects are affected by the freeze. It is not a question of expending funds quickly, but rather of the freeze interrupting the application and review process for obligating grant funds. The Secretary's FY 1981 apportionment for the Historic Preservation Fund occurred December 31, 1980. HCRS established a deadline of February 17, 1981, for the submission of final Annual Work Programs. Three States failed to submit applications by the end of this 45 day period (American Samoa, Virginia, and West Virginia). The other seven States sent in their applications immediately prior to the deadline. (These States were Alaska, District of Columbia, Hawaii, Oregon, Tennessee, Washington, and Puerto Rico.) The review and processing steps required to obligate funds take ten working days for HCRS to complete. There was not adequate time to review approve, and process these applications before the Secretary directed, on February 19, that all obligations and all activities preceding obligations be suspended until further notice. This action was taken to insure maximum flexibility in implementing possible FY 1981 budget reductions in the HPF.

Question: The Administration's proposed budget reduction means the elimination of State Historic Preservation Offices if the States cannot afford to maintain them without Federal aid.

a. What effect does this elimination have on Section 106 of the Historic Preservation Act of 1966 which States that

> "the head of any Federal agency having...jurisdiction over a proposed Federal or federally assisted undertaking must...prior to the approval of the expenditure of any Federal funds...take into account the effect on the undertaking on any district, site, building, structure, or object that is included in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation...a reasonable opportunity to comment with regard to such undertaking."

1) Will lawsuits arise?

2) What will happen to the implementation of these projects? Will they be delayed?

Answer:

Budget impacts on the Department of the Interior and other land managing agencies will be particularly significant, but all Federal agencies would have additional costs as a result of State program termination. The Department of the Interior, for example, administers large tracts of land that have not been surveyed for cultural resources. At the same time, these lands are being proposed for economic development, energy exploration, agricultural, and recreational uses. As a result, increased expenses for cultural resource surveys, evaluation, protection and treatment will be incurred as the Department fulfills responsibilities directed by the National Historic Preservation Act, the Federal Lands Policy and Management Act, and other pertinent legislation, without the benefit of current State planning guidance and data. In addition, Interior will have to perform for all Federal agencies that portion of the National Register determination of eligibility process formerly handled by States.

The present section 106 process occasionally engenders lawsuits. At the present time it is difficult to assess whether removal of State involvement in the processing would lead either to more lawsuits or to delays in projects.

SHPOs and the National Register

Question: State Historic Preservation Offices are also part of the process whereby historic properties are nominated to the National Register. How will the National Register be affected if there are no State offices?

Answer: If there were no State offices, the National Register nomination process, which now relies on nomination of properties by States, would have to be completely restructured. The budget estimates for the National Register were projected on the existence of State Historic Preservation Programs. Significant changes in the administrative mechanisms and review process would be needed, requiring additional staff and funding to maintain nominating processes at existing levels.

Over the past 14 years the States have developed professional staffs and review boards which oversee the nominations submitted to each State and evaluate nominations prior to submittal to the National Register. The National Historic Preservation Act Amendments of 1980 permit the Secretary to list nominations from approved State programs with minimum Federal review, allowing the Department of the Interior to move to a role of monitoring for assurance of overall integrity for the National Register. Where there is no approved State program, the Amendments authorize direct nominations to the National Register from persons or local governments. The Amendments also allow the State Historic Preservation Officers to certify local governments to participate directly in the program if they meet specific standards.

The States now play a key role in assuring consistent application of standards and criteria for the identification, evaluation and registration of properties eligible for the National Register. In addition, the listing process would be more costly to the Department of the Interior if required notifications, now handled at the State level, have to be performed at the Federal level. Without State offices, we would lose an organized approach to the inventory and listing process based on a comprehensive Statewide survey.

ADDITIONAL COMMITTEE QUESTIONS

HCRS/NPS REORGANIZATION

Question: The National Recreation and Park Association testified before this Subcommittee about the termination of the Heritage Conservation and Recreation Service. Their testimony was as follows: "We are concerned that this precipitant action was taken without reasonable consultation with the public and with state and local participants in programs managed by the Agency." The testimony went on to say that, "We are equally concerned that the transfer of functions not excessively disrupt or terminate the most significant elements of the HCRS mission."

-- What consultation process was followed prior to the decision to terminate HCRS as a separate entity?
-- What was the reaction of those consulted prior to the action?
-- What assurances can you give us that the transfer of functions will not disrupt or detract from the HCRS mission?

Answer: The Administration did not consult with outside entities in making the budget and organizational decisions proprosed for HCRS. Quick action was required to get the Federal budget under control and this precluded any such consultation prior to the decisions being made.

The Department, HCRS and the National Park Service (NPS) are working closely to effect an orderly transfer of HCRS functions to NPS. The transfer is being accomplished with the active participation of the HCRS Acting Director, the NPS Director, and the staff of both the Assistant Secretary for Fish and Wildlife and Parks and the Assistant Secretary - Policy, Budget and Administration.

OTHER SERVICES

Question. What would the $243,000 for "other services" listed on page HCRS–55 have been used for if the funds were available?

Answer. The funds would have primarily been used for contracting to develop educational material for alternatives to Federal fee aquisition. These materials would have been directed at State and local government employees and elected officials, conservation organizations, and citizens. Alternatives to Federal fee acquisition are not well understood. Under the administration of the Federal portion of the LWCF, some funds have been requested for education materials on alternatives to Federal fee acquisition which is to be directed at Federal agency personnel.

PURCHASE OF PLAQUES FOR NATIONAL LANDMARKS

Question. Does HCRS pay for plaques for Natural Landmarks?

Answer. Yes. Since there is no direct protection for natural landmarks, the Service relies heavily on the cooperation and commitment of landmark owners, many of whom voluntarily agree to protect the landmark's nationally significant natural values. This agreement, which is non-binding and may be terminated by either the owner or the Service, entitles the owner to a certificate in recognition of this commitment. A bronze plaque may also be provided, free of charge, for display at the site, if such display is deemed appropriate by the Service after consultation with the landmark owner. The Service has awarded 46 plaques at an average cost of $128 each since January, 1978. The plaque is an incentive to the owner to continue compatible ownership practices and a constant reminder to the public that the area is a natural landmark.

REPORT ON ENDANGERED HISTORIC SITES

Question. Provide the most recent report on Endangered Historic Sites.

Answer. See attached report.

[COMMITTEE NOTE.—The report was submitted to the committee and is retained in its files.]

Question. Is HCRS required to report on the status of all national historic landmarks?

Answer. No, we are required to report only those nationally significant properties which exhibit known or anticipated damage or threat to their integrity. But, in order to prepare an accurate report, the status of all NHLs will be reviewed each year. Since cultural staff are now regionalized and new monitoring procedures have been developed, a more comprehensive, yet cost efficient, review can now be performed. However, as in fiscal year 1980, only those properties for which there is a known or anticipated threat or damage will be reviewed in depth. The in depth review requires more information gathering to determine whether the NHL should be listed in the report, and, that a status report form be filled out. This latter task, which has been very time-consuming, is now limited to those NHLs for which there is a known or anticipated damage or threat. Only 6 percent of all NHLs needed an in depth review during fiscal year 1980. (NOTE: The figure for fiscal year 1982 which reads 730 is inaccurate and should read 1,555).

Revised monitoring procedures will allow regional staff to provide assistance to those NHLs which are threatened and damaged. Severe physical deterioration and damage account for the majority of NHLs being listed on the Section 8 Report each year (accounting for 60 percent of those NHLs listed in fiscal year 1980). Insufficient funding for repairs is a second major factor cited in the report (26 percent in fiscal year 1980). The rate of recidivism for NHLs listed in the report is quite high (78 percent of those listed in fiscal year 1980 were also listed in fiscal year 1979).

Federal action has been the most successful force in protecting threatened and damaged NHLs. Private, State and local actions have been non-existent or ineffectual. Based on the annual findings of the Section 8 Report, the Historic Preservation Fund grant-in-aid program and technical assistance administered by HCRS have been the most effective means for mitigating damages to NHLs listed on the Section 8 Report.

Question. What distinguishes the role of HCRS from that of the Advisory Council on Historic Preservation?

Answer. HCRS is an agency of the Department of the Interior. Essentially it leads Federal, State, local and private activities that exist for the purpose of identifying, protecting, recording and assisting historic properties.

The Advisory Council on Historic Preservation is an independent Federal agency that exists primarily for the purpose of assuring that historic properties get fair

consideration as the Federal government goes about its business. When a historic property is threatened by a Federal action, the Council attempts to find where the public interest lies and to provide advice through its authority to comment on Federal action.

Question. Provide a list of all HABS drawings.

Answer. The Historic American Buildings Survey collection in the Library of Congress houses approximately 40,000 drawings. These drawings are indexed by state, county, and city. The list is available through the Library of Congress index, but because of the size of the collection it is not practical to provide the list here.

Question. What are the most recent criteria used to review HPF Grant Applications from States.

Answer. Enclosed are *The Fiscal Year 1982 Historic Preservation Fund Application* Procedures that were mailed to States on January 13, 1981. Please refer specifically to pages 5–7 and page 10.

U.S. Department
of the Interior

Heritage Conservation
and Recreation Service

Division of State Plans
and Grants

The FY 82 Historic Preservation Fund Application Procedures

JANUARY 13, 1981

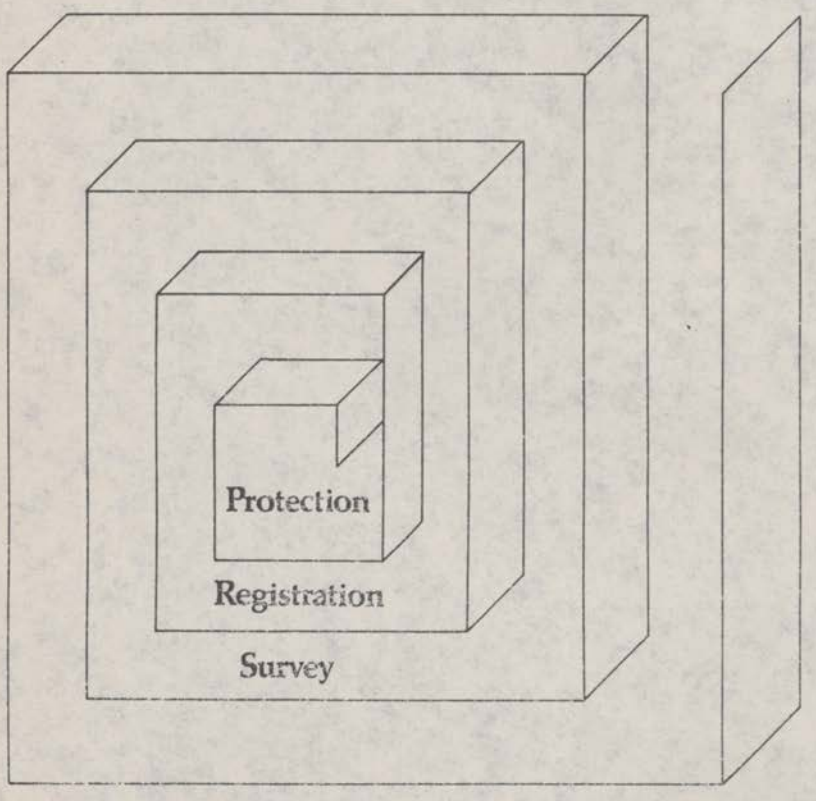


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* * * *

These procedures are presently under review by the Office of Management and Budget for conformance to Circular A-40, "Clearance of Public Reporting and Recordkeeping Requirements Under the Federal Reports Act." As a result of consultation with OMB in the development of this process, substantive revisions are unlikely.

* * * *

The National Historic Preservation Act Amendments of 1980 (PL 96-515) necessitate revisions particularly to Chapters 2, 5, and 9 of the HPF Grants Management Manual. These FY 1982 grant application procedures cover the major requirements in advance of Manual revisions so that States may initiate planning.

INTRODUCTION

The goals toward which the Historic Preservation Fund (HPF) is directed are given in the National Historic Preservation Act Amendments of 1980:

- To foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations.
- To provide leadership in the preservation of the prehistoric and historic resources of the United States.
- To contribute to the preservation of non-federally owned historic and prehistoric resources and give maximum encouragement to organizations and individuals undertaking preservation by private means.
- To encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment.
- To assist State and local government and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

The HPF is used to accomplish these objectives by means of a number of administrative tools which include uniform Federal grants-in-aid regulations, the HCRS HPF Grants Management Manual, technical assistance, comprehensive preservation planning, program performance monitoring, annual State grant application procedures, and fiscal audits. THIS DOCUMENT IS THE ANNUAL STATE GRANT APPLICATION PROCEDURES.

THESE ARE THE PROCEDURES FOR STATE HISTORIC PRESERVATION OFFICERS TO APPLY FOR MATCHING GRANTS-IN-AID FOR ELIGIBLE HISTORIC PRESERVATION PROJECTS AND PROGRAMS. Other activities funded under the Historic Preservation Fund, such as the direct grants and loans to preserve National Register properties and the matching grant-in-aid program for the National Trust for Historic Preservation, are not covered here. Guidelines for these programs will be developed separately.

As authorized by the National Historic Preservation Act of 1966, as amended, the Historic Preservation Fund assists the State Historic Preservation Officer in:

- o Administering the State's historic preservation program.
- o Conducting statewide survey.
- o Maintaining a statewide inventory.
- o Nominating eligible properties to the National Register.
- o Preparing and using a comprehensive statewide preservation plan.
- o Administering the program of Federal grant assistance for historic preservation within that State.
- o Cooperating with the Secretary of the Interior, the Advisory Council on Historic Preservation and other Federal, State, and local governments, organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development.
- o Providing public information, education, training, and technical assistance relating to Federal, State and local historic preservation activities.
- o Cooperating with local governments in the development of local historic preservation programs.

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- o Certifying local governments to conduct historic preservation activities.

- o Funding the acquisition and development of selected properties listed on the National Register of Historic Places.

- o Assisting the Department of the Interior in making grants and loans to Indian tribes and non-profit minority group participation in preservation efforts.

In developing the National Historic Preservation Act Amendments of 1980, Congress expressed particular concern about the need to document historic resources for consideration early in project planning to avoid or minimize adverse effects. Congress also focused on the need to involve local governments in preservation. State comprehensive plans should be sensitive to these issues; specifically, States are urged to emphasize the following concerns in FY 82:

- o Focus efforts on the survey of nonfederal lands projected for intensive development (e.g., energy resource exploration, surface mining, coastal zone, and urban redevelopment areas) as well as those that may contain potential National Historic Landmarks.

- o Enhance local government capability to identify, evaluate, and protect cultural resources, in order to promote the preservation of historic properties as an important consideration in community development.

APPLICATION CALENDAR

- o FY 1982 State planning estimate and sample application provided by HCRS.....by May 1, 1981

- o State applications sent to HCRS Regional Office via certified mail.....by October 15, 1981

- o State applications reviewed by HCRS Regional Offices.....by November 15, 1981

- o Notice by HCRS of State grant award.....by 30 days after enactment of the appropriation. This notice is not a formal authorization to obligate funds. States are formally authorized to obligate funds when an authorized HCRS official signs the State's SF 424.

- o FY 1982 End-of-Year Report submitted to HCRS.....by October 15, 1982

COMPLETING THE APPLICATION

The State Application consists of the following four parts:

I. STANDARD FORMS AND CERTIFICATIONS

- Transmittal letter approving the State's HPF grant application signed by the Governor.
- A single Standard Form 424.
- Application for Federal Assistance (OMB 80-RO 186)--Part II (Project Approval Information), Part III (Budget Information), and Part V (Assurances).

  The assurances include both those for nonconstruction and construction projects (Chapters 6 and 8, respectively in the HPF Grants Management Manual).

  The forms accompanying this application will be slightly revised by HCRS to show use of the 70/30 matching ratio for survey and inventory and the 50/50 matching ratio for other activities.

  Clarification is given in the "Definitions" section for survey and inventory activities covered by the 70/30 matching ratio.
- DI 1350-Civil Rights.
- State A-95 Clearinghouse comments.

II. FY 81 END-OF-YEAR REPORT

Grantees must document results achieved in FY 81 through the following forms:

- Attachment A
- Attachment B-1
- Attachment B-2
- Statement of Technical Assistance Needs

For the FY 81 Attachment A, the "Mid-Year Progress Report" is no longer required; States may use both columns for the End-of Year Report. For each FY 81 Grantee Minimum Requirement (GMR) and State Objective, list all supporting activities and indicate with an "*" those considered as essential to accomplishing the GMR or State Objective. For each supporting activity be sure to report both starting and completion dates, and results for each GMR and State Objective. These two items are essential for evaluating each State's past performance.

Attachments B-1 and B-2 should be completed for the amount of the grant award obligated within the appropriate fiscal year.

Technical assistance needs from HCRS should be specifically described.

III. PROGRAM OVERVIEW

The program overview is a brief (approximately 3-10 pages) retrospective and prospective statement of the State's preservation program and of the means by which the State will continue to carry out the program of the National Historic Preservation Act of 1966, as amended.

The statement must include:

- A description of the major accomplishments in FY 81 that the State wishes to highlight as helpful to other States or as useful in the Federal budget process.

- An assessment of problems and needs in each of the three program elements--survey, registration, and protection--documented by statistical or other evidence and discussed

in relation to broader State issues (e.g., Statewide comprehensive planning as it relates to energy resource exploration, community/economic development, minority and ethnic group historic preservation issues, etc.) that affect preservation. In assessing problems and needs for the three program elements, and in discussing how these needs will be met (see below), States should refer to the responsibilities of SHPOs specified in Section 201(a) of the National Historic Preservation Act Amendments of 1980 (PL 96-515).

- A discussion of how these needs will be met which cites supporting activities that the State considers essential to addressing these needs.

IV. ATTACHMENT A FOR FY 82

Fill in the required level of effort data for Grantee Minimum Requirements 1-6 (included in the forms section of this document). List all supporting activities for each Grantee Minimum Requirement. These activities must be numbered in order of priority. Those supporting activities cited in the program overview must be preceded by an "*".

For Grantee Minimum Requirement 5, refer to "Important Program Management Information" section for definition of the units to be reported.

* * * *

A SAMPLE GRANT APPLICATION WILL BE PREPARED, IN CONSULTATION WITH THE NCSHPO GRANTS MANAGEMENT COMMITTEE, AND WILL BE SENT TO ALL STATES BY MAY 1, 1981.

FY 82 END OF YEAR REPORT

This report, which is not due until submission of the FY 83 application, requires completion of the following forms:

- Attachment A
- Attachment B
- Statement of Technical Assistance Needs

For Attachment A, use the column headed "End-of-Year Report." For each supporting activity, indicate the completion date; and report the results for each Grantee Minimum Requirement. The completion dates and report of results are necessary for evaluating each State's past performance.

Attachment B is self-explanatory.

Technical assistance needs from HCRS should be specifically described.

SUBMITTING THE APPLICATION

Applicants should assemble their application package in the following order:

- o Standards Forms and Certifications
- o FY 81 End-Of-Year Report
- o FY 82 Program Overview Statement
- o FY 82 Attachment A

Applicants must send two complete original application packages to the appropriate HCRS Regional Office.

States also are responsible for forwarding copies of their application to the A-95 Clearinghouse and, if applicable, to the State Coastal Zone Management Agency.

COMPLETE APPLICATION PACKAGES MUST BE SENT TO THE APPROPRIATE HCRS REGIONAL OFFICE BY CERTIFIED MAIL DATED BY THE POSTAL SERVICE NO LATER THAN OCTOBER 15, 1981. APPLICATIONS DATED AFTER OCTOBER 15 WILL NOT BE ELIGIBLE FOR THE COMPETITIVE (PAST PERFORMANCE) PORTION OF THE ALLOCATION.

REVIEWING THE APPLICATION

Each State's application will be reviewed by cultural program staff in the appropriate HCRS Regional Office.

The review will evaluate past performance for the previous fiscal year and examine the Program Overview Statement, Attachment A, and all standard forms and certifications.

Past performance will be based upon the percent of FY 81 Grantee Minimum Requirements and State Objectives completed.

A Grantee Minimum Requirement will be considered complete if at least 75% of its results as noted on Attachment A are attained and supporting activities designated as essential are accomplished. However, because FY 81 Grantee Minimum Requirements 1, 2, 5, 6, 8, and 9 are not appropriate to past performance evaluation, they will not be used for this purpose.

A State Objective will be considered complete if at least 75% of its supporting activities are completed, including those designated by the State as essential.

The Program Overview and Attachment A will be reviewed for internal consistency and for conformance with HCRS Application Procedures. The results of this review will serve as the basis for HCRS comment and recommended modifications to the State's program for FY 82; such modifications may be made a condition for grant approval.

Standard forms and certifications will also be reviewed for completeness. Incomplete forms or missing certifications must be completed prior to grant approval.

ALLOCATING GRANT FUNDS TO STATES

Allocation Formula

The Historic Preservation Fund allocation formula employs three factors describing need:

BASIC PROGRAM ALLOCATION. This factor ensures the maintenance of a qualified staff, review board, and basic services necessary to retain program approval as described in the National Historic Preservation Act Amendments of 1980.

MANAGEMENT. This factor is used to provide incentives for enhancing State grants management as expressed by the State's expenditure rate.

COMPETITION (Operations). This factor is used to provide incentives for State program development as expressed in evaluation of past performance.

The precise weighting and use of each factor in FY 82 will be determined by Secretary of the Interior.

IMPORTANT PROGRAM MANAGEMENT INFORMATION

The FY 82 HPF Application Procedures are based on the National Historic Preservation Act of 1966, as amended, and on OMB Circular A-102. This circular sets forth the procedures for monitoring and reporting program performance which are designed to place greater reliance on grantees to manage the day-to-day operations of grant-supported activities. The relationship between these procedures and the FY 82 HPF Application Procedures is outlined below.

Monitoring. OMB Circular A-102, Attachment I, (2), requires that all grantees "monitor their performance under grant supported activities to assure that time schedules are being met, projected work units by time periods are being accomplished and other performance goals are being achieved." This review shall be made for each Grantee Minimum Requirement and supporting activity included in the approved application. The End-of-Year Report documents these monitoring activities.

Grantee Minimum Requirements. OMB Circular A-102, Attachment M, requires that grantee funding requests for continuing grant programs "discuss accomplishments to date and list in chronological order a schedule of proposed or anticipated accomplishments." The Grantee Minimum Requirements document proposed or anticipated accomplishments resulting from the funding request. The FY 81 End-of-Year Report documents accomplishments for that fiscal year.

Supporting Activities. OMB Circular A-102, Attachment I, requires that grantees monitor projected work units by time periods. STATES MUST IDENTIFY SUCH WORK UNITS (SUPPORTING ACTIVITIES) FOR EACH GRANTEE MINIMUM REQUIREMENT ON ATTACHMENT A.

Amendments. Chapter 11 (sections D and E) of the HPF Grants Management Manual outlines the process for amending an approved Annual Application. Pursuant to condition "1(a)" in section D for

Survey and Planning and "1" in section E for Acquisition and Development, a substantial change in the scope is defined as a 25% or greater variation in the results planned for any approved Grantee Minimum Requirement, or a change in essential supporting activities proposed for a Grantee Minimum Requirement.

Open Project Selection. The requirements applicable to the FY 82 HPF Application will be issued shortly. They are essentially those previously forwarded for comment to all States except that the implementation dates will be somewhat extended.

The guidelines for implementing Title VI of the Civil Rights Act of 1964 also will be issued shortly. Title VI specifies that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination with respect to federally assisted programs. The guidelines will be issued in draft form and, at the present time, do not require a pre-award report. Through the guidelines and the Open Project Selection Process requirements, it is expected that States will give appropriate emphasis through grant program operations to the contribution of minorities to history, prehistory, architecture, and culture.

Project Notification and Review. In order to provide notification of State activities to Congressional offices and to A-95 Clearinghouses, and to assure project conformance to the Section 106 Programmatic Memorandum of Agreement between the Advisory Council on Historic Preservation and HCRS, the following procedure will be used, although these are not directly part of the HPF grant application process.

1. Public Notification: For all project subgrants (including Survey and Planning and Acquisition and Development), a Standard Form 424 shall be submitted to the appropriate HCRS Regional Office. The "Remarks" section of the SF 424 shall include basic summary information (i.e., what, when, and how).

2. Project Review:

   * Prior to award of Aquisition or

Development project subgrants by States in expanded participation, HCRS project review will be based on the SF 424 submitted for purposes of "Public Notification" described above.

° Prior to award of Acquisition or Development project subgrants by States in regular participation, HCRS project review will be based on the SF 424 submitted for purposes of "Public Notification" plus plans and specifications and the 16 point application contained in Chapter 9 of the HPF Grants Management Manual.

Grantee Minimum Requirement 5. Grantee Minimum Requirement 5 has two parts: 5a relates to the estimated work load for project reviews, and 5b relates to recording the final status of federally sponsored or assisted projects operating within the State; 5a has to be completed for the FY 82 Application and updated for the End-of-Year Report; 5b is completed only as part of the FY 82 End-of-Year Report.

In part 5a the unit of measurement is the number of reviews, not the number of projects. This recognizes the fact that many projects receive multiple reviews during the compliance process. Part 5a also allows the State to list the number of reviews associated with State and local projects that must comply with other environmental and preservation related laws.

In part 5b, the unit of measurement is the project. When completing Grantee Minimum Requirement 5b, no project should be counted more than once, even though it is possible that one project may have differing effects on different properties. The types of compliance actions are listed below:

No Properties in Impact Area: Projects that conclude the compliance process with a finding that no properties meeting National Register eligibility criteria (or already listed on the National Register) are located within the impact area of the project.

No Effect on Properties: Projects that conclude the compliance process with a finding of no effect on properties that are or may be located within the impact area of the project.

No Adverse Effect: Projects which the SHPO finds will not adversely affect properties (see definitions and criteria in ACHP regulations 36 CFR 800).

Conditional No Adverse Effect: Projects which the SHPO finds will not adversely affect properties, but only because of specified conditions which the Federal agency either proposes or agrees to. For example, it includes all "no adverse effect" findings contingent upon satisfactory recovery of data present in archeological properties.

Adverse Effect: Projects that the SHPO determines will adversely affect properties.

Memoranda of Agreement: All Advisory Council Section 106 Memoranda of Agreement signed by the SHPO, and all proposals for such memoranda in which the SHPO concurs in writing.

DEFINITIONS

Annual Application

For purposes of the Historic Preservation Fund (HPF) grant program, the State Historic Preservation Officer prepares and maintains a comprehensive statewide historic preservation plan as required by Section 103(a) of the National Historic Preservation Act of 1966, as amended. Implementation of this plan is expressed in the State's Annual Application which describes eligible activities for which HPF grant assistance is requested.

Program Elements

Three general program elements define the process of historic preservation:

SURVEY: The process of recognizing and locating all historic properties.

REGISTRATION: The process of determining the important historic properties among those identified.

PROTECTION: The process of determining and implementing appropriate actions to preserve and enhance those historic properties considered important.

Administrative Functions

Two main functions describe the means by which historic preservation activities are accomplished.

ADMINISTRATION: Planning, organizing, staffing, coordinating, controlling, and monitoring supporting activities that accomplish program objectives.

OPERATIONS: Implementing supporting activities that accomplish program objectives. Together, the program elements and the administrative functions form the framework to determine eligible activities.

Eligible Activities
Activities that are defined by the scope of at least one program element and one administrative function; an ineligible activity is one which can not be encompassed by the scope of at least one program element and one administrative function. Eligible activities must conform to the requirements of the HPF Grants Management Manual.

Supporting Activities
The major work units by which Grantee Minimum Requirements are accomplished. For purposes of completing the Program Overview and Attachment A do not--except for GMRs 4 and 5--refer to routine administrative and operational tasks performed in support of specific actions. For example, do not cite "Preparation of a scope of work for a request for proposals (RFP)." Instead, refer to specific actions that imply more significant program outcomes (e.g., Survey of Jones County; Training Workshops for Highway Department's Route Location Division; Subgrant for Downtown Market Study in Kingsville; Multiple Resource Nomination for Tylertown).

Indirect Costs
Expenses not directly associated with specific operations, products, or services associated with the daily administrative and operational functions for historic preservation survey, registration, and protection.

Technical Assistance
Providing programs, activities, and services in one or more of the following areas: transferring information; developing skills; providing formal comment; and developing and transferring products.

Minority
A member of one of the following groups: 1) Black, not of Hispanic origin; 2) Hispanic; 3) Asian or Pacific Islander; or 4) American Indian or Alaskan Native. More detailed definitions of these groups may be found in 42 CFR 402, "Coordination of Enforcement of Non-discrimination in Federally Assisted Programs."

Survey and Inventory (for purposes of 70/30 matching authority).
The purpose of the 70/30 matching authority is to accelerate activities leading to the use of historic

resource data in project planning. Consequently, activities eligible for 70/30 funding include those chargeable to locating historic properties and evaluating their significance, comprehensive historic preservation planning to set preservation priorities (cf. HCRS Publication 50: Resource Protection Planning Process), establishing and operating automated systems to facilitate retrieval and use of survey data, and technical assistance specifically directed at expanding and accelerating the competent identification of historic properties.

The authority does not apply to review and compliance activities, preparation of architectural plans and specifications, technical assistance except as noted above, or any other activity not directly leading to expanding the capability for protection of historic properties to be represented in project and development planning. In using this authority, it is expected that States will maintain their total current financial matching matching commitment to the Historic Preservation Fund Program.

Minimum Documentation Level of Survey
Location, type, condition, and significance, or identification of research needed to determine importance for any property.

Reconnaissance Survey
Small-scale archival or field research, relative to the overall complexity of the target area and its resources, designed to provide a general impression of an area's architectural, archeological, and historical properties and their values for preliminary planning or predictive modeling purposes.

Intensive Survey
Systematic, detailed field inspection performed or supervised by specialists able to fully identify the architectural, archeological, and historical properties of an area, to evaluate National Register eligibility and to assess preservation needs and potentials.

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Salaries and Expenses Planning

Question: At page 13, you talk about continuous update of the data base needed for the development of the Nationwide Outdoor Recreation Plan.

-- How do you go about the continuous update?
-- Is there any danger that the continuous update process is too near term oriented and neglects long range objectives?

Please give the Committee some specific examples of the users and uses of the Nationwide Recreation Assessment.

Answer: The data base includes measures of recreation activity and resources as well as social and economic changes which impact recreation. The only data specifically collected for the 1983 Assessment will be the 1982 Nationwide Recreation Survey. Data for the Assessment also come from secondary sources, such as federal and private agencies. Updating occurs as often as the sponsoring agency or organization accomplishes it, which creates a systematic process for accessing the data. A computerized system to make the data more available is being planned to facilitate the updating process. Therefore, comparable data will be collected over time, easily accessed, and trends methodologically documented.

Data base collection and maintenance allow the use of quantitative information to complement more subjective, qualitative projections of recreation trends obtained from professionals and task force work. The continuous data process preserves data over time to measure progress toward long-term objectives. From a continuously updated data base, recreation trends are established and projections developed and linked with long-term objectives.

The Assessment is used as an information base in the development of the Action Program. It is also used by federal agencies in helping to carry out their recreation resources responsibilities. Among the federal agencies that utilize recreation trend information are the Forest Service in the RPA Assessment, Fish and Wildlife Service, Bureau of Land Management, National Park Service, Water and Power Resources Service and the Army Corps of Engineers. It is also used by university professors and private consultants in the recreation field.

1982-83 Action Program

Question: There is a decrease of $20,000 in Nationwide Recreation Planning from combining the 1982 and 1983 Action Programs.

-- What is the impact of the stretch out?
-- What other areas did you consider stretching programs to achieve savings?

Answer: The impact of stretching out the Action Program over a two-year period will be less visibility for recreation issues occurring in 1983, but more action on the issues selected in 1982. This two year cycle will allow effective work programs for resolving selected issues to be developed and coordinated among affected Federal agencies. No other areas were considered in stretching programs to achieve savings, as a combined 1982-83 Action Program had the clearest benefits for the overall nationwide recreation planning process.

Question: At pages 19 and 20 of the justifications you state, "We will participate in four rural community development projects which emphasize capacity building and self-help skill development." Please explain what your objective is in these community development projects.

Answer: Our objective in participating in rural community development projects would have been to enhance the recreation benefits for rural residents by providing recreation planning assistance to project planners and developers. This assistance would be provided through our Washington and Regional Offices. The Red River waterway project is one such example.

Water Resources

There will be no requests for a Water Resources program in FY 1982.

Question: What actions, if any, do you plan to cut back the program this year?

Answer: We will be providing for the orderly termination of water resource program functions as specified in Secretarial Order 3060, dated February 19, 1981.

Question: Since the program is funded through FY 1981, how can you legally cut back the program this year?

Answer: In accordance with the need to reduce governmental expenditures and terminate Federal functions that are unnecessary or duplicative, activities within the Water Resources Program will be terminated or reorganized within existing Departmental programs. This action is consistent with the authorities of the Secretary contained in Reorganization Plan Number Three of 1950, 64 Stat. 1262. Where appropriate funds programmed for these activities will be transferred to organizational units performing the same function. Otherwise, funds no longer necessary for these activities will be reprogrammed, subject to Congressional approval.

According to the February 19th press release, the Park Service and the Fish and Wildlife Service and Water and Power Resources Services have activities similar to that of the Water Resources program of HCRS.

Question: What existing expertise do these agencies have to provide technical assistance to urban communities for water front renewal that incorporates both recreation and preservation activities?

Answer: A Memorandum of Understanding (MOU) was signed by representatives of 18 Federal agencies and four nonprofit organizations, including the Heritage Conservation and Recreation Service and the National Park Service, on November 1, 1979. The MOU established an Urban Waterfront Action Group (UWAG) and outlined several tasks to encourage and enhance waterfront revitalization. This group is still in existence, even though the momentum has diminished. Interest in waterfront revitalization is expected to continue. Local Action Groups, established as a result of the national effort, are expected to continue. One local effort, the Washington Area Waterfront Action Group (WAWAG), is chaired by HCRS and represented by NPS. The Division of Park

Planning and Environment in the National Park Service will continue as a member of UWAG and the National Capital Region will continue as a member of WAWAG. The Fish and Wildlife Service also has some expertise in this area. They are the lead agency in the preparation of a report, "Planning for Urban Fishing and Recreation," soon to be published.

While the urban waterfront activity of HCRS is being terminated, expertise in the areas of recreation and preservation activities will be available in the NPS with the transfer of other HCRS functions. Where necessary this expertise can be used in cooperation with other Federal agencies to address waterfront renewal problems.

The budget justification at page HCRS-30 lists several examples of communities that have used Clean Water projects as an opportunity to expand recreation opportunities. It goes on to say that "such innovative multiple uses are increasing as State and local agencies become aware of the recreation opportunities that can be provided."

Question: Now that State and local agencies are aware of the opportunities, what other roles do you see HCRS performing in the Clean Water area?

Answer: The statement did not mean to imply that all State and local agencies are aware of the opportunities. Aside from continuing this activity, HCRS would have provided direct planning assistance to communities which would have enabled them to adopt the innovative approaches used by other communities.

There are no people associated with the request for Recreation at Hydroelectric Plants.

Question: How is this program managed without any people?

Answer: It would have used less than full-time personnel and funded planning assistance products produced under contract.

Question: What will the $94,000 be used to accomplish?

Answer: The $94,000 would have been used for salaries for other than full-time personnel and for the preparation of handbooks and other planning assistance material to help hydroelectric power licensees fulfill the Federal Energy Regulatory Commission's recreation requirements.

Question: How does this program tie in with the licensing of hydroelectric plants by the Federal Energy Regulatory

Commission?

Answer: Fulfillment of the recreation requirement is an integral step in the licensing process required by the Federal Energy Regulatory Commission. The program provides planning assistance during the pre or relicensing process. It also assures coordination of programs of related Federal, State and local recreation agencies and groups.

Question: What does HCRS do that the Federal Energy Regulatory Commission does not do in assuring recreation facilities at hydroelectric projects?

Answer: The Federal Energy Regulatory Commission does not provide planning assistance or play a coordinating role.

Question: Why should we cut out this activity at a time when hydroelectric resources are once again being emphasized as a renewable energy resource?

Answer: The Interior Department will continue to provide, primarily through the National Park Service, recreation and cultural planning assistance of a general nature, some of which will be helpful to hydroelectric power license applicants as they seek to fulfill the Federal Energy Regulatory Commission's recreation requirements.

Resource Area Designation

Question: Two objectives of the Resource Area Designation program are: (1) assure the maintenance of private ownership and private sector shoreline development to the maximum extent possible; and (2) assure adequate public access to the nation's rivers and their resources. These two objectives appear to be contradictory. How do you reconcile these two objectivies?

Answer: A first step is to determine what is required for adequate public access to the Nation's rivers. Then private landowners (through existing means such as tax incentives) should be encouraged to donate scenic and access easments towards fulfilling these determined requirements. Only as a last resort should public purchase of land to meet the remaining unfulfilled requirements be considered.

Question: Another objective of the Resource Area Designation program is to "reduce the need for direct Federal acquisition, ownership and management of rivers by assisting State, local, corporate, and private entities in assuming primary responsibility for river conservation". How do you plan to achieve this objective? What successes have you had in accomplishing this objective?

Answer: The objective to reduce Federal involvement in river preservation can be achieved by transferring the knowledge and experience gained in other areas (such as waterfront redevelopment and historic preservation) to river conservation interests. Also, advising States and local entities on establishing river conservation systems can achieve this objective. There is a wide range of conservation strategies and tools that have been applied successfully to other objectives and are potentially applicable to river conservation (e.g., purchase and sell back with conservation restrictions, formation of private non-profit development corporations, tax benefits, and bargain sales).

The States of New York, Delaware and Maine have recently requested and received assistance in river conservation programs. Successful examples of protected rivers with a great degree of private involvement in ownership or management include the Allagash in Maine, the Blackfoot in Montana, and the Little Miami in Ohio.

Question: The Resource Area Designation program has the Wild and Scenic Rivers activity as a responsibility. How does the Wild and Scenic Rivers program relate to the overall national water policy? How far along are you in reviewing the nation's system of rivers for identification of wild and scenic rivers? When do you expect to complete the study?

Answer: The Wild and Scenic Rivers Program's relationship to the overall National Water Policy is specified in Section 1(b)

of the Wild and Scenic Rivers Act (Public Law 90-542):

> "The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes."

The Nationwide Rivers Inventory is scheduled for completion in Fiscal Year 1981.

Question: A GAO report concluded that the process for studying and adding rivers to the national wild and scenic rivers system is too slow and costly. What are the generic and administration changes you are proposing to improve and strengthen the Wild and Scenic Rivers Act and program?

Answer: No generic and administrative changes are being proposed at this time. However, we are reviewing alternatives that would encourage States to participate in the study process and to develop State scenic river programs. In addition, alternatives that would encourage local and private actions in river preservation and reduce public costs are being reviewed and analyzed.

Man and the Biosphere

Question: What is the extent of HCRS involvement in the Man and the Biosphere (MAB) program?

Answer: The HCRS Associate Director for Natural Programs serves as a member of the Directorate for MAB Project-8 on Bioshpere Reserves. In addition, HCRS is a member of the MAB Consortium for the study of Man's Relationship with the Global Environment, an interagency consortium which provides support to research projects based on the objectives of MAB and the programmatic needs of the participating federal agencies.

Question: How much do you have budgeted for this activity for FY 1981 and FY 1982?

Answer: In addition to allotting approximately two work months of professional (GS-11/12) staff time to MAB-related activities in FY 1981, HCRS contributed $60,000 to the MAB research Consortium. There are currently no specific requests for MAB-related activities in the FY 1982 budget request, although it is anticipated that about two work months of professional staff time will again be devoted to this activity.

Natural Landmarks Program

Question: The workload data for the Natural Landmarks program shows quite a few variations from year to year. Please explain the variations for (1) reports on the integrity and condition of natural landmarks; (2) natural region study contracts monitored; and (3) evaluation reports of potential National Natural Landmarks undertaken.

Answer: (1) The FY 1980 workload data for "reports on the integrity and condition of natural landmarks" was based on the fact that of the 511 designated landmarks at the time the review took place, the Service reported on the integrity of 302 or almost 60 percent. Limits on funding, manpower and travel have precluded obtaining status reports on all designated landmarks. The workload factors for FY 1981 and 82 were computed estimating that reports on the integrity of approximately 70 percent of a total of 590 landmarks would be obtained. The increase from 60 to 70 percent is expected as a result of intiatives to use other public and private organizations to assist the Service in monitoring the status of natural landmarks.

(2) The variation in workload data for "Natural region study contracts monitored" by the Service reflects the length of the studies which span more than one fiscal year and the number of study contracts still requiring oversight. The decrease in numbers represents study contracts completed. For example, in FY 1981, 27 study contracts will be monitored; in FY 1982, 15 study contracts will be monitored. The difference represents 12 studies to be completed by the beginning of FY 1982.

(3) The decrease from 225 to fifteen evaluation reports of potential National Natural Landmarks undertaken is the result of a decision to decrease the number of new reports undertaken by contract in order to fund greater Regional Office involvement in the program. This decision was made after review of a backlog of over 1400 potential landmarks showed that the administration of the whole program could be significantly improved by expanding the responsibilities of the Regional Offices.

National Historic Landmark Boundaries

Question: You have requested a $345,000 increase for identification and designation of National Historic Landmarks. Why do you need this increase?

Answer: The National Historic Preservation Act 1980 Amendments direct that boundaries be established for National Historic Landmark (NHL) districts for which no boundaries currently exist, and that these boundaries be published in the "Federal Register" and submitted to Congressional Committees prior to approval. This will affect an estimated 70 NHL districts which are currently without precisely defined boundaries. The boundary requirement is a new responsibility, unlike activities now being carried out under this program and funds to establish boundaries for NHLs were not included in the FY81 budget estimate. This new requirement cannot be met with existing funds.

Question: Will the $345,000 allow completion of boundaries for all National Historic Landmark districts?

Answer: No. The $345,000 requested is expected to be sufficient to begin boundary studies on all districts, and we will complete as many as possible in FY82. However, these districts are the most complicated NHLs and include large urban districts, archeological districts, and remote areas such as the Gambell Sites on St. Lawrence Island off the coast of the Northwestern District of Alaska. Therefore, we do not expect to complete processing of boundaries for the 70 districts in FY82. Cost for each NHL district boundary study will include travel, professional and clerical staff salary, and the costly notification process. We have already received very high cost estimates for some of the larger and more remote districts. The boundary project for NHLs will be on-going for several years since the 70 NHL districts are among some 300 NHLs for which boundaries must be estimated, and for which no other funds have been allocated in FY82 to do boundary studies.

Question: Please explain the increase by the specific object classes.

Answer:

Personnel compensation and benefits	$ 90,000
Travel and transportation of persons	45,000
Other services	94,000
Common Program Services	116,000
Total	$ 345,000

Tax Study

Question: The National Historic Preservation Act Amendments of 1980 require the Advisory Council on Historic Preservation to perform a study of the preservation tax provisions. What is HCRS doing to assist in this study? Is this study using any of the information from a Congressional Budget Office study on the same subject?

Answer: HCRS is particularly interested in working with the Advisory Council on the tax study mandated by the 1980 law. HCRS staff have already participated in two meeting with the Council on the study; discussion centered on data kept by HCRS on rehabilitation projects; on the scope of the proposed study; and past analyses that have been undertaken, including the January 12, 1981, Congressional Budget Office inhouse memorandum on the effect of the Senate Finance Committee Tax Bill on existing preservation provisions. (The CBO study is just one of many that have been undertaken since the provisions became law in 1976; the National Bureau of Standards, the Urban Institute, National Trust and Department of the Interior have all conducted studies on various, limited aspects of the provisions.)

It is our understanding that the Advisory Council has requested a supplemental appropriation to carry out this task; at this point they have not yet prepared an indepth outline or selected a contractor. HCRS remains ready to assist the Advisory Council as they proceed with the study.

HABS Recording Teams

Question: The Historic American Buildings Survey program is being put into the regional structure of HCRS during FY 1981. As a result you are predicting that there will be an initial decrease in recording teams and transmittals (HCRS-96).

Why should the new regional nature of the program result in a decrease in the number of recording teams fielded?

Answer: The cultural programs have just been regionalized, spreading the same amount of money and staff over nine offices rather than one. It is our expectation that there will be an initial decrease in HABS recording teams until the regional offices are fully staffed and until the regional staffs gain the background necessary to undertake these projects.

Ozette Village Archeological Site

In the Interagency Archeological Services program, there is a reduction of $225,000 attributed to discontinuance of archeological investigation of the Ozette Village Archeological Site.

Question: Why are you discontinuing this work?

Answer: Over the past 11 years the Department of the Interior has spent approximately $1,680,700 on archeological investigation of the Ozette Village Archeological Site. While this is an important site and much has been learned, the Federal Government has already made a considerable investment in this property. The $225,000 has therefore been added to the National Register subactivity to undertake studies to establish boundaries for National Historic Landmark (NHL) districts that do not now have boundaries. The urgent need for this activity was highlighted in the National Historic Preservation Act Amendments of 1980. While the $225,000 could have been utilized by IAS, the NHL boundary studies is a high priority activity that affects many significant properties, including archeological properties, in 70 NHL districts Further review is now being undertaken with the National Park Service on the status and the future of the Ozette project.

Question: Since you are discontinuing this work, what are you doing with the remainder of the money that has been part of the base in the Archeological Services program?

Answer: The Ozette add-on was $225,000. The remainder of the IAS base would be used to conduct the program described in the budget justifications.

Environmental and Compliance Review

Question: The Secretary has announced the dissolution of the Environmental and Compliance Review function of HCRS. HCRS has been the lead agency in preparing Interior's comments on transportation environmental statements.

What agency in Interior will now handle this function?

Answer: The National Park Service in most cases.

Question: How can we be assured that recreation and cultural resources will be properly addressed in the review of projects?

Answer: This will require providing sufficient environmental review personnel in the National Park Service staff in Washington and the regions to screen and comment on transportation environmental impact statements from the standpoint of statutory recreation, historic and archeologic preservation, and natural landmarks perspectives. Professional expertise in all three areas is required. FTP ceilings associated with this function in HCRS will be transferred to NPS to continue this activity.

Question: What is the average time it takes to review the transportation environmental impact statements?

Answer: When HCRS has not been the lead agency in transportation EIS reviews, average review time has been one to two days. When HCRS has been lead agency, average time has been one week. HCRS is lead agency on approximately 90% of all transportation reviews.

Question: What percentage of those reviewed are rejected or result in delay of a specific project?

Answer: No EISs are rejected. All are reviewed within the standard time required by Departmental and CEQ regulations, with minor procedural exceptions. We have no knowledge that our reviews have delayed specific projects.

Railways Conversion

Question: The FY 1981 budget justification shows the Railways Conversion program being completed in FY 1980. Now, the FY 1982 justification shows over $3 million being spent in FY 1981. What has held up the completion of this program?

Answer: Completion of the program has been significantly delayed in a number of cases due to the complexity of ownership involving land to be acquired. Nearly every right of way involves a multitude of interests requiring considerable research and review to insure sufficient transferability. This has increased the time necessary to prepare adequate appraisals and satisfactorily perform title searches.

Question: When do you now expect to complete it?

Answer: Of the nine projects funded, six are substantially complete, one is proceeding satisfactorily, and two are making slower progress than anticipated.

While the remaining projects may not be fully completed by the end of FY 1982, they will be monitored carefully to insure successful completion.

Question: Are there other projects of this nature contemplated?

Answer: Section 403 of P.L. 96-448, the Staggers Rail Act of 1980, amends Section 809(b) of the Railroad Revitalization and Regulatory Reform Act of 1976 and authorizes $10,000,000 for fiscal years 1981, 1982 and 1983. However, no funding is being requested from Congress.

Common Program Services

Question: You have an increase of $180,000 for accounting under the Administrative Services program. What is the reason for this increase?

Answer: The $180,000 increase was for the design, development and installation of a GAO-approvable accounting system. Because of the transfer of HCRS' accounting function to NPS, a new system is now unnecessary.

Question: The cost increase of payroll services is explained in the justification as being caused by a Department directed shift from the Bureau of Mines to the Water and Power Resources Service. What increases in service or efficiency do you anticipate to justify costs going from $30,000 to $50,000?

Answer: WPRS would have provided much more pay information to employees, and personnel actions would have become automated. Two fewer employees would have been needed by HCRS. However, this increase in funds is now unnecessary, due to transfer of HCRS payroll functions to NPS.

Question: The FY 1981 budget justification justified only 5 Senior Executive Service (SES) positions. Now, the FY 1982 justification justifies 12 for both FY 1981 and FY 1982. Why is there a need to more than double the number of SES positions?

Answer: The initial budget request for FY 81 did not include HCRS' 7 Regional Director positions. These positions were included in SES as of July 1981. The inclusion of our Regional Director positions in SES is in agreement with similar positions within the Department of the Interior.

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Question: There is an overall increase in Common Program Services in FY 1982. Yet the data processing system is described as "permitting the streamlining of internal processes to reduce costs and improve control". Please provide the Committee with examples of how this system has reduced costs.

Answer: The graph on the next page clearly shows the cost savings to the Heritage Conservation and Recreation Service (HCRS) from the 1980 acquisition of the minicomputer system. Until the acquisition of the minicomputer equipment, HCRS relied solely on a time-sharing arrangement with the National Institutes of Health (NIH) Computer Center. The cost of this service was $140,000 in 1980. Had we not made the minicomputer acquisition, the NIH estimate would have been $260,000 for 1981; $320,000 for 1982; and $425,000 for 1983. In subsequent years, the estimates shown for NIH costs are based on an eleven percent inflation rate and a twenty percent increase for new systems.

So far, over fifteen applications have been installed on our agency-owned hardware and our timesharing costs for 1981 are now estimated at $65,000 - a decrease of $75,000 from our 1980 timesharing bill.

The comparative costs shown on the next page do not include costs for telecommunications and for terminal equipment. Given our agency-wide objective to reduce the amount of paper manipulation and to get more appropriate and accurate information to managers on a more timely basis, these costs would have been incurred regardless of the acquisition decision. In fact, the telecommunication costs would likely be higher had we stayed with timesharing since we would have been required to use a more expensive inter-active capability than is the case with our own in-house system.

The life of our minicomputer system is estimated at seven years. In that time we will have saved over $2,000,000 by following through on our minicomputer acquisition decision instead of remaining with the timesharing service.

The Heritage Conservation and Recreation Service's Advanced Information System (AIS) not only saves money. It has improved managers' control over operations and has provided timesavings which personnel can apply to mission-related matters. The applications and information are available to the manager via terminal any hour of the day and night - seven days per week. There is no middle-man to go through, so there is less chance for misinterpretation. Following are a few of automated systems that are available through AIS.

Resource Allocation and Management: Permits managers to track budgets and obligation rates by program and by organization unit. The same information may be reported by object class for required reporting to other agencies and institutions.

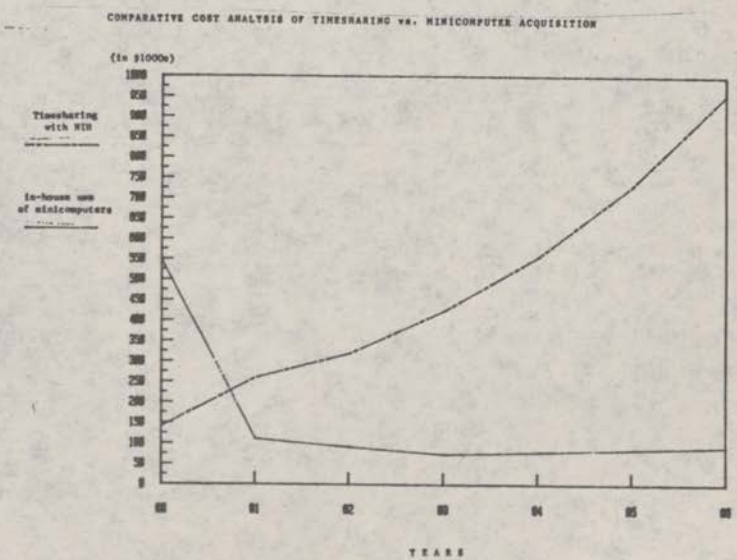
Federal Lands Acquisition: Permits budgeting, reprogramming and planning functions. Also available are surplus property information and statistics.

Land & Water Conservation Fund State Assistance Query: Permits rapid answers to ad hoc questions against the project database. It is available in Headquarters and all eight Regional Offices. The on-line apportionment formula allows L&WCF managers to compute alternative state apportionment amounts and display the apportionment details within minutes of receiving a request.

Electronic Mail: Allows rapid communication of messages and letters throughout the HCRS organization. This application was recognized as the way domestic agencies should proceed in the fall, 1980 issue of Management Magazine. This system has the advantage of reducing interruptions for phone calls, handling messages at the manager's convenience rather than someone else's, providing a written record of all exchanges, sending a message without having to know where the recipient is. Electronic Mail is instantaneous. It lets you compose, edit, transmit, distribute and "file" a message in a fraction of the time it would take to send a memorandum or note - minutes instead of days.

Mailing Labels: Allows any office to prepare and print out mailing labels or mailing lists of any constituency. The label is only typed once - when it is initially entered into the system. The label or list is available within minutes of being requested in any quantity and in several different orders (i.e. by state, zipcode, name).

Analysis of Financial Benefits for Rehabilitation of Buildings for Commercial Use: Provides a tool to study the economic consequences of an adaptive reuse project. The software for this application has already been given to many State and local units of government and to commercial organizations.



Administrative Provision

Question: With the passage of the Historic Preservation Amendments which permits owner approval before inclusion on the National Register, why do you request continuation of the Administrative Provision to require owner consent before an industrial facility may be added to the list of National Historic Landmarks?

Answer: The National Historic Preservation Act Amendments of 1980 were enacted by Congress on December 12, 1980. The materials for the budget appendix were prepared prior to actual passage of the Amendments and therefore requested continuation of this Administrative Provision. We agree that the language requiring owner consent for designation of industrial facilities as National Historic Landmarks is no longer needed because the Amendments require owner approval before inclusion in the National Register.

Energy Savings from Preservation

Question: In 1979, the Advisory Council on Historic Preservation funded a study which resulted in a publication (put together a booklet) entitled "Preservation and Energy Conservation," describing methods to compute energy savings in preservation. What are the most recent estimates of the energy saving potential from preservation? Are there studies other than the Advisory Council's on energy savings? If so, what do they show?

Answer: Previous studies (cited in the Advisory Council publication) have reported that, on average, it takes 23 percent less energy to rehabilitate an existing building than it takes to build a comparable new building. This is because the walls and structural systems remain in place in a rehabilitation project and only new internal services have to be added. The energy savings result from the reuse of existing materials that were manufactured when energy and raw materials were much less expensive.

Generally, most other studies on energy savings address a second issue, that is, can historic buildings be improved or retrofitted to become as energy conserving as newly constructed buildings? The results of one such study is the HCRS report entitled, "Preservation Brief 3: Conserving Energy in Historic Buildings." This brief identifies various techniques for improving historic buildings and suggests that such buildings, with only a few exceptions, can meet standards for new construction. However, it also identifies specific areas of concern where retrofit options in older buildings are limited due to the presence of historic materials or physical conditions which make retrofitting technically or economically infeasible.

Donations

Question: The estimate for donations for both FY 1981 and FY 1982 is $264,000 as opposed to a level of $589,000 in FY 1980.

Why is there a reduction in FY 1981 and FY 1982?

Answer: Budget amounts for donations normally are estimated conservatively by the Office of Management and Budget. Such estimates do not necessarily assume that donations in the current or budget year will be equal to the largest amount of donations in any recent year. Instead, the usual approach is to estimate an amount which has been equalled in all recent years. The estimates of donations are not constraints and, therefore, the amounts actually donated are available for obligation.

Common Program Services

Question: The estimate for Rent Payments to GSA for FY 1981 now is $2.1 million rather than the $1.2 million provided in the FY 1981 appropriation.

Where did you get the additional $900,000 to meet the increase in costs?

Answer: HCRS finances common program services through assessments against each of the appropriation accounts. To finance increases in SLUC costs, assessments against all programs were increased. The programs generally are absorbing this increased assessment through reductions in contracting and travel. With the merger of HCRS and NPS, common program service costs and how to finance them will be carefully examined.

CONCLUSION

Mr. MURTHA. Thank you very much.
Mr. RITSCH. Thank you very much, sir.

WEDNESDAY, MARCH 11, 1981.

SMITHSONIAN INSTITUTION

WITNESSES

S. DILLON RIPLEY, SECRETARY
PHILLIP S. HUGHES, UNDER SECRETARY
CHARLES BLITZER, ASSISTANT SECRETARY FOR HISTORY AND ART
DAVID CHALLINOR, ASSISTANT SECRETARY FOR SCIENCE
JOHN F. JAMESON, ASSISTANT SECRETARY FOR ADMINISTRATION
PAUL N. PERROT, ASSISTANT SECRETARY FOR MUSEUM PROGRAMS
CHRISTIAN C. HOHENLOHE, TREASURER
THEODORE H. REED, DIRECTOR, NATIONAL ZOOLOGICAL PARK
TOM L. PEYTON, DIRECTOR OF FACILITIES SERVICES
JON E. YELLIN, DIRECTOR, OFFICE OF PROGRAMMING AND BUDGET

INTRODUCTION OF WITNESSES

Mr. YATES. This is the hearing for fiscal year 1982 on the budget of the Smithsonian Institution and appearing in support of that budget is its very distinguished Secretary, Mr. S. Dillon Ripley; its Under Secretary, Mr. Phillip S. Hughes; Mr. Charles Blitzer, Assistant Secretary for History and Art; Mr. David Challinor, Assistant Secretary for Science; Mr. Julian T. Euell, Assistant Secretary for Public Service.

Mr. RIPLEY. He is not here this morning, he has been ill.

Mr. YATES. I am sorry to hear that. Open heart surgery no less.

Mr. RIPLEY. Yes, five bypasses.

Mr. YATES. Five of them? It sounds like a new world's record.

Mr. RIPLEY. His Deputy, Mr. MacDonnell, is here.

Mr. YATES. Thank you.

Mr. F. John Jameson, Assistant Secretary for Administration; Mr. Paul N. Perrot, Assistant Secretary for Museum Programs; Mr. Christian C. Hohenlohe, the Treasurer; Mr. Theodore H. Reed, Director, National Zoological Park.

Mr. Reed, I am surprised you are here; I thought you would be with Chia-Chia.

Mr. REED. He is sleeping in this morning.

Mr. YATES. We hope so.

Mr. Tom L. Peyton, Director of Facilities Services; and Mr. Jon E. Yellin, Director, Office of Programming and Budget.

In addition to the top echelon, if I may refer to them as that, are the top associates. Mr. Richard S. Fiske who is the Director of the National Museum of Natural History/Museum of Man; Mr. J. Kevin Sullivan, Director, Chesapeake Bay Center for Environmental Studies.

Mr. Sullivan, we are glad to see you at long last. We have heard about your Institution for many years and we are glad to see you come out of hiding.

Mr. Roger Kennedy, Director, National Museum of American History; Mr. Abram Lerner, Director, Hirshhorn Museum and Sculpture Garden.

Mr. Lerner, did I ever tell you what a marvelous show you had with the Russian art? I even bought one of your lecture tours and was edified by the learning that was shown by you. I recognized that New York accent as we went around.

Then Mr. Thomas Lawton, Director, Freer Gallery of Art. Mr. Lawton is the Chinese expert. We are glad to see you.

Mr. William E. Woolfenden, Director, Archives of American Art. Glad to see you, too.

Mr. Warren G. Robbins, Director, Museum of African Art; Mr. Nazaret Cherkezian, Director, Office of Telecommunications; Mr. John R. Kinard, Director, Anacostia Neighborhood Museum; Mr. James Morris, Director, Division of Performing Arts; Mr. Felix C. Lowe, Director, Smithsonian Institution Press.

Mr. Lowe, you are a busy fellow with all these publications that the Smithsonian puts out.

Then Mr. Robert M. Maloy, Director, Smithsonian Institution Libraries. That is an important job, too.

Then Peggy A. Loar. How did she sneak in? That is the first of the women. Ms. Loar is the Director of the Smithsonian Institution Traveling Exhibition Service.

Ms. Loar, how did you get a job? How did a woman get in this male hierarchy?

Mr. Ralph C. Rinzler, Director of the Folklife Program.

Well, everybody is identified. This is the first time we have had so many people.

Mr. MURTHA. Yes.

Mr. YATES. They are finally paying attention to us.

Mr. MURTHA. Yes, sir.

Mr. YATES. Mr. Ripley, you have a statement which I read and which is a good statement albeit quite general. We will be glad to hear your presentation as we launch your budget request.

Mr. RIPLEY. Thank you very much.

REAGAN BUDGET REDUCTION

Mr. YATES. Were you hurt by the Reagan budget?

Mr. RIPLEY. Yes, we were.

Mr. YATES. Vitally?

Mr. RIPLEY. Yes, we were.

Mr. YATES. How vitally were you hurt?

Mr. RIPLEY. Well, about $26 million worth with the more recent cuts.

Mr. YATES. You were cut $1.8 million in your operating account.

Mr. RIPLEY. Yes, and an amount of $24 million for the Quadrangle development.

Mr. YATES. That is the part where you were hurt.

Mr. RIPLEY. That was an easy item for OMB to defer because it was a construction item.

Mr. YATES. And it was a big one.

Mr. RIPLEY. And it was a big one.

Mr. YATES. Apart from that it was kind of a gentle slap they gave you, was it not?

Mr. RIPLEY. I think in a way it was.

Mr. YATES. It was by comparison to what happened to some of the others.

Mr. RIPLEY. We are really, I think, very well off and we are very grateful for the understanding that our programs have received.

Mr. YATES. Are you appealing?

Mr. RIPLEY. No.

OPENING STATEMENT

Mr. YATES. All right. With that introduction, may we have your statement.

[The statement follows:]

STATEMENT OF S. DILLON RIPLEY, SECRETARY
SMITHSONIAN INSTITUTION
ON APPROPRIATIONS REQUESTED FOR FISCAL YEAR 1982

Mr. Chairman and Members of the Subcommittee:

It is a privilege to appear before the Subcommittee once again this time to present the Smithsonian's FY 1982 budget request. I would like to thank the members of the Subcommittee for the support given to the Institution in FY 1981, in particular for the funds necessary to construct the Museum Support Center. I am pleased to report that the General Services Administration has let a contract for the building of the Support Center and that construction is now underway. We expect that the building will be completed during the winter of 1982 - 1983. With the generous addition of $5 million provided by the Congress and the application to the project of $2.5 million of the Institution's nonappropriated Trust funds, the Support Center will be constructed according to the original plan including four storage bays.

In a related matter, we have continued to make excellent progress with our collections inventories with the key help of special collections management/inventory appropriations first provided by the Congress in FY 1979. The Institution has established a June 1, 1983 date for completion of initial inventories.

We also have conducted a very active exhibits program for the enjoyment of the millions of people who are able to visit our museums. Major exhibitions opening during the past year were "The Clockwork Universe," an exhibition of 120 Renaissance clocks and automata at the National Museum of American History and the "Living Coral Reef Exhibit," the first of its kind in the world, at the National Museum of Natural History/Museum of Man. Even with an average of 27 million visitors each year to the Smithsonian including the National Zoological Park, we are, of course, mindful that many people are unable to travel to Washington and experience our museums firsthand, especially in these inflationary times. In order to bring exhibitions, research results and educational opportunities to millions more people throughout the United States in fulfillment of our duty to increase knowledge as well as to diffuse it, we have developed a number of programs that may be described under the term outreach. To highlight our outreach activities, I have brought with me three maps. The first of these depicts the services offered by the Smithsonian Traveling Exhibition Service (SITES) and the Smithsonian National and Resident Associates Programs. In FY 1980 an estimated seven million people viewed SITES exhibits in 370 cities in 48 states and the District of Columbia. The magazine Smithsonian reaches approximately 1.8 million Resident and National Associates, many of whom participate in regional and national programs offered in various cities.

The second map displays our press, radio and film activities. These include feature stories on art, history and science distributed to over 1,400 newspapers with a circulation of approximately 40 million in all 50 states by the Smithsonian News Service. Radio Smithsonian - a weekly program featuring interviews with Smithsonian staff members and outside guests and Radio Galaxy - which provides short descriptions of the Institution's activities reach a total of approximately 22 million listeners in 47 states, while Smithsonian films have appeared on television in 33 states with a potential audience of 35 million homes.

The last map summarizes many of the educational and training publications and programs that are offered by the Smithsonian across the country. These range from loans of slides or video material on conservation to workshops to educational publications for school teachers.

We also have a number of outreach activities that do not lend themselves to display on maps. For example, Smithsonian Exposition Books which develops popular books on subjects related to our museums published 254,000 copies last year including two new titles while the Smithsonian Institution Press published 88 scholarly books, scientific series publications and catalogues; the Division of Performing Arts sold 112,000 record albums of classical, jazz, show and gospel music and staged 106 concerts and children's theater performances; the Resident Associates presented over 1,000 events from workshops to lectures to travel-study tours.

Many of the outreach programs that I have just described are financed in full or in part with the Institution's nonappropriated Trust funds. Our unrestricted Trust fund income is specifically designated to fund several programs, effectively holding down the Federal appropriations request. As an example, unrestricted Trust fund income supports the Institution's Collections Acquisitions, Scholarly Studies and Education Program, approved by the Board of Regents in FY 1978 at a level of $2 million annually. This program, which generally requires outside matching contributions, has made possible a number of important acquisitions, research opportunities and outreach efforts. For example, in FY 1980, Acquisitions funds enabled the Freer Gallery to purchase a collection of twelve Chinese hanging and hand scrolls, among them works by the greatest masters in Chinese calligraphic history. Also in FY 1980 Scholarly Studies supported a study of the geological and biological character of tropical reefs. Based on this study of complex reef structures, new techniques are being developed for pollution control systems. This study also has led to the development of numerous techniques to maintain marine communities in microcosm form as represented in the coral reef exhibit that I have mentioned previously.

The Institution's centrally administered Fellowships and Visiting Scholars Program, previously financed with appropriated monies, also is funded with approximately $1 million of unrestricted Trust funds annually. Trust funds are additionally being used toward Quadrangle development, Museum Support Center construction, and a variety of other purposes that are explained fully throughout the budget submission.

Amended Request

Our amended FY 1982 budget request totals $156.2 million, which represents a total increase of $13.1 million over the FY 1981 base in all of our accounts.

The most significant change to the original budget request is the deferral by the Office of Management and Budget of funds for Quadrangle Construction. In place of the construction request, we are seeking a sum of $1 million for Quadrangle planning which would be used to prepare working drawings for the awarding of a construction contract in FY 1983. Also in the construction portion of our budget, the original request for the Restoration and Renovation of Buildings account has been reduced from $8.5 million to $7.5 million.

The final change occurs in the Salaries and Expenses appropriation where 96 full-time permanent positions have been eliminated, consisting of 60 positions in our base and 36 originally proposed new positions. Together, the estimated savings from personnel reductions total $1.8 million and this amount has been deducted from our original request.

At this point, I will proceed to explain specific details of our FY 1982 request by appropriation.

Salaries and Expenses

For Salaries and Expenses, we are seeking an appropriation of $135.1 million, an increase of $12.4 million over the comparable FY 1981 figures. Approximately 40 percent of the proposed increase, or $5.4 million, is consumed by the continuing higher cost of operations, including utilities, rent, other inflation and mandated pay costs. The balance is designated for programmatic purposes consisting of continued purchase of equipment for the Museum Support Center; acceleration of the collections inventory program and other collections management purposes; improvement to our exhibits programs, particularly those of the National Museum of American History and the National Museum of Natural History/Museum of Man; fundamental research in the sciences, art and American culture; and strengthening of our administration and facilities management functions.

We are very appreciative of funds appropriated in FY 1981 for Museum Support Center equipment. Since September 1980, a consulting firm, the Engineering Systems Division of the FMC Corporation, has been preparing detailed specifications for the collections storage equipment. Bids are scheduled to be solicited from suppliers in June 1981, using the funds appropriated in FY 1981 for this program. For FY 1982 a further amount of $4.5 million is sought of which $3.2 million will be used for further storage equipment purchases so that a sufficient quantity of the storage systems will be available for use at the Center at the time of occupancy. The balance of our request totalling $1.3 million is needed for Conservation Analytical Laboratory equipment and other laboratory and office equipment.

The completion of the Museum Support Center will advance enormously the proper care of the National Collections. The Institution has been moving ahead with efforts to assure appropriate collections management, most significantly by progressing with collections inventories. We have established a deadline of June 1983 for the completion of all initial inventories. With the assistance of funds provided by the Collections Management/Inventory Program, we have emphasized accelerated inventories at the National Museum of Natural History/Museum of Man, National Museum of American History, Cooper-Hewitt Museum and for the "Smithsonian Art Index" project of the National Museum of American art. Each of these museums has made substantial progress during the past two years in setting up effective computerized inventory systems and in proceeding with inventories of their collections. The task is very complex and the largest ever undertaken by the museum world -- the National Museum of Natural History/Museum of Man holds some 60 million items and the National Museum of American History holds over 16 million items. In order to meet the 1983 deadline which would assure complete inventory control over the collections that will be transferred to the Museum Support Center, we are requesting a program increase of $200 thousand for the Collections Management/Inventory Program which would bring the Program level to $792 thousand. These funds will be combined with base resources of $1.0 million, thus making available a total of $1.8 million for the accelerated inventories in FY 1982.

In addition to the inventories, the FY 1982 budget request addresses various other collections management needs throughout the Institution for which we are seeking an increase of approximately $800 thousand. These consist mainly of remedial conservation efforts in several museums, storage space improvement and automation of the Libraries' holdings.

A second area that we emphasize in the FY 1982 budget submission is exhibitions. With approximately 27 million visitors annually to the Smithsonian museums, galleries and the zoo, it is very important for us to keep exhibition spaces lively and reflective of the latest scholarship. One serious deficiency in the Institution's exhibit programs over the years has been the lack of an adequate temporary exhibits gallery of sufficient size and quality to accommodate outstanding traveling shows. With the aid of a private donation, we are nearing completion of a Special Exhibits Gallery, consisting of 14,000 square feet on the ground floor of the National Museum of Natural History/Museum of Man. The first show to be held in the new Gallery is "5000 Years of Korean Art" scheduled to open on July 15, 1981. This exhibition will feature outstanding objects including crowns of gold and jade from recently excavated royal tombs, Buddhist sculpture, celadon pottery of the Koryo Dynasty, and numerous works of pottery and porcelain. We are planning to mount three new shows each year in the Special Exhibits Gallery. Corporate funding will be sought for two of these. From Federal appropriations, we are seeking an additional $243 thousand for temporary coordinators and exhibit specialists needed to manage the Gallery and to mount an additional show each year based on our collections.

Also of importance to us are the funds associated with the Major Exhibitions Program established to provide support for significant history and art exhibitions that can not be funded within base resources. The FY 1982 request for this Program totals $1 million. The funds will be used to augment the important exhibitions that were emphasized last year -- the George Washington exhibition to be opened in the National Museum of American History on February 22, 1982, the 250th anniversary of his birth; and "Celebration: A World of Art and Ritual," scheduled to open in the Renwick later that year.

For other less spectacular but nonetheless important exhibit needs, including the upgrading of exhibits spaces, we are seeking an additional $425 thousand.

In the area of educational outreach, building upon previous efforts, we are proposing an expansion of our Native American Program. Beginning in FY 1977 when the Program was started, the Smithsonian has sponsored museum workshops, served as liaison between Native American and various Federal agencies on museum matters and provided on-site technical assistance to Native American museums. A patchwork of funding consisting mainly of grant funds from the Department of Labor supplemented by a small Federal base and a one-year allocation from the Institution's Trust funded Education Program has supported our efforts to date.

In response to the desires of the Native American community, we are seeking to establish the Native American Program on a secure footing with a Federal base of $333 thousand. We would note that ours is the only program that meets the needs of Native American cultural institutions on a national level. The resources requested in FY 1982 will be used mainly to defray the costs of traveling exhibitions to Native American museums, for workshops and internships, research, photography and photocopying services for Native American museums, and for the purchase of contemporary Indian ethnographic specimens for loan and traveling exhibitions.

Another important outreach program supported by the Smithsonian is the Smithsonian Traveling Exhibition Service (SITES). This program, founded in 1952, has developed into the largest, most comprehensive and varied traveling exhibitions program in America. SITES circulates an average of 170 exhibitions simultaneously, typifying the diversity of the Smithsonian's collections.

For FY 1982 we are requesting an additional sum of $122 thousand for SITES. The funds are needed to offset dramatically increasing shipping costs, and to enhance overall efficiency through computerization. Host museums are feeling the effects of inflation severely, and it is imperative that rental fees for exhibitions toured by SITES be held down so that they may be seen by as many people as possible. The limited amount of Federal funds that we are seeking for FY 1982, an amount of $307 thousand in total, will help to assure that fees paid for exhibitions remain within the budgetary reach of participating museums and galleries.

In addition to the outreach efforts that I have just described, we are seeking an additional amount of $148 thousand for educational programs of the National Museum of American History, the Hirshhorn Museum, the Visitors Information and Associates Reception Center, and the Office of Elementary and Secondary Education. An additional sum of $25 thousand is proposed for our Folklife Festival which will be extended to a two-week-long format and held during the July 4th holiday period.

As in the past, original research in the sciences, history, and art and American culture is integral to the Smithsonian. The additional amount of $1.3 million which we are proposing in the FY 1982 budget request builds upon existing research capabilities. The new resources will contribute greatly to the vitality of the staff and will be used to develop baseline scientific data and increase knowledge of Smithsonian Collections.

Of major note is our request of $150,000 to permit the Chesapeake Bay Center to continue the operation of a watershed monitoring system. We had requested an increase of $200 thousand for this purpose in FY 1981 of which $50 thousand was appropriated. We are seeking the balance in the new year because of the significance of this program. Also of considerable importance to us are funds of $300 thousand requested in the budget to reestablish the Research Awards Program. The Program provides essential support costs only on a competitive basis for new and innovative projects initiated by Smithsonian staff scientists. We are convinced that this Program is crucial to the intellectual vitality of the Institution. It provides an incentive for staff to evolve original research initiatives and enables the Smithsonian to compete with academic institutions and private firms for the most talented scientists. We therefore respectfully ask the Congress for funds to enable us to reestablish this very important program.

Finally, in the Salaries and Expenses Appropriation, we are seeking an additional amount of $445 thousand to strengthen several administrative offices and an increase of $1.1 million to meet various facilities and protection services requirements that stem from operating a large and complex physical plant.

Construction

Our revised request for the three construction appropriations totals $15.7 million. These funds will be used for construction and improvements at the National Zoological Park, restoration and renovation of Smithsonian buildings and Quadrangle planning.

Our FY 1982 request for Zoo construction is $7.2 million, of which $6 million is designated to begin construction of an Aquatic Habitats Exhibit and $1.2 million is for continued construction of a Delicate Animal Facility at the Front Royal Conservation and Research Center and various repairs and renovations both at Rock Creek and Front Royal.

The proposed Aquatic Habitats Exhibit will be located between the Bird House and the newly constructed Beaver Valley Exhibit. The design, which will be completed later this year with funds appropriated in FY 1980, includes a central educational display highlighting the role of sun and water and showing the changes that have occurred in the evolution of life from a one celled animal to mammals. Three additional sections of the exhibit will represent total ecological systems of different temperature zones -- tropical, arctic and temperate. Each will include one major species, corollary species of fish, birds and mammals that live in the same temperature zone, and abundant vegetation appropriate to the environment. Construction of the exhibit is planned over a three year period, with the balance of construction funding expected to be sought in the FY 1983 budget and related operating costs to be requested for FY 1985.

The revised FY 1982 request for the Restoration and Renovation of Buildings Appropriation totals $7.5 million. The Institution's "Five-Year Prospectus" identifies specific categories of work which are estimated to cost approximately $52.8 million from FY 1982 through FY 1986. These include repairs of building exteriors; installation of fire detection and suppression systems; modifications to provide access for the disabled, safety and security and correction of hazardous conditions; repairs and improvements to utility systems, and other projects in support of research. Our continuing requests for substantial annual funding in this account represent the Institution's commitment to the appropriate care of Smithsonian buildings, many of which are monumental and historical in character. We place importance on this account also because of its role in creating pleasant and healthy environments for our exhibits both to enable people to derive pleasure from viewing them and to permit proper care of the National Collections which require proper environmental conditions.

Our revised FY 1982 budget request contains a request of $1 million for Quadrangle planning. The Quadrangle consists of an area of approximately 4.2 acres located between the Smithsonian Institution Building and Independence Avenue. Its development will give increased vitality and attention to African and Eastern art. With the proposed new funding, we would be able to prepare all plans necessary for awarding a construction project early in FY 1983. We have submitted a legislative proposal to the Office of Managment and Budget that would revise the currently authorized planning ceiling of $500 thousand to $1 million. We expect this proposal to be introduced soon into the current session of Congress.

To date, the Board of Regents have approved the use of approximately $1.9 million of nonappropriated Trust funds for planning and design purposes. Working with outside firms, we have developed a preliminary design concept which consists of two above ground pavilions with major exhibit galleries augmented by

additional exhibit and support areas below grade. Delicate in proportion and sensitive in style, these pavilions will offer appropriate access to a new Museum of African Art and a new center for the exhibition of Eastern art and Eastern studies in association with the Freer Gallery of Art. As the plan is developed and if funds permit, the building element beneath the Quadrangle would provide additional space for exhibition and educational programs and parking for visitors and staff. A completed design concept was presented to the National Capital Planning Commission on Janaury 8, 1981 and the design concept was approved.

Since 1979, we have been pursuing fund raising for Quadrangle development which will be financed jointly with appropriated and nonappropriated funds. In 1980, the Government of Japan donated $1 million toward the new center for Eastern art. I am very pleased that the Republic of Korea made a similar $1 million contribution only last month. We presently are pursuing other contributions from foreign countries. Within the United States, a corporate campaign has been organized with a goal of raising at least $2 million dollars. And, of course, the Smithsonian plans to provide $9 million toward construction from unrestricted Trust funds with a further reimbursable advance from endowment funds of $6 million for the parking garage. Even with our success to date, it is clear that a pledge of support by the United States Congress consistent with that of the new Administration would be a tremendous help to our fund raising efforts. President Reagan, in accepting last month the contribution of $1 million from President Chun of Korea, noted that a new museum of Eastern art on the Mall would "further enhance intercultural understanding and appreciation between the people of America and the people of Asia." We are very appreciative of the President's remarks and have ourselves believed that a new Museum of African Art and an Eastern center would enlarge cultural understanding of these important areas of the world. The new galleries will provide ample scope for our government to express such understanding.

We are eager to move ahead with Quadrangle development. As a joint enterprise between the Federal Government and outside contributors, the cost to the Federal taxpayer will not be large, especially in view of the benefits to be offered.

Smithsonian Foreign Currency Program

The final appropriations account in our budget request is for the Special Foreign Currency Program. Our request in this account for FY 1982 totals $5.5 million. The proposed funds will be used to continue a program of grants to United States institutions for research in countries where excess local currencies are available, mainly India and Pakistan ($3.5 million); to add to the forward-funded reserve in support of future programs of the American Institute of Indian Studies ($1 million); and to initiate United States support to the international effort organized through UNESCO to restore and preserve the Indus civilization city of Moenjodaro in Pakistan ($1 million).

These programs are all more fully explained in the budget document. Mr. Chairman, I and my staff will be happy to respond to your questions and those of the members of the Subcommittee.

Mr. RIPLEY. Well, I want to say once again, Mr. Chairman, how pleased we are to be here in force this morning to present ourselves before this committee.

Mr. YATES. You are really in tour de force this morning.

Mr. RIPLEY. And for that we are tremendously grateful.

I do want to start off by saying how grateful we are for the varied support that we had last year and in particular for the funds necessary to construct the Museum Support Center. As you know, it was largely due to the initiative of this subcommittee that we were able to fly, as it were, with the original plan assisted by our private funds, our Trust funds budget, so that construction is underway, ground has been broken. I am happy to report that we estimate that in two years from this date the building will be completed and this is a breakthrough for us, it is something we have been in the planning stage on now for 15 years so it is a very material assist to the Institution as a whole.

I also wanted to highlight the fact that in the past year in addition to our concerns about collections expressed by the new Museum Support Center and the inventories which we are proceeding to carry out with assistance from this subcommittee, we have conducted a very active exhibits program for the enjoyment of some 27 million visitors now who come each year to parts of the Smithsonian both on the Mall, the National Zoological Park, and other parts of our Institution.

OUTREACH

We also have brought the exhibitions and the research and educational opportunities to these millions more people throughout the United States. I wanted to show an exhibit here of a number of programs that we would describe under the term Outreach. To highlight these activities I have brought three maps with me. The first of these on the easel to the left shows the service offered by our Traveling Exhibition Service under the charge of Ms. Loar, who is the Director of that, and the Smithsonian National and Resident Associates Programs. You see the Associates in red, the exhibits in blue and the magazine which is the Associates' vehicle in green there on the map.

Mr. YATES. What is the difference between the Associates and the Associates' magazine for that purpose?

Mr. RIPLEY. Well, the programs of the Associates consists of six a year rather major efforts by us to bring to a city, a major center somewhere in the United States, a traveling team, as it were, of people who then give demonstrations, lectures, have an exhibit, a series of exhibits perhaps, and then have a week long seminar-like experience with members of the Associates. These are enormously popular and the number of Associates who come to them, usually held in someone's museum or cultural center in that city, are very, very reinforcing to the local community.

For example, if we have a meeting in Cleveland, you have it in the Cleveland Museum of Art or in one of the big department stores there which has exhibition facilities and that gives a great deal of excitement and stimulus to the Cleveland institution because our principle has been in effect to "patronize your neighbor-

hood grocery store." In other words, if we are bringing a cultural program, we want to emphasize to the community the resources that are right there in town. That in a sense has been the Associates' program and we do six of these a year.

Mr. YATES. Who pays for those?

Mr. RIPLEY. We do that out of our Trust funds.

Mr. YATES. What is the cost per year?

Mr. RIPLEY. I don't have the figure.

Mr. YELLIN. About $250,000 to $300,000 a year for the National Associates Regional Events program.

Mr. YATES. I notice from an article that appears in one of the papers that you also charge admission for some of the lectures. According to this article which appeared in the Tampa, Florida Tribune, it says:

> Those wishing to attend are urged to contact local cosponsors. Lecture tickets are $1 for Associate members and $1.50 for nonmembers. Tickets for the garden seminar are $15 and tickets for the American folk instrument seminar are $10.

Do you get any of that money?

Mr. RIPLEY. Well, this is put into the budget to try to meet expenses.

Mr. YATES. I just wondered whether that money goes to the local group or whether any of it goes to you.

Mr. RIPLEY. I think it underwrites the cost of part of the whole thing. In other words, it is a self-liquidating operation as much as we can make it so.

Mr. YATES. If it costs you $250,000 approximately, how much do you get back?

Mr. YELLIN. We receive back in those programs approximately $25,000 to $35,000 so it is a net cost of approximately $250,000 a year.

Mr. YATES. Is the fact that there is an admission charge an unusual experience for Tampa, Florida?

Mr. RIPLEY. I don't think so.

Mr. YATES. They charge as they go around. Would Ms. Loar know? These are the Associates we are talking about.

Mr. RIPLEY. The seminar goes on for three or four or five days.

Mr. YATES. I suppose they have to pay something.

Mr. RIPLEY. Well, it is tremendously popular. It is a way of underwriting the costs and it is a way of showing people how valuable it is.

Mr. YATES. While we are on admissions, your museums in the city of Washington, D.C. do not have an admission charge, do they?

Mr. RIPLEY. No.

Mr. YATES. I think you are the only ones who don't charge. The National Gallery does not charge, the Federal museums do not charge. The suggestion is made that the Corcoran does not charge but the Corcoran has a box there that says, 'Pay what you want,' and they keep raising the figure to pay what you want.

Mr. RIPLEY. Most cities now if they don't have a fixed charge have this kind of 'volunteer' charge and that is simply a way of attempting to meet expenses but we have never done it in this city.

Mr. YATES. I hope we don't have to.

Mr. RIPLEY. I hope so, too. I think it is a marvelous thing to have people coming from Europe who are immensely impressed because

you cannot get into any public institution in Europe without paying a fee.

Mr. YATES. I interrupted as you were crossing the country.

Mr. RIPLEY. I am crossing the country with the Traveling Exhibition Service and the National and Resident Associates programs. There are explanatory descriptions of those programs on the right hand section and they give you some idea of the numbers of people that are now participating or are reached.

I would like to go to the second map if you have no further questions on that, Mr. Chairman.

Mr. YATES. All right.

PRESS, RADIO, AND FILM ACTIVITIES

Mr. RIPLEY. The second map displays our press, radio and film activities. We now have for the press a news service to over 1,400 newspapers with a circulation of approximately 40 million in all 50 States by our Smithsonian News Service. These are free services to give them information and sections of things that would be interesting to them about Smithsonian activities. We have Radio Smithsonian, a weekly program featuring interviews with staff members and outside guests and Smithsonian Galaxy which provides short descriptions of the Institution's activities in the same format as the News Service and they reach approximately 22 million listeners in 47 of the States while the Smithsonian films are shown on television in 33 States with a potential audience of some 35 million homes.

You will recall, Mr. Chairman, in past years there has been discussion in the subcommittee about why we don't do more television in the way of educational programs. This is something which we have been wrestling with for some years and we now have an active subcommittee within our own administration considering still further the new developments in cable, cassettes and disc facilities for television programs in the home or schools and we are actively exploring that.

COMMERCIAL TELEVISION AND PUBLIC BROADCASTING

Mr. YATES. You have not yet made the commercial networks, have you?

Mr. RIPLEY. We have had experience with them over the years, particularly two of them, NBC and CBS.

Mr. YATES. You have not made any commercial networks with that program?

Mr. RIPLEY. I don't know whether we have.

Mr. YATES. Isn't it usually Public Broadcasting?

Mr. RIPLEY. It has been as far as I know, yes.

Mr. YATES. The reason I ask that question is I wonder what happens now if it goes through the Corporation for Public Broadcasting, institutions such as yours with programming such as yours, that there will be an opportunity for outlets as much.

Mr. HUGHES. Mr. Chairman, I am the chairman of the subgroup that Secretary Ripley referred to. We have been doing two things. First, we have been looking at what we might do substantively inside the Smithsonian, what resources we have and what kinds of

programs we might put together. We also have been attempting to get a feel for the opportunities of how we would sell in some sense outside the Institution, as you suggest. Public Broadcasting is in something of a state of disarray right now partly because of a likely decline in Federal support but partly also because of a tax, if you will, a commercial tax from the other side by the networks who are exploring more of the kind of programming that the public system has done and also because of cable and the potentialities of that. In the jargon of the trade they talk about narrowcasting instead of broadcasting and we have been told by some who seem expert to us that the best opportunities for our sort of activity may well be in the cable world where the potential audience is smaller. There can be greater selectivity in the kind of programming and more control can be retained over the sort of programming that we have.

Mr. YATES. But don't you deprive the average household of seeing your program?

Mr. HUGHES. Not if the cable grows as it is anticipated. There is something like 20 percent of the homes with TV in the country that have cable now and the number of subscribers is expected to grow very substantially. How much of that will be pay cable, how much of it will approximate commercially financed programming is not clear yet but the whole state of the industry is changing and there is quite a bit of uncertainty about the future.

We have yet to talk with Mr. Ripley about some of our tentative plans but we think there is a future for us with a rather wide audience albeit probably somewhat less in numbers than the 50 or 75 or 100 million that the commercial broadcasters are looking for.

Mr. YATES. Thank you.

TRAINING AND EDUCATIONAL PUBLICATIONS

Mr. RIPLEY. The last map which we have to show you this morning summarizes many of our educational and training publications and programs that go across the country. These range from loans of slides or video material on conservation to workshops and to educational publications for school teachers. You will notice there that we have a Native American Museum program with six workshops in several States starting up and this is the beginning of putting into action now the work that we have been doing for some years on trying to build up Native American museums and work closely in training those curators and people to work in such museums across the country.

NATIVE AMERICAN MUSEUMS

Mr. YATES. Do I understand that chart correctly that there are 23 Native American museums in 23 States and the District of Columbia?

Mr. RIPLEY. That is what the chart says. I don't know it specifically myself, I didn't amass the statistics.

Mr. YATES. Do you have a Native American with you this morning?

Mr. RIPLEY. We have David Challinor or Dick Fiske who could answer.

Mr. FISKE. I think Paul Perrot could answer.

Mr. RIPLEY. Paul is an un-Native American but he is doing pretty well to make up for it.

Paul, how many museums are there in the country?

Mr. PERROT. There are many Native American communities that are struggling to establish museums. Some of these organizations are very marginal operating in community centers. Most of them do not have trained personnel, and most do not have facilities for conservation. Some, however, would be considered full-fledged museums; others call themselves museums. All are aspiring to take care of the heritage of the Native Americans in their local area. These are the ones that we are particularly concerned with assisting by providing to them technical expertise so that their own people can manage their own institutions. Also, we are interested in providing to them traveling exhibitions which are germane to their concerns. These loans from the Smithsonian are supplemented by local resources to permit them to present a more complete picture of their heritage.

Mr. YATES. How many good Native American museums are there? I suppose I put you on the spot by asking you to rate them. I know they are all good but how many of them are better than good?

Mr. PERROT. Mr. Chairman, I have not visited them all personally so I would prefer not to respond specifically but I would say there are probably eight or ten that are considered to be fairly strong. I will be glad to provide the list for the record and be as tactful as possible.

Mr. YATES. All right.

[The information follows:]

MAJOR NATIVE AMERICAN MUSEUMS

Museum of the Cherokee Indian—Cherokee, N.C.
Dinjii Zhuu Enjiit Museum—Fort Yukon, Alaska
Makah Cultural & Research Center—Neah Bay, Wash.
Hopi Tribal Museum—Second Mesa, Ariz.
Navajo Tribal Museum—Window Rock, Ariz.
Colorado River Indian Tribes Museum—Parker, Ariz.
San Ildefonso Pueblo Museum—Santa Fe, N. Mex.
Native American Center for the Living Arts—Niagara Falls, N.Y.
Seneca Iroquois National Museum—Salamanca, N.Y.
Tomaquag Indian Memorial Museum—Exeter, R.I.
Hoopa Tribal Museum—Hoopa, Calif.
Malki Museum, Inc.—Morongo Indian Reservation, Banning, Calif.
Paiute Museum—Pyramid Lake Painte Tribal Council, Nixon, Nev.
Indian Pueblo Cultural Center—Albuquerque, N. Mex.
White Mountain Apache Cultural Center—Fort Apache, Ariz.
Yakima Indian Nation Museum—Toppenish, Wash.
Cherokee Nation Museum—Tahlequah, Okla.
Five Civilized Tribes Museum—Muskogee, Okla.

Mr. RIPLEY. Thank you very much for that, Paul.

If you have no other questions, I think that gives a pretty good overall view.

OUTREACH PUBLICATIONS

Mr. YATES. Let me just take a look at your Art to Zoo. I don't think I have seen that publication.

Mr. RIPLEY. Here is Art to Zoo.

Mr. YATES. Let's see what Art to Zoo looks like. Well, it is kind of handsome.

It shows a dress made by Annie Steel. Who is Annie Steel? Do you know who Annie Steel was, Mr. Ripley?

Mr. RIPLEY. Who was Annie Steel, John?

Mr. JAMESON. She was the grandmother of the Director of the Office of Elementary and Secondary Education, the office that puts out that publication.

Mr. YATES. Do you have a copy of Air and Space?

Mr. RIPLEY. I think we have a copy of Air and Space with us. Who has one?

Mr. YATES. No Air and Space.

Do you have a copy of a research report?

Mr. RIPLEY. I don't think we brought them.

Mr. YATES. Would you furnish them for the committee so we can see them?

Mr. RIPLEY. Yes.

Mr. YATES. All right. You may proceed.

OTHER OUTREACH ACTIVITIES

Mr. RIPLEY. We also have a number of other activities that make themselves very easily represented on the maps. The Smithsonian Exposition Books which we started several years ago develop popular books on subjects related to our museums. Now last year alone they sold 254,000 copies of such books, including two new titles in addition to the ones that were being reprinted. "The American Land" was one of them and "Every Four Years" was the other. These are subscription or mail order books, as it were, sold through mail order to members of the Associates.

We also have the Smithsonian Press which had a very successful year last year publishing 88 scholarly books, exhibition catalogs and scientific series. As you know, the Smithsonian Press is one of our standbys and has been supported partially through Federal funds for the museum publications which are scientific and partially through venture titles which are then published through commercial auspices. Last year we published 88 scholarly books, scientific series publications and catalogs. The Division of Performing Arts sold 112,000 record albums of classical, jazz, show and gospel music and staged 106 concerts and 340 children's theater performances. The Resident Associates presented over 1,000 events from workshops to lectures to travel-study tours.

During the inauguration this year, as with the Carter inauguration, the Smithsonian's Division of Performing Arts, with funds provided by the Jimmy Carter Inaugural Trust had four days of free musical performances in the museums on the Mall for people who were coming to the city for the inauguration festivities, and this has been a very successful program.

Mr. YATES. Did the new administration know about this book, "Every Four Years?" You have an article entitled, "The President is Progressive."

Mr. RIPLEY. I am sure they have appreciated that, Mr. Chairman.

Mr. YATES. It is a beautiful book.

Mr. RIPLEY. Most of these outreach programs, as we call them, are financed in full or in major part with nonappropriated Trust funds; that is, our private funds.

Mr. YATES. How much money do you make from these programs?

Mr. RIPLEY. Chris, do you have that figure?

Mr. YATES. Two years ago I think you were making something like eight to twelve million dollars a year net.

Mr. HOHENLOHE. From all of the auxiliary activities as well as our unrestricted investments we netted $11.6 million last year.

Mr. YATES. What was it the year before?

Mr. HOHENLOHE. I will have to check that, Mr. Chairman.

Mr. YATES. All right. That is pretty good, isn't it? What percentage of return is that?

Mr. HOHENLOHE. The gross revenues from all of our auxiliary activities was in the neighbohood of $75 million.

Mr. YATES. Your Exhibit E-7 of your justification shows Institutional Operating Funds.

Mr. RIPLEY. The gross income shows $84 million. This was in fiscal year 1980 and represents possibly as much as 40 percent of our total budget but the net unrestricted out of that is, of course, something down in the neighborhood of eleven or was in fiscal 1980.

Mr. HOHENLOHE. The comparable figure, Mr. Chairman, was $11.6 million last year and the comparable figure in the year before was $11.679 million so it is approximately the same unrestricted net revenue.

Mr. YATES. The costs have been going up?

Mr. HOHENLOHE. Yes.

Mr. YATES. What were your costs for the three years?

Mr. HOHENLOHE. The gross?

Mr. YATES. It is interesting that you had the same return even though your costs were going up. It shows either you had better management or a greater coverage or higher prices.

Mr. RIPLEY. Greater acceptability I think is part of it. We have not increased our prices to any measureable extent. I think we raised the magazine two dollars, did we not?

Mr. HOHENLOHE. Yes, we did.

Mr. RIPLEY. It is a rather small percentage.

Mr. YATES. Continue, Mr. Ripley.

Mr. RIPLEY. Our unrestricted Trust fund income is specifically designated, as you know, Mr. Chairman, and as reported in full in our reports herewith, to fund several programs.

Mr. YATES. I just want to get one figure before you go on. With the net income of $11 million you don't pay any taxes on that, do you?

Mr. HOHENLOHE. We have not paid any related taxes.

Mr. YATES. Has IRS wanted you to pay any tax?

Mr. HOHENLOHE. We have been in discussion with them for the past several years to see how the regulations apply to the Smithsonian and that is still under discussion.

APPLICATION OF NET REVENUE

Mr. YATES. What is your net Trust fund now? If you have been pouring in $11.5 million a year for the past three years, how much money have you saved up?

Mr. HOHENLOHE. Well, we spent almost all of the $11.6 million during the year on programs and activities.

Mr. RIPLEY. We are not sort of adding in anything in proportion to that.

ENDOWMENT

Mr. YATES. I thought you were on your way to a $50 million endowment.

Mr. RIPLEY. We are hoping to.

Mr. YATES. Out of Federal funds?

Mr. RIPLEY. No, no.

Mr. HOHENLOHE. Mr. Chairman, we did add $2 million of that to our endowment fund last year.

Mr. RIPLEY. That is about what we can afford.

Mr. YATES. You added $2 million last year. How much the year before?

Mr. RIPLEY. About $2 million the year before that.

Mr. HOHENLOHE. It was $2 million the year before as well.

Mr. YATES. And $2 million the year before.

Mr. HOHENLOHE. Three million dollars the year before that.

Mr. YATES. What is the total that you have in the reserve?

Mr. HOHENLOHE. The total unrestricted endowment as of the end of last fiscal year was $29 million.

Mr. YATES. Twenty-nine million dollars. That is pretty good. What do you do with the $29 million? Do you invest it? Do you still have your investment committee that should have been buying paintings instead of bonds?

Mr. RIPLEY. Yes, that is right. I still don't like that idea of buying paintings, I think it is a very ephemeral way of investing.

Mr. YATES. I don't think Joseph Hirshhorn would agree with you.

Mr. RIPLEY. Well, at least he has given the collection to the country which is something, he has not just sold it off.

Mr. YATES. We were not talking about that, we were talking about what you should invest in.

Mr. RIPLEY. Well, that is the great danger. What do you do with them once you have bought them as an investment?

Mr. YATES. You give them to the country.

Mr. RIPLEY. Well, we do a good deal of that also.

Mr. YATES. All right. Go ahead.

Mr. RIPLEY. The fund income—I was just going to recite some of the things we do.

COLLECTIONS ACQUISITION

Mr. YATES. Let me just interrupt again at this point.

How much of your unrestricted funds go to collection acquisition?

Mr. RIPLEY. One million dollars a year.

Is that right?

Mr. HOHENLOHE. We spend a million of our unrestricted funds for collection acquisitions and in addition we solicit gifts and grants from outside sources.

Mr. RIPLEY. We try to get matching funds for that.

Mr. YATES. To the extent of a million dollars a year so that you have $2 million, is that right?

Mr. RIPLEY. At least, yes, I think so.

Mr. YATES. How much money actually went for acquisitions last year? What is your latest figure?

Mr. BLITZER. The Regents voted three years ago to devote a million dollars a year of unrestricted funds to acquisitions to spread over six museums. The Museum of African Art was added last year when it became part of the Smithsonian. The Regents also made a rule that funds available to any one of those museums should be matched 50 percent in order to encourage donations to the museums.

I can give you the figures here by year if you would like.

Mr. YATES. Would you put them in the record, Charlie?

Mr. BLITZER. Yes.

Mr. YATES. Thank you.

[The information follows:]

REGENTS' ACQUISITION FUNDS BY YEAR

Museum	Purchase	Regents Funds	Matching Funds
	Fiscal Year 1978		
National Museum of Natural History	H. J. Kirby Siber Collection of Fossils	70,000	-0-
	Subtotal	70,000	-0-
	Fiscal Year 1979		
Hirshhorn Museum and Sculpture Garden	Maillol Sculpture "L'Action Enchainée"	368,000	-0-
National Museum of American Art	Durand Landscape Painting "Dover Plain, Dutchess County, New York	125,000	125,000
National Museum of American History	Quartet of signed, 18th Century Stringed Instruments	100,000	18,000
National Museum of Natural History	Cordry Collection of Mexican Masks	70,000	-0-
	Subtotal	663,000	143,000
	Fiscal Year 1980		
Freer Gallery of Art	Twelve Scrolls of Chinese Calligraphy	360,500	35,000
Hirshhorn Museum and Sculpture Garden	Lachaise Sculpture "Standing Woman" (Heroic Woman)	150,000	75,000
National Museum of American Art	Melzac Collection of Contemporary Paintings	1,029,000	486,200
National Portrait Gallery	Gilbert Stuart Portraits of George and Martha Washington *	1,000,000	-0-
	Subtotal	2,539,500	596,200

*Represents the full amount allotted to the National Portrait Gallery from the Regents' Collections Acquisition Program. The remaining $1,750,000 required to purchase the portraits was provided from other Smithsonian funds.

Museum	Purchase	Regents Funds	Matching Funds
	Fiscal Year 1981		
Hirshhorn Museum and Sculpture Garden	Gauguin Sculpture "Cylinder Decorated with the Figure of Hina"	228,000	197,000
	Miro Painting "Woman before an Eclipse with Her Hair Disheveled by the Wind"	254,000	196,000
National Museum of Natural History	Carlisle Indian School Collection of Glassplate Negatives	20,000	-0-
	R.K. Harris Archeological Collection of Artifacts from Texas, Oklahoma and Arkansas	110,000	110,000
	Lhungay Collection of Tibetan Materials	60,000	-0-
	Subtotal	672,000	503,000
	GRAND TOTAL	3,944,500	1,242,200

OTHER USES OF TRUST FUND REVENUES

Mr. YATES. Proceed, Mr. Ripley.

Mr. RIPLEY. This program then, as you see, does require outside matching contributions where possible. This made possible all of these many acquisitions that you have heard about, read about, or we reported to you and of course a number of research opportunities and further outreach efforts. They sort of pyramid on themselves and are very good for encouraging additional understanding of our programs nationally. Trust funds also support our centrally administered fellowship and visiting scholars program.

Mr. YATES. How many visiting scholars do you have?

Mr. RIPLEY. Do you have a figure on that, Dave?

Mr. CHALLINOR. Yes. We have over 100 varying kinds for varying terms. I would say about 125 throughout the Smithsonian during a given year.

Mr. YATES. Thank you, David.

Mr. RIPLEY. We also have plugged in for the deficit on the Museum Support Center $2.5 million of these Trust funds to add to the supplementary funds that this subcommittee initiated authorizing and helping on the Quadrangle development plans and many other purposes that are here in our budget submission that you see paragraph by paragraph as we go through it.

FISCAL YEAR 1982 AMENDED BUDGET REQUEST

I would like to proceed now to describe the amended budget request which for fiscal year 1982, Mr. Chairman, totals $156.2 million which represents a total increase over our fiscal year 1981 base of $13.1 million in all accounts.

The most significant change to our original budget request to OMB has been the deferral by that office of funds for Quadrangle construction. In place of the construction request we are seeking a sum of $1 million for Quadrangle planning which would be used to prepare working drawings for the awarding of a construction contract in fiscal year 1983. Also in the construction portion of our budget, the original request for the Restoration and Renovation of Buildings account has been reduced $1 million from $8.5 million to $7.5 million.

Mr. YATES. How hurtful will something like that be?

Mr. RIPLEY. It is inevitably hurtful but we cannot do anything more than be good soldiers and accept it.

MUSEUM SECURITY

Mr. YATES. How will the proposed reductions affect your guard services?

Mr. RIPLEY. I don't believe that we are badly hit on that, are we, Jon?

Mr. YELLIN. We have a base reduction in our guard services of eight positions for 1982. In addition, we had originally proposed eight additional positions for 1982 so that the total reduction is 16 guards.

Mr. YATES. A few days ago there was a newspaper story that reported the loss of certain objects from the Museum of American History, I believe it was.

Mr. RIPLEY. Yes.

Mr. YATES. They have not had any trouble?

Mr. RIPLEY. No.

Mr. YATES. How did the incident happen?

Mr. RIPLEY. We still don't know, we are investigating it. We still don't know exactly.

Mr. YATES. Was it an area that was not policed or supervised by guards?

Mr. RIPLEY. As far as I know it was an area that was under guard supervision, yes, because it was an exhibit area but I have not got the full report on exactly what happened. The FBI was called in immediately along with our own guard and security people and it is under investigation.

Mr. YATES. Would an incident like that require an analysis of the strength of your guard system?

Mr. RIPLEY. I think it might be a byproduct of that, yes. If it is shown that it happened during exhibit hours, then why was the patrolling and supervision not sufficient to insure against something of a rather major interruption of this sort?

Mr. YATES. While we are on the subject, were there other incidents of this kind in any of the other museums or other installations of the Smithsonian?

Mr. RIPLEY. During the past year?

Mr. YATES. Yes.

Mr. RIPLEY. No. There has been one mysterious disappearance of one object in a museum and that is all I know.

Mr. YATES. Excuse me a minute.

SECURITY OUTSIDE BUILDINGS

Mr. MURTHA. Mr. Secretary, how about responsibility for protection of individuals outside, do your guards have that responsibility? I am thinking of when you have classes in the evening and so forth.

Mr. RIPLEY. There is a kind of shared participation. We have, for example, a guard doing patrol with emphasis on making sure that classes are supervised and that persons are escorted out of the buildings and things of that sort.

Mr. MURTHA. I remember reading about a year ago that a woman was assaulted after she left one of the classes.

Mr. RIPLEY. Terrible case, yes.

Mr. MURTHA. Would that type of incident be affected by this reduction in your guards?

Mr. RIPLEY. John Jameson perhaps could answer that, Mr. Murtha.

Mr. JAMESON. Mr. Ripley is correct. We patrol our immediate environs including parking lots and the grounds of our buildings. We share the jurisdiction with the National Park Service and the Park Police who have the basic jurisdiction over the Mall where we believe this incident that you referred to took place. We work very closely with the Park Police and the Park Service. We have under study a plan in collaboration with them and with other jurisdictions for an improved security lighting system surrounding our buildings and on the Mall which we think would help to avoid reoccurrences of that type.

Mr. MURTHA. Is there a relationship between the number of guards now and the budget cut?

Mr. JAMESON. There is no question that the reduction of guards, both the base reduction as well as our inability to seek the additional guards in the 1982 budget, will have a negative impact on our ability to protect not only public areas inside and outside the building but the areas of loading docks and shipping platforms, collection areas and the like.

Mr. MURTHA. Can you give us an estimate of what the loss would be or what the possibility of injury to the people using the museum could be if we cut back on the guards or if we go along with these reductions?

Mr. JAMESON. I cannot give a dollar and cents estimate of what that effect would be but I think we simply heighten the risk.

Mr. MURTHA. What was the cost of the item that was stolen here just recently?

Mr. JAMESON. We do not have an estimate of the value of the objects that Mr. Ripley and the Chairman referred to. Probably the silver content or gold content is quite a few thousand dollars.

Mr. MURTHA. Is it in excess of a guard's salary?

Mr. JAMESON. Yes, sir.

Mr. MURTHA. It is in excess of a guard's salary?

Mr. JAMESON. It is probably in that ball park, yes, sir.

Mr. MURTHA. There you are. It is shortsighted to reduce your protection and lose exhibits. Obviously if you are going to have fewer guards, you are going to make it more inviting to have items taken, I would think.

Mr. RIPLEY. These things come and go in waves and it is always difficult to assess in advance where something of this sort may happen. They seem to be totally unexplainable when they occur. Sometimes they are generated by people reading about them in the newspapers who get the feeling that maybe it is worthwhile hitting that place because there is something to take there. We hate to really discuss these kinds of things in great detail because it tends to create more of a brush fire but there is no doubt that we do need more guards and we always have. We have been undermanned ever since the years that I have been here, we have been strung out. Our guards are very fine people and we work very hard to build their morale and to try to make them proud of their contributions here and at the same time we have felt that we could not give them full employment satisfaction because we are always cut.

Is that fair to say, John?

UNDERSTAFFING OF GUARDS

Mr. JAMESON. Yes, sir. We do a five year prospectus, Mr. Murtha, which projects and forecasts what we believe to be not only our current needs but needs in the out years. Based on security surveys that we have done by our own staff as well as by consultants we estimate that we are somewhere between 50 and 60 guards understaffed at this point based on the needs as we now know them. Of course, this reduction of eight positions in the base will compound that shortage.

Mr. MURTHA. How many positions short are you?

Mr. JAMESON. About 55, sir.

Mr. MURTHA. You are 55 short not including the eight?

Mr. JAMESON. Yes.

Mr. MURTHA. Mr. Chairman, we have been discussing that the value of the lost items may be in excess of the number of guard positions to be cut. I believe it is counterproductive to reduce the guard force and increase the risk of losing more valuable material, not to mention the possibility of the recurrence of the incident we had a couple years ago when the woman was assaulted outside the Smithsonian. They have a dual responsibility with the Park Police. I wonder if we should seriously consider not allowing this cut to be made.

INVESTIGATION REPORT

Mr. YATES. He is going to review, he says, and give us a report. An article that appeared in The Washington Star indicated the fact that the objects that had been stolen were discovered about an hour after the museum had opened for the day according to a Smithsonian source. I don't know who that source was but at any rate you are still investigating it and we would appreciate a report.

Mr. RIPLEY. That particular incident is under investigation and we will get a report eventually. As I mentioned to Mr. Murtha, we are guarded in our circulation of such reports because we feel that they are somewhat classified in the sense that advertising or notice of these kinds of things tends to promote undue interest on the part of people who might perpetuate such an incident.

SALARIES AND EXPENSES APPROPRIATION REQUEST

The change in the Salaries and Expenses appropriations shows that 96 full time permanent positions have been eliminated consisting of 60 positions in our base and 36 originally proposed new positions. This comes to a savings from personnel reductions of $1.8 million and this amount has been deducted from our original request under the 1982 budget.

Details of the 1982 request for appropriations are as follows, Mr. Chairman. In Salaries and Expenses, we are seeking an appropriation of $135.1 million, an increase of $12.4 million over the comparable 1981 figures. Approximately 40 percent of that proposed increase, or $5.4 million, is consumed by the continuing higher cost of operations, including utilities, rent, other inflation and mandated pay costs. The balance is designated for our various continuing programs.

A very important programmatic request included in our budget this year is for a second increment of the Support Center equipment funds. As you know, as we described last year we cannot really make the Support Center work without having a sum for equipment purchases for it in itself and in 1982 we are asking for $4.5 million of which $3.2 million will be used for storage equipment purchases so that a sufficient quantity of these expertly engineered storage systems will be available for use at the center by the time of occupancy. We hate to postpone costs of this sort on the basis of the increase in the costs under a succeeding budget system. The balance of our request totalling $1.3 million is needed

for Conservation Analytical Laboratory equipment and other laboratory equipment in the Support Center.

The completion of this center will advance enormously the proper care of the National Collections. We have been moving ahead as you know, Mr. Chairman, with efforts to assure appropriate collections management, most significantly by progressing with collections inventories. As a demonstration of our commitment to this we have established a deadline of June 1983 which is about the time of the completion of the new building for the completion of all initial inventories of our objects in our collections. For this accelerated inventory program and other collections management needs throughout the Institution we are seeking an increase this year of approximately $1 million.

I might point out that after the time element is reached and we have completed our inventory I expect that we will decelerate any such fund requests timed with the completion of the center itself. In other words, as in past years we have built up to a certain critical stage in our timing for a significant advance. You will recall the bicentennial, we then decelerated our request for funds having accomplished the objective.

EXHIBITIONS REQUEST

A second area that we emphasized in our 1982 budget submission is exhibitions. We consider it to be essential to the museums to keep the exhibition spaces lively and reflective of the latest scholarship. As you know, Mr. Chairman, our curators who are scholars in truth perform their publications to a considerable extent in the preparation of exhibits themselves. These exhibits which represent a refined area of scholarship are in effect a testament to the work done by the curators as research professors as they would be in universities.

One serious deficiency in the Institution's exhibit programs over the years has been the lack of an adequate temporary exhibits gallery of sufficient size and quality to accommodate outstanding traveling exhibits coming from other countries or other places. This year with the aid of a large private donation we are nearing completion of a special exhibits gallery consisting of 14,000 square feet on the ground floor of the National Museum of Natural History/Museum of Man. This clearance of space is partly a result of our anticipation that the Museum Support Center will take some of the load off of spaces otherwise crammed in that museum with objects in storage.

The first show that we are going to have in this new gallery is "5,000 Years of Korean Art" which is scheduled to open on July 15 of this year. We are planning in the future to mount three new shows each year in the special exhibits gallery under Dr. Fiske's charge. Corporate and private funding will be sought for two of these exhibits and from federal appropriations we are seeking an additional $243,000 for temporary staff needed for the gallery.

Mr. YATES. As I read this in your justification my immediate thought is that having exhibitions of this kind in the Museum of Natural History indicates to me that facilities within the Smithsonian are readily available to house exhibits of oriental art for which you say you need a building.

Mr. RIPLEY. They are merely a forecast of what we could do. In other words, we have got to give the oriental gallery and the new Quadrangle galleries some kind of a launching and one way to do it would be to be able to show what we can do when we have that space. There is ample demand in Indian artifacts, in other cultural artifacts, in traveling shows for this new exhibits gallery that we are doing right now. We are not going to be able to possibly satisfy the requirement for the traveling shows that we anticipate in special exhibitions in the Quadrangle just by creating this one new gallery but it is a kind of teaser for events to come to do a great show which we have never been able to do before.

Mr. YATES. Well, I found it a teaser certainly.

"Five Thousand Years of Korean Art" being shown in 14,000 square feet, is that larger than your Quad exhibition space?

Mr. RIPLEY. No.

Mr. YATES. What is the Quad exhibition space for the Freer?

Mr. RIPLEY. I think it is something like 40,000 feet.

Mr. BLITZER. That exhibition space is just about double the Natural History gallery: 28,000 square feet.

Mr. YATES. Twenty-eight thousand?

Mr. RIPLEY. These are the kinds of things to come and that is one reason why it happens the scheduling of the Korean show which was totally independent of the Smithsonian was such that by appealing to the Korean museum we were able to get them to have it stay in the United States a month longer and our own feeling was that this would give the public the kind of intimation of the kinds of things that we would be able to do in the future when they have the new Quadrangle.

Mr. YATES. Also, Mr. Kennedy wants the George Washington exhibition.

Mr. RIPLEY. Well, he is going to have that in the Museum of American History. That is going to be a blockbuster of a show with all the false teeth. Isn't that right, Roger?

Mr. YATES. The wooden ones, too?

Mr. KENNEDY. Yes.

Mr. YATES. Every tooth.

Mr. RIPLEY. These are major exhibition programs.

Mr. YATES. What is that going to cost, $425,000?

Mr. RIPLEY. The Washington show?

Mr. YATES. Yes.

Mr. RIPLEY. What is the budget for that, Roger?

Mr. KENNEDY. Spread over two years. The first year about $450,000.

Mr. RIPLEY. This is the bicentennial.

Mr. YATES. It has caused an eruption in the staff because the staff says it has to be more than that. Four hundred twenty-five thousand dollars a year?

Mr. KENNEDY. Between $450,000 and $500,000 the first year and a continuation of the work into the second year's special exhibit budget.

Mr. YATES. The total cost would be approximately a million dollars.

Mr. KENNEDY. Yes, the total for that core show over two years.

Mr. YATES. Well, 450 and 450 is 900.

Mr. BLITZER. What Roger Kennedy and I call it is core, c-o-r-e.

Mr. YATES. C-o-r-p-s?

Mr. BLITZER. C-o-r-e.

Mr. YATES. I thought you were having personnel.

Mr. BLITZER. That is the basic Washington which will open on his birthday next year. That is essentially funded out of the current year's major exhibition funds.

Mr. YATES. Half a million, and twice half a million is a million.

Mr. BLITZER. The request in this budget is $800,000 and that is to extend George Washington and do exhibits about the life surrounding him and the events that took place in the late 18th Century and early 19th.

Mr. YATES. One of the little——

Mr. RIPLEY. We have a major exhibition program request in our budget.

Mr. YATES. I just want to return to George. To core George for just a moment and invite your attention to pages A-177 and A-178 which indicate that you are going from $800,000, $400,000 each year, to $500,000 for this year and $800,000 for the next year which is $1.3 million.

Mr. BLITZER. That is right, sir.

Mr. YATES. What about the overruns?

No overruns? All right.

Does that include the music, too?

Mr. KENNEDY. No, sir.

Mr. YATES. Having witnessed you as an impresario and doing very well, I wondered about that.

Mr. KENNEDY. We raised that and will continue to raise that from private sources.

Mr. YATES. The country is great then.

Mr. RIPLEY. Especially on the private side.

Mr. YATES. Well, pretty well on the public side, too.

That takes care of George. What other great exhibits are coming up?

Mr. RIPLEY. The $1 million request takes care of George and also Celebration.

Mr. YATES. Does Martha come along with George?

Mr. KENNEDY. Martha is included. She is present on the private side, too.

Mr. YATES. All right.

Mr. RIPLEY. The other big exhibition is the Renwick "Celebration: A World of Art and Ritual."

Mr. YATES. Will we have the opportunity in later testimony to learn how you propose to develop the George Washington exhibit when Mr. Blitzer's group and Mr. Kennedy's group come forward?

Mr. RIPLEY. Yes.

Mr. YATES. All right.

Mr. RIPLEY. We are also seeking upgrading of exhibit spaces in minor but important exhibit needs. We are seeking an additional $425,000 to the $1 million that is in this budget for those two major exhibitions.

EDUCATIONAL OUTREACH

Another priority area in our part of that budget request is educational outreach for which we are seeking $600,000 additional. The

most significant increase in this category is the Native American program which is responsive to the desires of the Native American community. We started the program in fiscal year 1977 and we sponsored, as you noticed on one of the charts, museum workshops, which served as a liaison between Native American and various Federal agencies on museum matters and we provided technical assistnce on site to Native American museums as Mr. Perrot has mentioned already.

Mr. YATES. What does that mean, on site? Does Mr. Perrot send some of your experts there?

Mr. RIPLEY. In the field.

Mr. YATES. I know, but do they come out of Washington or some place that is local?

Mr. PERROT. Depending upon the subject expertise is provided by members of our staff and colleagues from other parts of the country who work with representatives of the local communities. They present workshops and develop programs to further professional expertise in the communities involved.

UPGRADING OF NATIVE AMERICAN EXHIBITS

Mr. YATES. Is anything being done to upgrade the present Native American exhibits that the Smithsonian has in Washington?

Mr. PERROT. Yes, Mr. Chairman, there is a plan that is being developed by Dr. Fiske and his staff and I would suggest that he address that since he is more familiar with it.

Mr. YATES. Will we be given that opportunity later on?

Mr. RIPLEY. Would you like to do that?

Mr. FISKE. Whichever you prefer. We have a long-range exhibit plan and this plan calls for renovation of all of the Native American halls. Many of those halls that currently exist are badly outdated and desperately need renovation. We are very sensitive to this and we intend to proceed.

STATUS OF HEYE FOUNDATION COLLECTION

Mr. YATES. Mr. Kennedy and Charles Blitzer know of my interest in the collection of the Heye Foundation, the Museum of the American Indian in New York City, which is looking for a home. What is the status of that and what is its relationship to the Smithsonian? Would it be possible to get any of that material or any of those artifacts on permanent loan for the Smithsonian?

Mr. RIPLEY. Charles, could you speak to that?

Mr. BLITZER. Well, there may be two answers. On short-term, relatively—three, four, five to seven year loans—certainly we have been in discussion with them very recently for the presence of that material in the Museum of American History. The longer term resolution of that independent body's corporate objectives, the objectives of that museum, we cannot speak to for them.

Mr. YATES. Does this relate to Dick's outfit?

Mr. RIPLEY. No. We have to keep going with this as we can.

NATURAL HISTORY MUSEUM EXHIBITS REFURBISHMENT

Mr. YATES. This is your permanent exhibit.

Mr. RIPLEY. Yes.

Mr. YATES. Should it be upgraded?

Mr. FISKE. Very definitely.

Mr. YATES. How much money would it take to update it?

Mr. FISKE. Most halls in the Museum of Natural History cost between $250,000 and $350,000 depending on the extent of the renovation. This, of course, is exclusive of salaries. This only represents materials necessary for refurbishment.

Mr. YATES. Has that program been started yet, or is it in the planning stage or just in the dreaming stage?

Mr. FISKE. No, it is not in the active planning stage, it is on the drawing board. Frankly the problem that we face is with increasing expenses. It is taking us longer and longer to complete the dinosaur hall, which has been closed for more than two years now and the pace of progress has been slowed by inflation.

Mr. YATES. What can we do about it?

Mr. FISKE. There is a request.

Mr. YATES. Inflation is deflating your program.

Mr. FISKE. There is a request in the fiscal year 1982 budget for this purpose.

Mr. YATES. Two hundred forty-three thousand dollars.

Mr. FISKE. No, the other part of that, the $190,000 which will help us to pull ourselves even again and try to deal with inflation that has taken such a heavy toll over the last five or six years.

Mr. YATES. All right.

Continue, Mr. Ripley.

NATIVE AMERICAN PROGRAM

Mr. RIPLEY. Well, to finish with the Native American request, we are requesting aid in photography and photocopying services and for the purchase of some contemporary Indian ethnographic specimens for loan and traveling exhibitions.

ORIGINAL RESEARCH

As in the past, original research in the sciences, history and art, and American culture are integral to the Smithsonian. The additional amount of $1.3 million which we are proposing in the 1982 budget request for research builds on existing capabilities.

With regard to the Chesapeake Bay Center, we are requesting $150,000 to continue the operation of a watershed monitoring system. We had requested an increase of $200,000 for this purpose in fiscal year 1981 of which only $50,000 was appropriated. We are seeking the balance in this new year because of the significance of this program.

Also, another item of significant importance to us is the amount of $300,000 requested in the budget to re-establish the Research Awards Program. As the Chairman will recall, this was discussed in last year's budget hearings and mention was made of the importance of this program to the aspirations of our research staff and of our own administrative ability to assist the research staff. We feel that this is a significant item to us and we are requesting it in our budget.

ADMINISTRATION, FACILITIES AND PROTECTION SERVICES

Finally, in our Salaries and Expenses appropriation we are seeking an additional amount of $445,000 to strengthen several administrative offices and an increase of $1.1 million to meet facilities and protection services requirements that stem from operating our large and complex physical plant.

CONSTRUCTION REQUEST

In construction our revised requests for three appropriations total $15.7 million. These are to be used for construction and improvements at the zoo, restoration and renovation of buildings and Quadrangle planning, the latter of which, as you know, we are authorized to request the sum of $1 million in this budget year.

NATIONAL ZOOLOGICAL PARK CONSTRUCTION REQUEST

Our fiscal year 1982 request for zoo construction is $7.2 million of which most or $6 million is for the construction of an Aquatic Habitats Exhibit, the very ambitious and effective proposed exhibit which I have been looking over carefully with Dr. Reed and which I think could be a first in the zoo construction in the United States.

Mr. YATES. In what way a first? Are you talking about building an aquarium?

Mr. RIPLEY. No, sir. There will be some aquatic animals in it but it could not be described as an aquarium. Rather, it is an ecological setting in which animals and plants both in and out of the water are associated together as you have in a marginal situation a pond with, let's say, trout or other fish or vertebrae in the water and the planting overhead. Climate control and treatment would be very sophisticated and quite different from the normal aquarium kind of exhibit techniques which is tanks and an entirely under water presentation.

Mr. YATES. How many aquatic animals do you contemplate will be residents in your exhibit?

Mr. RIPLEY. Well, we are getting quite a lot of expertise in this connection. As you know, in our coral reef studies we built the first self-contained coral reef largely with support on an educational grant provision from the National Science Foundation and it is presently operating in the Natural History Museum building. It is tremendously effective, one of a kind, and is largely self-supporting; that is, the animals don't just die as they tend to in an aquarium because of the filtration and the production of chemicals and the reinstitution or the filtering of obnoxious chemicals that we are able to do with a closed system. It is very successful in maintaining itself and it becomes a stable environment.

I have an editorial I wrote about it, Mr. Chairman, in our January issue which covers something in short circumstances about that aquarium and I would think, if I may say so, that profiting from this kind of research our zoo aquatic habitat, and I hope Dr. Reed will agree with me, could have some of these kinds of features of environmental control so that we will be able to make these animals long lived and successful denizens of the habitat. Now $1.2 million of this request is for continued construction of a delicate animal facility at the Front Royal Conservation and Research

Center and some repairs and renovations both at Rock Creek and Front Royal.

RESTORATION AND RENOVATION OF BUILDINGS APPROPRIATION REQUEST

Our revised downward request for the Restoration and Renovation of Buildings Appropriation totals $7.5 million. Our continuing request for substantial annual moneys in this account represents the Institution's commitment to the appropriate care of our buildings, many of which are monumental or historical in character. We put a great deal of emphasis on this account because of its role in maintaining pleasant and healthy environments for our exhibits and for people to derive pleasure from viewing them and to permit proper care of the national collections.

QUADRANGLE PLANNING

Our revised 1982 budget request contains the request of $1 million, as I have said, for Quadrangle planning. You know the location area of that Quadrangle. We have a model of the proposed plan and we feel that we would be able to prepare with such funds all the plans necessary for awarding a construction project in fiscal year 1982.

Mr. YATES. Does that project also pertain to the Forrestal Building?

Mr. RIPLEY. I wish it were but it is not.

Mr. YATES. Why have you included the Forrestal Building?

Mr. RIPLEY. Well, because geographically we have to look at it so you are looking at the back of the Forrestal Building.

Mr. YATES. That is not the way you look at it.

Mr. RIPLEY. In scope, no. You have to stand up and go and look at the whole plan really to see where you are. The nearest part to us is Independence Avenue.

Mr. YATES. Let me see the castle.

Mr. RIPLEY. Yes.

Mr. YATES. You don't see the park.

Mr. RIPLEY. The park is there but you have to stand up to see it.

Mr. YATES. Go ahead.

Mr. RIPLEY. We have submitted a legislative proposal to OMB which has been approved and we have an authorization bill for the planning ceiling being raised to $1 million which we hope to submit shortly to the Congress. We require new authorization for that because of the increase in the amount.

During the past year there has been good progress with our plans and fund raising efforts. On January 8, 1981, a completed design concept was presented to the National Capital Planning Commission and approved. In 1980, as you know, the government of Japan donated money for the new center and from the Republic of South Korea we had a similar contribution of $1 million only last month. We presently are pursuing other contributions in foreign countries and from corporations and foundations within the United States.

I should say that with regard to the Korean presentation President Reagan expressed special appreciation for this as a significant

contribution from Korea to the Institution when the presentation was made by the President of Korea and stated that the museum will further enhance intercultural understanding and appreciation between the people of America and the peoples of Asia.

In that budgeting the Smithsonian plans to provide some $9 million towards construction from unrestricted Trust funds with a further reimbursable advance to be paid back over time from endowment funds of about $6 million for the parking garage. Even with our success to date it is clear that a pledge of support by the Congress consistent with that of the new administration would be a tremendous help to our own fund raising efforts. We are very eager to move ahead with Quadrangel development and planning, and as a joint enterprise between the Federal Government and outside contributors I might remind this committee that the cost to the Federal taxpayer will be significantly less as a result of our efforts especially in view of the considerable benefits to be offered.

SPECIAL FOREIGN CURRENCY PROGRAM REQUEST

That concludes my statement except for mention of the Foreign Currency Program, Mr. Chairman. That is the final appropriations account in our budget request and our request for this year totals $5.5 million. The proposed funds will be used to continue a program of grants to the United States' institutions for research in countries where excess local currencies are available, mainly India and Pakistan, because of restrictions in so many of the other countries and to add to the forward funded reserve $3.5 million for India and Pakistan and to add to the forward funded reserve in support of future programs of the AIIS, the American Institute of Indian Studies, $1 million and to initiate United States support to the international effort organized through UNESCO to restore and preserve the Indus civilization city of Moenjodaro in Pakistan, $1 million. That parallels other programs that we have attempted to support for the United States with these international efforts which have been coordinated through UNESCO such as the ones in Egypt.

These programs are all more fully explained in the budget document, Mr. Chairman. We will be very happy to respond to your questions and those of the members of the subcommittee.

Mr. YATES. Thank you, Mr. Ripley, for an excellent statement and for an excellent justification.

REVISED SCIENCE REPORT

Looking at the revised summary of your appropriations request, the comparison, between the 1981 approved appropriation of the Carter request and the Reagan budget, shows that the total for science for 1981 was $41,293,000. Was that approved by the Carter OMB at a level of $46,507,000 and reduced by the Reagan OMB to $45,828,000?

Mr. RIPLEY. Yes.

Mr. YATES. Were any of the activities in the science part of the budget hurt by the Reagan reduction?

Mr. RIPLEY. Well, I think that Dr. Challinor can answer that.

Mr. YATES. Are you going to be a good soldier and take them without any damage to your institutions?

Mr. CHALLINOR. The damage primarily, Mr. Chairman, will come from the cut in personnel. We had to give up all new positions in science. We would like now to use some imaginative administration to see how we can carry out these programs without the new positions. That is where the primary hurt will occur.

Mr. YATES. Thank you.

MAJOR ACQUISITION PROGRAM

Let me ask you a question about acquisitions. You requested $10 million of OMB for so-called special programs and that was eliminated. What was the $10 million to be used for? I know it would be for acquisitions but what would be the nature of the acquisitions that it was to be used for?

Mr. RIPLEY. I think Mr. Blitzer can answer that very effectively, Mr. Chairman.

Mr. YATES. We will determine that.

Mr. BLITZER. First I might ask with the Committee's permission to submit for the record the statement of this program.

Mr. YATES. That may be received in the record.

[See page 837.]

Mr. BLITZER. It has information about how we planned the program and also some comparative information with the Smithsonian.

Mr. YATES. What were the major acquisitions?

Mr. BLITZER. Well, across the board.

Mr. YATES. Was the $10 million for acquisitions only for the Museum of History and Art?

Mr. BLITZER. No, every Smithsonian museum, with the possible exception of Air and Space, which so far has the policy of not purchasing.

Mr. YATES. Ten million dollars. How much is available in your current request for acquisition?

FEDERAL ACQUISITIONS BASE

Mr. BLITZER. Federal appropriations in this year's request are $850,000.

Mr. YATES. Quite a difference.

Mr. BLITZER. For all the Smithsonian's museums.

Mr. YATES. That is quite a difference.

Mr. BLITZER. It makes it impossible for us to buy anything of major importance with appropriated funds.

Mr. YATES. Would you use private funds for acquisitions?

Mr. RIPLEY. We have a quota of private funds as you know, Mr. Chairman.

Mr. YATES. Was that a million dollars?

Mr. HOHENLOHE. A million dollars.

REVISED HISTORY AND ART REQUEST

Mr. YATES. Let's turn now to History and Art. The amount that Congress approved in 1981 was $18,880,000, the amount approved by the Carter OMB was $21,465,000. The amount approved by the

Reagan OMB is $21,154,000. Now where did they hurt you here? You have a $300,000 reduction from the Carter OMB roughly.

Mr. RIPLEY. The principle here again, as in science, is in positions. We have lost 15 positions in total.

Mr. YATES. What kinds of positions? Were they specified or are you allowed to deduct the positions from any of your activities?

Mr. BLITZER. Two different answers. We were not allowed to ask for the specific new positions that are in the 1982 budget—that in our case, four of those—and then we were told to eliminate eleven positions in the base.

Mr. YATES. What four positions did you want?

Mr. BLITZER. In the budget?

Mr. YATES. Yes.

Mr. BLITZER. In the Carter budget, a conservator for the Freer, a research curator for the Museum of African Art, someone skilled in graphics design for the Cooper Hewitt, and a research assistant for the Joseph Henry papers. Those four were eliminated and then we had to go into the base.

Mr. YATES. Where did you take them from your base?

Mr. BLITZER. One historian from the National Portrait Gallery.

Mr. YATES. Did Mr. Sadik approve of that?

Mr. BLITZER. No. One custodian from the Freer.

Mr. YATES. Did Mr. Lawton approve of that?

Mr. BLITZER. I could give you a general answer for all eleven.

Mr. YATES. Regretfully.

Mr. BLITZER. Yes. In the Museum of American History one conservator, one electrician, one exhibit specialist and one technician in photographic history.

Mr. YATES. Mr. Kennedy is not really hurt by that, is he, in the sense that we are going to get $1.3 million for your George exhibition. Won't you be able to supply your needs through that?

He shakes his head no.

Mr. BLITZER. Should I go on?

Mr. YATES. Of course you should go on.

Mr. BLITZER. A clerk-typist in the National Museum of American Art, a custodian in the Hirshhorn Museum and three custodians on the staff of the Fine Arts and Portrait Gallery.

Mr. YATES. What does a custodian do?

Mr. BLITZER. Clean the building, take care of the exhibits.

Mr. YATES. All right.

Mr. BLITZER. And of course, Mr. Chairman, we lose the associated funds.

Mr. YATES. Does that mean your museums won't be as clean as they have been in the past?

You shake your head yes. Does that mean yes they will not be?

Mr. BLITZER. Yes, they will not be.

Mr. RIPLEY. Yes, there will be more chewing gum wrappers around.

Mr. YATES. Would you be better off if you contracted that work out?

Mr. RIPLEY. I don't think so. We made studies on contracting with a facility for their services and they usually end up by being somewhat more expensive.

Mr. YATES. Security is also a problem, isn't it?

Mr. RIPLEY. Yes, security is also a problem because even having uniformed people around helps to maintain a kind of level of security.

SCIENCE POSITION REDUCTION

Mr. YATES. Dave, where would you lose your people?

Mr. CHALLINOR. There is a whole list here and I can read it or submit it for the record.

Mr. YATES. Put it in the record.

[The information follows:]

FISCAL YEAR 1982 BUDGET AMENDMENT—SMITHSONIAN SCIENCE ACTIVITIES

The following thirty-two positions were cut from the Science Units as a result of the fiscal year 1982 budget amendment. Nine of the thirty-two were requested as an increase in the fiscal year 1982 budget to Congress. The remaining twenty-three are reductions to the base which will be accomplished through attrition.

National Museum of Natural History: Archeologists, Entomologist, Museum Technician, Custodial Worker, Custodial Worker, Clerk, Clerk-Typist, and Clerk-Typist.

Smithsonian Tropical Research Institute: Diving Safety Officer, Clerk, and Clerk.

National Zoological Park: Gardner, Administrative Services Assistant, Auto Mechanic, Clerk-Typist, Clerk-Typist, Custodial Worker, and Custodial Worker.

Radiation Biology Laboratory: Plant Physiologist, Physical Science Technician, and Biological Laboratory Technician.

National Air and Space Museum: Supervisory Exhibits Specialist, Spacearium Chief, Meteorologist, Curator, Museum Specialist, and Photo Archivist.

Chesapeake Bay Center for Environmental Studies: Computer Programmer.

Smithsonian Astrophysical Observatory: Astrophycist, Astrophycist, Safety Specialist, and Bus-Driver/Mechanic.

PUBLIC SERVICE POSITION REDUCTION

Mr. YATES. What about Public Service? You lost only $23,000.

Mr. RIPLEY. Yes.

Mr. YATES. Is that for jobs, too?

Mr. RIPLEY. Two positions.

Mr. YATES. Two positions. Which positions did you lose?

Mr. RIPLEY. Two clerk typists, one in the press and one in the Office of the Assistant Secretary for Public Service.

MUSEUM PROGRAMS POSITION REDUCTION

Mr. YATES. Museum Programs, Mr. Perrot, you will receive $8,895,000 in 1981. You went to the Carter OMB and you received $10,354,000 and you were cut about $250,000 by the Reagan OMB.

Mr. RIPLEY. There are 12 positions excised here.

Mr. YATES. All right. Do you want to put those 12 in the record rather than itemize them?

Mr. RIPLEY. Yes.

[The information follows:]

FISCAL YEAR 1982 BUDGET AMENDMENT—SMITHSONIAN MUSEUM PROGRAMS ACTIVITY

The following twelve positions were cut from the Museum Programs Units as a result of the fiscal year 1982 budget amendment. Seven of the twelve were requested as an increase in the fiscal year 1982 budget to Congress. The remaining five are reductions to the base which will be accomplished through attrition.

Office of Museum Programs: Psychologist.

Office of Exhibits Central: Forklift Operator.

Office of the Registrar: Transportatin Specialist.

Conservation Analytical Laboratory: Clerk Typist, Radiographer, Information Officer, Conservation Coordinator, and Conservator.

Smithsonian Institution Libraries: Secretary, and Library Technician.
Traveling Exhibition Service: Exhibition Coordinator, and Education Specialist.

SPECIAL PROGRAMS AND ADMINISTRATION

Mr. YATES. From the Carter OMB you received $8,806,000 for special programs from the Reagan OMB you will receive $8,786,000, good to bad.

Mr. RIPLEY. A new American conservative.

Mr. YATES. You received $8,366,000 in 1981 for administration and that was supposed to go to $9,876,000 in 1982 and you wound up at $9,705,000 under OMB. Are those positions lost, too?

Mr. RIPLEY. There were 96 positions.

LOSS OF BASE AND NEW POSITIONS

Mr. YATES. Are you losing present positions or are those losses in forward positions?

Mr. RIPLEY. Mr. Jameson.

Mr. JAMESON. Thirty-six of the 96, Mr. Chairman, are positions that are prospective in the 1982 budget which we are not now seeking. The other 60 are positions presently authorized to the Institution and the presumption is that they are either now filled or would be sometime in 1982.

Mr. YATES. How many of those positions are so important that if the committee were to accept the Reagan budget recommendations you might feel impelled to use your private funds to hire some people?

Mr. JAMESON. There is a quite careful study worked out rationally, I think, Mr. Chairman, between the use of our Trust funds for positions and the use of Federal funds for positions and we would not use Trust funds to restore any of these cuts, either the 36 new or the 60 in the base.

POLICY FOR USE OF TRUST AND FEDERAL FUNDS

Mr. YATES. Would you remind me of what that rationale is, Mr. Jameson?

Mr. JAMESON. Yes, sir. If I might also call on Mr. Hohenlohe as he might help. In our Trust funds there are activities that are paid for with either restricted or unrestricted nonappropriated Trust funds We have maintained the employment of our auxiliary activities, for instance, entirely with Trust funds.

Mr. YATES. Give me an example.

Mr. JAMESON. The Magazine, the Exposition Books, the Museum Shops are three examples.

Mr. YATES. You would not want the Federal Government making money.

Mr. JAMESON. Would you repeat that?

Mr. YATES. I say you would not want the Federal Government making money.

Mr. JAMESON. The second general category is in what we call our support and technical service units such as personnel, budget, supply, procurement, libraries and some others. In these units we have maintained a balance of staffing between Federal and nonappropriated Trust funds that represents the support that these central support units give to the entire Institution, including those activities that are supported from Federal appropriations as well as grants and contracts and Trust fund activity. That balance over the

years has remained approximately 60 Federal-40 trust in those central support units.

There are some activities that have restricted Trust funds. The principal example is the Freer Gallery of Art that uses Trust funds for a significant portion of its program. Thanks to some suggestions from your committee and the Senate committee and thanks to Sam Hughes' report to the Regents several years ago, we now produce and give to you a consolidated budget and in the formulation of that budget we are quite mindful of the areas that we believe to be properly supported with Trust funds and Trust fund employment and Federal funds and Federal employment. Federal employment by and large over the years has gone to maintenance and protection of the physical plant, the basic research programs of the Institution, the core exhibit programs and, as I say, a portion of administrative and technical support.

Mr. YATES. How important are those positions, are they so important that you might be willing to trade off some of your program increases for the people? Is that under consideration at all?

I notice, for example, that the $1 million from the base program for Restoration and Renovation of Buildings was moved over to the South Quadrangle Development. Can that same kind of thing be done for personnel?

PERSONNEL CEILINGS

Mr. JAMESON. One thing I think we would have to do, and I would stand corrected by our Budget Officer and perhaps others, is to examine the new way OMB is going in fiscal year 1982 to manage employment totals. As you know, sir, for all years through the current years they have managed employment by looking at the end of the fiscal year but in fiscal year 1982 they go to a process of counting the man years or work year equivalents and we have a reduced ceiling. I am not sure that we know at this point enough about how the full time positions relate to the man year equivalents so that I can answer that question very readily at this point.

Jon, would you like to comment?

Mr. YELLIN. Yes. We have an amended request for 3,466 positions and this will translate to 3,225 full time equivalent positions or work years so there is a lapse of over 200 positions. To the extent that positions are added on to the budget request, we would not have a commensurate increase in work years from OMB, making it more difficult for us to remain within the work year ceiling assigned to us by OMB.

Mr. YATES. How many positions are there for the Smithsonian that are not included in that figure? How many positions are supported by your direct and indirect private funds?

Mr. YELLIN. These are all Federal positions.

Mr. YATES. How many are funded out of your other funds?

Mr. RIPLEY. Chris, could you give us that?

It usually runs about two-thirds/one-third.

Mr. HOHENLOHE. Approximately 1100 employees on the Trust fund side, including Federal grant and contract employees.

EFFECT ON REDUCTIONS ON EXHIBITS

Mr. YATES. All your museums, which are among the jewels of Washington, are for the millions of Americans who come here. I think you said 20 million visit your museums and 21 million go to see the exhibits that are shown there. How will the new budget affect your schedule of exhibits? As I understand it, most of your schedules for exhibits for fiscal 1982 are already prepared. Is my impression correct?

Mr. RIPLEY. I would think so because the Smithsonian uses a lot of lead time for planning.

Mr. YATES. That is right. Will the new budget affect those?

Mr. RIPLEY. I don't see exactly that it would because what we are talking about as far as reducing personnel does not really impinge on planning.

Mr. YATES. I switched. I should have said let's look at another point. Personnel does bear on that, does it not?

Mr. RIPLEY. It does bear to a certain extent on maintaining the exhibitions.

Mr. YATES. The amount that is made available for your exhibits still remains, is that what you are saying?

Mr. RIPLEY. Yes.

Mr. YATES. There are no consequences to the total Smithsonian budget other than to personnel, is that correct?

Mr. RIPLEY. Well, I suppose in a broad brush kind of sense.

Mr. YATES. Let's do it step by step then. For exhibits, there is no generating impact?

Mr. RIPLEY. We don't see it specifically.

Mr. HUGHES. For starters, there is a $10 million acquisition fund.

Mr. YATES. Before you answer I should caution you that Mr. Blitzer has held up his hand.

Mr. HUGHES. Mr. Blitzer.

Mr. YATES. You have a schedule of exhibits. There has been a loss in funding to some extent. That loss in funding is attributable, as I understand it, to loss of positions. Does that loss of positions interfere with the showing of any of your exhibits or the funding of those exhibits?

Mr. BLITZER. I would say absolutely yes.

Mr. YATES. Then you disagree with your boss Mr. Ripley, because as I understand his answer he said he does not think so.

Mr. RIPLEY. Well, it depends how you analyze the particular losses.

Mr. YATES. Let's analyze them.

EXHIBITS PRESENTATION AT THE NATIONAL MUSEUM OF AMERICAN HISTORY

Mr. BLITZER. For example, the Museum of American History will lose an exhibit specialist. If I understand what an exhibit specialist does, that will in some way delay or diminish the exhibit program and that is a loss in the base. For example, I was hoping under the Carter budget to get the graphics specialist connected with the Cooper Hewitt exhibits program.

Mr. YATES. So what will happen now? Will Mrs. Taylor or you contract out for services that that person would have given to the Smithsonian or to you?

Mr. BLITZER. They have for all these years been contracting out for their exhibits.

Mr. YATES. And will they continue to do that?

Mr. BLITZER. Yes, and their judgment and our judgment is that it is an inefficient way to do that.

Mr. YATES. So no money will be gained by the Government as a result of that? What happens? Will we have to increase the Cooper Hewitt base in order to provide funds for the graphic designer? Who will not be there?

Mr. BLITZER. They will feel the squeeze.

Mr. RIPLEY. They will cut out something else.

Mr. YATES. They will cut out something else.

Are you saying they are hurt or not hurt?

Mr. RIPLEY. I am saying that in that respect they are hurt.

Mr. YATES. In that respect they are hurt but overall they will not be. They will continue to operate and the public will see the exhibits. Perhaps they won't see one graphic design or the touch of a graphic designer upon certain exhibits.

Mr. BLITZER. The latter is what they mostly had in mind. The National Museum of Design should set a very high standard, so they will be hurt.

Mr. YATES. How about Mr. Sadik? I understood you to say he protested.

Mr. BLITZER. He didn't like it is what I meant to say.

Mr. YATES. For a historian?

Mr. BLITZER. Yes.

Mr. YATES. Do they have to go to the Library of Congress for their information now?

Mr. BLITZER. That is what the historian did.

Mr. YATES. He went to the Library of Congress.

Well, we better find out what their budget is like.

Mr. BLITZER. These are historians at the Portrait Gallery who spend their time doing research.

Mr. YATES. And what they do is very interesting. The public that looks at their pictures and reads the accompanying descriptions are gratified by what they are able to learn there so it does have meaning, and I am not being flip or superfluous about this. I am trying to find out what the impact is.

Mr. HUGHES. Mr. Chairman.

Mr. YATES. As an old budget officer.

Mr. HUGHES. Old anyway.

Mr. YATES. All right. That is what I emphasized.

APPLICATION OF THE OMB REDUCTION

Mr. HUGHES. It seems to me we have a money management and a personnel management problem which we have tried to cope with as we got the OMB markups. The adjustments we have made we have spread around as widely as at least for the time being we could handle and we have to watch those as we go. The deterioration in services for the Institution as a whole I think is somewhat inevitable. We can make do, we can try and organize ourselves

better, we can mobilize the resources we have but the changes are very difficult to particularlize rather than talking about whether it is American history or Mr. Sadik's world or the castle or wherever. There are subtle differences in maintenance, in protective services, in historian services and so on that are very difficult to identify and pinpoint.

Mr. YATES. That is why I asked you the question. This committee has the task of trying to find out how much money to approve for your operation. Occasionally the committee goes over the budget as it did for the museum support building last year because we thought that was a very important function of the Smithsonian that you have to have that building.

What I am trying to find out as I go through this budget with you now is how hurtful are these reductions? Are there any of the reductions that ought to be restored? That is what I am trying to find out. Now you have the task of trying to defend the administration's budget and I have the task of trying to pull it out of you. So far it has not been very successful because Mr. Ripley says you are going to be good soldiers.

Mr. HUGHES. Being a good soldier means accepting, in my perception, a deterioration to some extent reflected in the decline and the numbers of personnel of the services rendered to the public by the Smithsonian. I am assuming they are reasonably efficient and assuming that we have been.

Mr. YATES. I have that impression.

Mr. HUGHES. If that be the assumption, then a decline in the number of personnel below those we sought and indeed below base levels will be reflected in some deterioration of service and it may be very diffuse, it is hard to particularize what is the cost of a loss of a historian. I don't know how you would do that but we thought it was useful.

RESTORATION AND RENOVATION OF BUILDINGS REDUCTION

Mr. YATES. Let's go to the next entry, Restoration and Renovation of Buildings where you lost a million dollars and you are going to keep $7,500,000. Are you all through with the repairs on the Renwick?

Mr. RIPLEY. No.

Mr. YATES. So that will have to proceed, won't it?

Mr. PEYTON. Yes, sir.

Mr. YATES. Mr. Peyton, what will happen as a result of losing the million dollars?

Mr. PEYTON. We have assessed this on a number of projects, and most of the emphasis is in the facade and terrace area, where we feel that we can afford a stretchout. We will have to ask for this money in fiscal year 1983, so it amounts to a one-year deferral.

Mr. YATES. Will it cost you more in 1983?

Mr. PEYTON. Yes, sir, it will.

Mr. YATES. How much more will it cost?

Mr. PEYTON. In general about 12 percent, because that is what the inflation rate is.

Mr. YATES. So we are gambling on a greater prosperity in 1983 by not paying for it now, right?

Mr. PEYTON. Well, I guess there is an economic theory relating to constant dollars.

Mr. YATES. This is where cost reductions will occur. You will have available $685,000 which is a reduction of about how much?

Mr. RIPLEY. Seventy thousand dollars.

Mr. YATES. What were you going to use the additional money for, in general improvements, you have an increase of almost $400,000?

Mr. PEYTON. One of our problems the Institution, as you are well aware, is the constant struggle to identify new space or to get better utilization of what we have. The two items cut in the general category were space studies in the Arts and Industries Building and the basement of the Castle. We want to eke out more usable space in those two buildings.

Mr. YATES. Could you not use the corridor like the Library of Congress?

Mr. PEYTON. In some cases, but we must consider fire and safety regulations.

Mr. YATES. I notice, too, that the American Art/Portrait Gallery Building had a roof replacement this year. We have more trouble with roofs in this town. Then you have to repoint the facade. You are going to repoint the facade for $175,000 instead of $200,000. The Arts and Industies building has a bad roof, too, and you are going to spend $750,000 for the roof and exterior renovation as part of an overall appropriation that was given to you in part from 1977 to 1980. Now the Hirshhorn building resurfaced for $50,000 which is for the plaza. Is that the area out in front of the building?

Mr. PEYTON. No, sir, it is the paved area underneath the building and extending out to the sides.

Mr. YATES. Where they serve the tea?

Mr. RIPLEY. That general area, yes.

Mr. YATES. I notice there will be a much larger cost in 1983, $1.7 million for the Renwick Gallery. They eliminated $250,000 in spite of your generosity, right? I hear you gave them the Renwick Gallery for a lovely party and they cut you, right? Don't give it to them any more.

Mr. PEYTON. This was our decision. They selected the million dollars.

Mr. YATES. I see. Did you call on anybody? Did you call anyone to tell them what OMB was doing to you after what you had done for them?

Mr. PEYTON. No, sir.

Mr. YATES. You did not?

Mr. PEYTON. No, sir.

Mr. YATES. You don't think there is such a thing as *quid pro quo?*

No comment. All right.

You have $2,055,000 for the facade, roof and terrace repairs. Now will any of this reduction result in any kind of a dangerous condition for the public or to the employees?

Mr. PEYTON. No, sir. Based on our best judgment, we retained all of the funds that we asked for, for fire protection and safety.

Mr. YATES. They didn't cut you on that. They cut electrical renovation though, they cut you back to $110,000 from $150,000. You have bad wiring in the castle? What is that about?

Mr. PEYTON. This is in part the removal of some wiring that is no longer needed, that has been superseded by newer circuits; and in the basement, we have quite a jumble of wiring.

Mr. YATES. Shall this committee let you go with your cut or should we put the money back? What would you do if you were sitting on this side of the table?

Mr. PEYTON. I would hope you would approve the $7.5 million.

Mr. YATES. Why didn't you ask for the other million then?

Mr. PEYTON. Well, as we pointed out in the budget documents, we have an anticipated backlog over a five-year period of approximately $50 million, so it is a matter of trying to run on the funds available and allocating them where they are most needed.

Mr. YATES. All right. We will try to get you the $7.5 million.

Now suppose that were to be cut further, what would happen? Suppose it were further reduced by $100,000; would that jeopardize your program?

Mr. PEYTON. It is possible that it might.

Mr. YATES. I suppose that what all of you are trying to say is that this is bare bones.

Mr. RIPLEY. Yes.

Mr. YATES. Is this a luxurious budget?

Mr. RIPLEY. I would hestiate to describe it as a luxurious budget.

Mr. YATES. Would you describe it as reasonable?

Mr. RIPLEY. I think it is a bit austere, reasonable under the circumstances perhaps.

THE BOARD OF REGENTS

Mr. YATES. Would you furnish the committee with the current list of the Board of Regents? The one we have is dated September 30, 1979. This does not show the regents emeritus, does it?

Mr. RIPLEY. We can supply those for the record also, Mr. Chairman.

Mr. YATES. How many are there? I know of only two. Are there more than two?

Mr. RIPLEY. There are quite a lot.

Mr. YATES. I thought it was a distinctive list. It gets much less distinctive.

Mr. RIPLEY. Fifteen distinguished citizens of the United States now known as regents emeritus.

These are all graduates, aren't they?

[The information follows:]

REGENTS EMERITUS

Honorable George H. Mahon, 1200 N. Nash Street, Apt. 1115, Arlington, Virginia 22209.

Dr. Jerome C. Hunsaker, 10 Louisburg Square, Boston, Massachusetts 02108.

Dr. Crawford H. Greenewalt, Box 2652, Greenville, Delaware 19807.

Honorable J. William Fulbright, Suite 600, 815 Connecticut Avenue, Washington, D.C. 20006.

Honorable Hugh Scott, 3014 Woodland Drive, N.W., Washington, D.C. 20008.

Honorable Thomas J. Watson, Jr., Old Orchard Road, Armonk, New York 10504.

Honorable Robert F. Goheen, Old Orchard Circle, Princeton, New Jersey 08540.

Honorable Sidney R. Yates, U.S. House of Representatives, Washington, D.C. 20515.

Honorable Frank E. Moss, 1111-19th St., N.W., Suite 1000 Washington, D.C. 20036.

Honorable Elford A. Cederberg, Cederberg & Associates, Crilley Exec. Suite 323, 218 N. Lee Street, Alexandria, Virginia 22314.
Hon. Claiborne Pell, United States Senate, Washington, D.C. 20510.
Honorable Lindy (Mrs. Hale) Boggs, U.S. House of Representatives, Washington, D.C. 20515.
Honorable William E. Minshall, 8120 Kerry Lane, Chevy Chase, Maryland 20015.
Dr. Caryl P. Haskins, Suite 600, 2100 M Street, N.W., Washington, D.C. 20037.
Honorable Robert B. Morgan, P.O. Box 397, Lillington, North Carolina 27546.

MEMBERS OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION

Warren E. Burger, The Chief Justice of the United States, ex officio, Chancellor.
George H. W. Bush, The Vice President of the United States, ex officio.
Henry M. Jackson, Senator from Washington.
Barry Goldwater, Senator from Arizona.
Edward P. Boland, Representative from Massachusetts.
Silvio O. Conte, Representative from Massachusetts.
Norman Y. Mineta, Representative from California.
David C. Acheson, Citizen of the District of Columbia.
Anne L. Armstrong, Citizen of Texas.
J. Paul Austin, Citizen of Georgia.
William G. Bowen, Citizen of New Jersey.
William A. M. Burden, Citizen of New York.
Murray Gell-Mann, Citizen of California.
A. Leon Higginbotham, Jr., Citizen of Pennsylvania.
Carlisle H. Humelsine, Citizen of Virginia.
James E. Webb, Citizen of the District of Columbia.

THE ESTABLISHMENT

Mr. YATES. Now you have what is known as The Establishment: Jimmy Carter, President of the United States; Walter Mondale, Vice President, and so forth. You will be updating that as well?

Mr. RIPLEY. Yes, sir. There is a quality of inevitability about the changes, I am afraid.

CAFETERIA POLICY AT SMITHSONIAN MUSEUMS

Mr. YATES. We have a letter dated 30 December 1980 addressed to me as Chairman from Mr. Leo E. Hollenbeck, Jr. On the same day he wrote a letter to you in which he said:

> This past Saturday Kevin and I had to eat our brown bag lunch in the cold while visiting the Mall museum because the Smithsonian makes no provision for brown baggers.

Why don't you make a provision for brown baggers? Can they go into your cafeteria with their brown bag and eat?

Mr. RIPLEY. Mr. Jameson I think got that letter on my behalf.

Mr. JAMESON. It is a troublesome problem but it is one that we need to do some more work on. I have the answer from Mr. Hollenbeck.

Mr. YATES. Do you want to put your answer to Mr. Hollenbeck into the record?

Mr. JAMESON. Yes.

Mr. YATES. I think this record ought to be complete.

[The letter follows:]

SMITHSONIAN INSTITUTION
Washington, D.C., January 6, 1981.

Mr. LEO E. HOLLENBECK,
Baltimore, Md.

DEAR MR. HOLLENBECK: Mr. Ripley has asked me to reply to your letter of December 30th regarding your family's unsuccessful effort to eat lunch at the Smithsonian.

Unfortunately, the situation you describe is one in which we cannot see an easy solution. Because of widely differing collections, architecture and programs, each of the Smithsonian museums establishes its own safety and security requirements. In the National Museum of American History (formerly the National Museum of History and Technology), for example, the cafeteria is in a basement location where it is difficult to supervise the transportation of bag lunches from the building entrance to the cafeteria. In the past, incidents have occurred where food was smeared on exhibits or left behind, resulting in damage to the exhibits and the building. As a result, the museum staff decided to prohibit any food or drink from being carried through the building. The only one of our museums on the Mall which accommodates bag lunches is the National Air and Space Museum, where security considerations are somewhat different, and then prior reservations are required.

We are, of course, sympathetic to family, student and other groups who wish to save the expense of buying meals while they tour. But the Institution's restaurants frequently operate at capacity with paying customers who understandably object when they are forced to wait while non-paying persons use the facilities. Our desire is to serve as many of the people who visit the Smithsonian as possible. Given the lack of space and the needs of our millions of visitors each year, the decision we have made seems to us to be the best, even though we realize that it does not satisfy everyone.

I am sorry that you and your son were inconvenienced and I hope that you can return again under more favorable conditions.

Sincerely,

RICHARD GRIESEL,
Business Manager.

THE ESTABLISHMENT

Mr. RIPLEY. Would you be interested in a present version of The Establishment?

Mr. YATES. Sure. How did you happen to get the name The Establishment?

Mr. RIPLEY. That was in the statute.

Mr. YATES. Was it? Do you mean in the 1846 Act?

Mr. RIPLEY. It was not invented by a recent novelist as a derogatory term.

Mr. YATES. In The Establishment the statutory members are the President, the Vice President, and so forth. Well, all right. We will put The Establishment in the record then.

[The information follows:]

THE SMITHSONIAN INSTITUTION

The Smithsonian Institution was created by act of Congress in 1846 in accordance with the terms of the will of James Smithson of England, who in 1826 bequeathed his property to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." After receiving the property and accepting the trust, Congress incorporated the Institution in an "establishment," whose statutory members are the President, the Vice President, the Chief Justice, and the heads of the executive departments, and vested responsibility for administering the trust in the Smithsonian Board of Regents.

THE ESTABLISHMENT

Ronald Reagan, President of the United States.
George H. W. Bush, Vice President of the United States.
Warren E. Burger, Chief Justice of the United States.
Alexander M. Haig, Jr., Secretary of State.
Donald Regan, Secretary of the Treasury.
Caspar W. Weinberger, Secretary of Defense.
William French Smith, Attorney General.
James G. Watt, Secretary of the Interior.
John R. Block, Secretary of Agriculture.
Malcolm Baldridge, Secretary of Commerce.
Raymond J. Donovan, Secretary of Labor.

Richard S. Schweiker, Secretary of Health and Human Services.
Terrel H. Bell, Secretary of Education.
Samuel R. Pierce, Jr., Secretary of Housing and Urban Development.
Andrew L. Lewis, Jr., Secretary of Transportation.
James B. Edwards, Secretary of Energy.

Mr. YATES. I think we can break for lunch now and come back at one thirty.

May I thank you very much for bringing the members of your various—I was going to use the term establishment until then—activities. I am sure that many of them find the proceedings wearing and perhaps even boring. I am glad we met them all and I am sure the committee is. If they want to leave, we have no objection to it; if they want to come back and listen, that is fine, too.

Mr. RIPLEY. We will count on bringing the troops.

Mr. YATES. Thank you very much.

AFTERNOON SESSION

Mr. YATES. Let us put into the record at this point the document entitled A Proposal for a Major Acquisition Fund for the National Museums of the Smithsonian Institution.

[The information follows:]

A PROPOSAL FOR A MAJOR ACQUISITION FUND FOR THE NATIONAL MUSEUMS OF THE SMITHSONIAN INSTITUTION

The plan we are proposing here is designed to benefit not so much the Smithsonian Institution as the millions of visitors from every state of the Union who come to the national museums each year -- an estimated 25 million visits this year. These are people who view the national museums as their museums, and the national collections as their collections, and who quite properly take pride in these institutions which they support through their taxes. The Smithsonian, for its part, feels a deep sense of responsibility to insure that the national collections are worthy of their name and that they will continue to be a source of pride and satisfaction to the nation. This sense of responsibility is reflected in the Institution's continuing efforts to raise non-appropriated funds for the support of all its programs, including collections acquisitions, but it also leads us on occasion to inform the Congress of special needs that can only in our judgement be met by a special infusion of appropriated funds.

The Need. The history of the Smithsonian's museums, their status as national museums, and their location in Washington combine to create special problems for them in the area of acquisitions. Many of these problems result simply from the fact that in some fields, and notably in the arts, the Smithsonian for nearly a century was essentially passive and haphazard in its collecting activities. This means that virtually all our museums must now exert a special effort to build up appropriate and representative collections of objects that could have been acquired with relative ease and little expense some generations ago. Unfortunately, the Smithsonian and its museums did not over the years build up the substantial endowment funds that now play such a key role in the acquisition programs of great private museums. The Board of Regents over the past few years has attempted to remedy this situation, and continues to do so, but here again the task of catching up is large and difficult and we can not expect a solution to our problem along these lines for many years to come. Finally, it can not be denied that the status of our museums as the national museums, and their location in Washington, largely deprives them of the sort of community-based local support that is so important to the great private museums of the United States. Indeed, the Institution is sensitive to the problems that might be raised by our competing agressively for support with private museums in their own localities, and attempts instead through a number of programs to assist and strengthen these museums.

For all these reasons, we feel that it is most appropriate to turn to the Congress for assistance in supplementing our own efforts in the area of major acquisitions.

What is at stake is nothing less than the ability of the Smithsonian's national museums to continue to acquire objects and collections of objects of the greatest importance for the benefit of future generations. In the face of the most extraordinary inflation in the prices of works of art of all kinds -- "primitive" art, decorative arts and photographs no less than fine arts -- and in the face also of apparently unlimited demand for such objects from private collectors and investors here and abroad, as well as private and public museums throughout the world, our national museums can no longer rely solely upon the traditional sources from which their collections have come: private gifts and bequests, modest annual acquisition appropriations for some of our museums, and Smithsonian trust funds.

It is scarcely necessary this year to speak at great length about the pace at which art prices have been rising. The recent sales of a Turner painting for seven million dollars, and of a Van Gogh for five million dollars suffice to make the point; sales of individual works for one or two million dollars, which used to be front page news, no longer even elicit much comment.

Another way of stating the need is simply to mention some objects or collections that have recently been offered to the Smithsonian. These include what is probably the finest collection of African art in private hands in this country; the most important set of murals painted by Thomas Hart Benton; a collection of more than 100 paintings of American Indians by Henry Inman; an unparalleled collection of more than 7,000 portrait photographs and photographic negatives from the era of the Civil War, including many of the most important photographs of Abraham Lincoln and most of the portrait photographs by Matthew Brady; an extremely important sculpture by Gonzales, a figure of great historical and aesthetic importance. The prices asked for these objects and collections range from $1,250,000 to approximately $4,000,000; and in several cases these prices would be much higher if they did not represent substantial contributions on the part of the owners.

It should also be noted that in several of the instances mentioned above, our inability to purchase these objects may result in their entering private collections (as did the Turner and the Van Gogh, apparently), while our inability to purchase the collections will in all probability result in their being broken up and sold item-by-item.

What Has the Smithsonian Done? Faced with the need outlined above, the Regents of the Smithsonian voted three years ago to make available $1,000,000 a year of unrestricted trust funds, for an initial period of five years, for major acquisitions by our museums. In addition, faced with the extraordinary case of the Athenaeum portraits of George and Martha Washington, the Regents appropriated an additional $1,750,000 over and above the amount provided by the five-year program.

A brochure describing the operation of the Institution's privately-funded program for major acquisitions, and summarizing its results over a two-and-a-half-year period, is attached. We are particularly proud of the fact that, during the period covered by this report, a Smithsonian expenditure of $3,122,500 produced matching gifts in money and in kind amounting to $1,166,894.

We are hopeful that economic conditions, including such factors as inflation and the performance of our auxiliary activities, will permit the completion of the first five-year program and its continuation beyond that period. It is unlikely, however, that the Institution will be able to increase the size of this program in the foreseeable future, and thus we face the prospect that what was intended to be a fund for "major" acquisitions will increasingly be limited to acquisitions in the middle range. Nevertheless, the Regents have shown their concern in the most tangible way and can be expected to continue to do so to the extent that resources permit.

How Would the Fund be Administered? We would propose that the major acquisition funds be appropriated without fiscal year limitations. If this were done, we would invite each of our museums to submit proposals, through regular administrative channels, to the Secretary whenever important opportunities arose. Each such proposal would require the endorsement of the museum's director and its board, commission or council; each proposal would describe thoroughly the object or collection and discuss the importance of its acquisition; and each would contain evidence of the appropriateness of the proposed purchase price. Although we do not contemplate a formal allotment of these funds among the participating museums, we would endeavor over

the long run to apportion the funds equitably among the museums.

Depending upon the size of the fund, we would establish a minimum amount for the purchase of a single object or collection in order to insure that this special fund would not be used for the smaller but nevertheless important purchases that are covered by each museum's own appropriation or by Smithsonian trust funds.

Following an initial appropriation, a full report of all acquisitions under the program would be submitted to our appropriations committees annually. As the initial fund became depleted we would request additional appropriations sufficiently far in advance so that an adequate balance could be maintained to meet opportunities as they arise.

In answer to a specific question raised during our hearings, we would recommend that the National Gallery of Art not be included in this program. In view of the fact that the Gallery is administered independently, that it seeks its annual appropriation separately from the Smithsonian, that it raises and manages its own non-appropriated funds, and that it is not subject to the authority of the Secretary or the Board of Regents of the Smithsonian, we believe that the participation of the Gallery in the proposed Smithsonian acquisition program would raise administrative and philosophical issues of inordinate complexity and sensitivity, which would be desired by the Gallery no more than by the Smithsonian.

How Large Would the Fund Be? This is of course the crucial question, although it must be admitted that in a sense any answer is necessarily rather arbitrary. Given current prices, as alluded to above, there is no doubt that we could spend tens of millions of dollars each year on acquisitions of the very greatest appropriateness and importance for the national collections. Since, in a sense, the need is almost limitless, it is probably more useful to consider the situation of the Smithsonian's national museums in comparison with other, similar public and private museums in this country and abroad. The three tables below show this situation quite clearly, based upon the latest information available to us.

TABLE I

Smithsonian Acquisition Expenses FY 1980
(dollars in thousands)

Museum	Total	Federal Funds	Trust Fund Program 1./	Restricted Endowments
Cooper-Hewitt	$ 12	0	0	$ 12
Museum of History and Technology	190	80	100	10
National Portrait Gallery	850	300	550	--
National Collection of Fine Arts	400	200	200	--
Hirshhorn Museum and Sculpture Garden	418	218	200	--
Freer Gallery of Art	400	--	200	200
Museum of Natural History	100	--	100	--
Museum of African Art	50	--	50	--
	$2,420	$798	$1400	$222

1./ The expenditures under the 5-year Trust Fund program have been prorated to reflect an average year; the extraordinary one-time expenditure for the acquisition of the Stuart Portraits has similarly been prorated on the NPG line.

TABLE II

Acquisition Funds of Selected North American Museums
1977-1979
(dollars in thousands)

Museum	1977	1978	1979
Los Angeles County Museum	$2,454	$2,540	$1,158
Metropolitan Museum of Art	6,737	3,438	3,653
Boston Museum of Fine Arts	2,300	1,700	1,686
Cleveland Museum	2,056	3,669	4,868
Detroit Institute of Arts	N.A.	1,731	2,000
Art Institute of Chicago	1,042	882	1,474
National Museums of Canada	2,642	5,024	1,587

TABLE III

Appropriated Acquisition Funds of British National Museums
FY 1980 and 1981
(dollars in thousands)

Museum	Purchase Grants Provided FY 1980	FY 1981
British Museum	$2,435	$3,610
Science Museum	248	845
Victoria and Albert Museum	2,261	2,689
Imperial War Museum	167	214
National Gallery	6,216	7,399
National Maritime Museum	367	581
National Portrait Gallery	581	693
Tate Gallery	3,001	4,493
National Galleries of Scotland	1,630	2,118
National Museum of Antiquities of Scotland	219	286
Total	$17,125	$22,928

As one can see from these tables, all eight Smithsonian national museums together have approximately $2.4 million dollars to spend each year on acquisitions -- an average, in other words, of approximately $300,000 per museum. By contrast, leading private museums in this country and national museums abroad tend to spend amounts on the order of $2 or $3 million dollars.

In view of these orders of magnitude, and recognizing again that any particular figure is somewhat arbitrary, we would propose the establishment of an appropriated acquisitions fund for all eight Smithsonian national museums at an initial level of $10,000,000, with the hope that the fund could be maintained at approximately this level by further annual appropriations as expenditures are made each year. We believe that in some years there might be no expenditures under this program, while in others the expenditures might rise as high as perhaps five or six million dollars. This will depend upon the nature, the importance, and the urgency of opportunities that might arise from time to time. Our best guess at the moment is that the average annual expenditure, and thus the average need for additional appropriations after the first year, would be in the range of three to five million dollars.

MAJOR ACQUISITIONS

Mr. YATES. That proposed the $10 million, didn't it?

It is a very well written proposal and it indicates in it through comparative tables how the Smithsonian acquisition programs for its various museums have fared with respect to other North American museums such as the Los Angeles County Museum, the Metropolitan Museum of Art, the Boston Museum of Fine Arts, the Cleveland Museum, the Detroit Institute of Arts, the Art Institute of Chicago, the National Museums of Canada and also the British museums. It is kind of interesting in that it shows that the British museums with their strengthened economy have had provided for them through purchase grants in fiscal year 1980 the sum of $17 million plus and in 1981 almost $23 million whereas all of the eight Smithsonian national museums have approximately $2.4 million, approximately 10 percent of what the British museums are funded for acquisitions.

Have you ever competed with the British museums for acquisitions by any chance?

Mr. RIPLEY. No, we have not had that much luck.

Mr. YATES. That much luck or that much money?

Mr. RIPLEY. Well, luck and money. I am not equating luck and money.

Mr. YATES. As I understand your competition today, it has been with only the Museum in Boston for the George Washington and Martha Washington portraits.

Mr. RIPLEY. Yes, and we settled very happily.

Mr. YATES. Now that you have that precedent established, are you entering into similar arrangements with any other competitors for acquisitions?

Mr. RIPLEY. I have suggested it in one other case where we both lost to a Britisher and it didn't seem to be a bad precedent to set.

EXAMPLES OF PURCHASES NOT MADE FOR WANT OF FUNDS

Mr. YATES. What did you lose last year that you wanted? Assuming the conclusion that you have in this document, how are you hurt? What is it that you wanted that you were not able to get or to try for?

Mr. RIPLEY. It comes up all the time. I can mention a case of my own.

Mr. YATES. Go ahead.

Mr. RIPLEY. In February of this year a silver cup from 17th Century origin belonging to one of the pilgrim fathers who came over here on the Mayflower came up for public sale and I think Christie was handling it. We were told the evaluation was $10,000 or $15,000 on this virtually unique cup, that pieces of this quality are extremely rare, and through the scuttlebutt we found that another institution would be interested in acquiring it so rather than compete in the open market to come and buy it I suggested to the other institution that we share it like the Boston Museum arrangements of the Stuarts and that seemed to be agreeable. Then they backed out feeling they could not raise enough money and it was sold to an English dealer for $55,000. As a purchaser we valued it from $10,000 to $15,000 and $55,000, of course, was out of our

league, we were not prepared to buy it. That is merely an example of the competition where we lost.

Charles has something to add.

Mr. BLITZER. I could mention a couple of large collections, Mr. Chairman, and then perhaps Mr. Lerner and Mr. Robbins could talk to you more about that.

Mr. YATES. Why don't we bring them up to the table. I think some of our committee members have other committee meetings.

Mr. BLITZER. The Peabody Museum at Harvard is disposing practically at this very moment of 108 portraits by Henry Inman of Indians. It is agreed certainly by Harvard and by the Smithsonian that this would be the ideal place to collect them and make them available to the scholars and to the public. The price was well over a million dollars on the market.

The second one that maybe we mentioned before is an incredible collection of 7,250 Matthew Brady negatives from his studio in the era of the Civil War. The price is in excess of a million dollars. It is hoped that conceivably those might come to the Smithsonian through some tax relief to the estate.

Mr. YATES. What is the value of that?

Mr. BLITZER. About $1,260,000. It is an incredible collection. As I say, there is some hope through whatever source it might come to us.

DEACCESSION OF ITEMS IN COLLECTIONS

Mr. YATES. Do you ever try to exchange items which are considered to be in oversupply to the Smithsonian for items that would be more desirable as additions to the collection? I was talking to one of the curators at the Met the other night and he said that while Mr. Hoving was criticized for his actions, it nevertheless is common practice for museum dealers to use surplus items as the means for bartering for something they want to get hold of.

Mr. RIPLEY. Not to my knowledge.

Mr. YATES. Why would this be the practice? Are you required to keep what you have?

Mr. RIPLEY. We have a supply of moose heads and caribou carcasses and discarded elk horns.

Mr. YATES. Are you required to keep those?

Mr. RIPLEY. These are government property and we cannot declare them surplus.

Mr. YATES. Should you have legislation permitting you to rid yourself of items that are just taking up space and for which you have no need?

Mr. RIPLEY. Our Women's Committee was very anxious to put on a benefit auction and suggested that maybe there was a moose head or two that might be available.

Mr. YATES. Yes, but do you have the power to do that?

Mr. RIPLEY. No, it was decided that really this was terrible because this is Federal property.

Let's ask the Judge. Judge Powers, what is the power of the Smithsonian on this?

Mr. POWERS. Most of the collections of the Institution came by gifts on which there are no restrictions. We are also empowered to sell or trade the objects which we acquire with Federal funds.

Mr. YATES. You mean objects you acquire with Federal funds are not to be exchanged or sold?

Mr. POWERS. The same rule applies, that we can also dispose of them.

Mr. RIPLEY. In other words, they could be deaccessioned as being surplus to our needs.

Mr. YATES. Depending on what the terms of the gift are. With Federal funds we almost give you carte blanche, we give you the money and you go out and you acquire. I don't remember that we put any strings on it.

Mr. POWERS. In the case of the Hirshhorn, the Hirshhorn board has authority over deaccessions; they have on occasion exchanged a picture.

Mr. YATES. Do you want to tell us about that, Mr. Lerner?

Mr. LERNER. There have been only one or two instances of this. It all depends on the nature of the collection. Our collection, for example, may have three or four works of art dating from the same year that came out of the same accession and in that case one could think of that as being excess. We have been able to do that because our board happens also to have the power of deaccession. We have also been able to buy some on condition that we may dispose of one or two things in a collection which again came out of the same period that is already represented in the collection and we can exchange these for something that we don't have at the moment.

FREER ACQUISITIONS FUNDS

Mr. YATES. What else would you like to tell us, Mr. Lawton?

Mr. LAWTON. We receive no Federal funds for purchases at the Freer.

Mr. YATES. Is that because of Mr. Freer's will?

Mr. LAWTON. No. We have asked for purchase funds but they were cut out of our budget request.

Mr. YATES. Why is that? Doesn't Mr. Ripley like you?

Mr. RIPLEY. We like to be mean to them.

Mr. LAWTON. I think OMB does it.

Mr. YATES. What happened over the last four or five years, have you received funds for acquisition?

Mr. LAWTON. Not Federal funds, from the Freer bequest.

Mr. YATES. Why are you barred from using the Federal funds that we make available to the Smithsonian?

Mr. BLITZER. The funds are identified by museum. We have not asked most recently because the OMB didn't allow us to ask for acquisition funds. We don't transfer between or among the museums. I believe there was $100,000 in the budget submitted to OMB for 1982. That was the Carter OMB, not the Reagan OMB.

Mr. LAWTON. The funds that we do use that come from the Freer bequest are subject to the terms of the Freer bequest.

Mr. YATES. What is the story of your administration as far as acquisitions are concerned? Obviously, you are looking for improvement of your collection.

Mr. LAWTON. We are.

Mr. YATES. Occasionally a dealer will come in and talk to you and say, "I have this available," or you see a list in Christie's

catalog. What happens then, do you just yearn for it or do you try to buy it?

Mr. LAWTON. We are able to spend between $200,000 and $250,000 from our income for the purchase of objects.

Mr. YATES. If you don't buy anything in a particular year, does that amount of money lapse or does it accumulate for the next year?

Mr. LAWTON. It can accumulate. Usually we expend at least that much money.

Mr. YATES. How much is made available to you annually from private funds for the acquisitions?

Mr. LAWTON. In effect, after we have paid our bills, we use the money that is available for purchases. That is really what our acquisition fund is at the Freer Gallery, and it usually comes out to around, as I say, $200,000 or $250,000.

Mr. YATES. Well, under that kind of an arrangement you have great incentives to operate your museum quite economically then, don't you?

Mr. LAWTON. Well, we are forced to operate very economically.

Mr. YATES. In other words, it all depends on how much you want for acquisitions, doesn't it?

Mr. LAWTON. Yes.

Mr. YATES. Is that true of the other museums, too?

Mr. RIPLEY. No, because they have a specific endowment income which can be applied at will by their administration for purchases or whatever but the other museums do not. The fact is pointed out in our presentation here that a vase which might have been worth $1,500 a few years ago is now worth $70,000 on the market and they simply don't have enough money under any terms accumulatively for the whole lot and caboodle of it, don't have enough money to be able to afford to buy these things.

Mr. YATES. Suppose he has this vase that he wants to buy to improve his collection and he does not have enough money. Does he come to see you or does he just let it go?

Mr. RIPLEY. Both. Sometimes he will come to see me and say, how can we possibly raise the money? We have a Freer Committee, and they may try to meet and see if they can raise some funds outside for this extraordinary purchase.

Mr. YATES. Do you mean the Freer has an organization?

Mr. RIPLEY. They have a Visiting Committee.

Mr. YATES. A Visiting Committee? Visiting from where?

Mr. RIPLEY. Well, visiting from next door. There are other places such as universities where a regular kind of a committee such as this would have this special interest. Then failing all else, he might possibly go into hock; that is, say to the dealer, I will pay you in installments into next year and so on provided the dealer would agree. Sometimes the dealer is very tough and says no because he can sell it to a Japanese museum or somebody else, so it is on an ad hoc basis pretty much.

Wouldn't that be fair to say, Tom?

Mr. LAWTON. Yes.

Mr. YATES. Should we on this side of the table feel sorry for you because of the fact that we have not made more money or can't make more money available to you? I notice that the Museum of

Natural History in 1981 had $80,000 and in 1982 had $80,000 for acquisitions and that the Museum of American Art had $282,000 in 1981 and $215,000 in 1982. What can you buy with that today?

The National Portrait Gallery got more than the Museum of American Art, Hirshhorn got $233,000 and $249,000 in 1981 and 1982. The Museum of African Art is a lowly receiver of $30,000 each year. Why have you not worked that up yet?

Mr. ROBBINS. We are working on it.

Mr. YATES. All right.

I suppose the committee should know how much more is available out of other funds for acquisitions. As I say, Freer had $200,000 or $250,000 for the purpose annually, I assume.

Mr. LAWTON. Yes, that is true, Mr. Chairman.

Mr. YATES. And you use that each year?

Mr. LAWTON. We use that.

Mr. YATES. You are not allowed by the bequest of Mr. Freer to dispose of any of your holdings.

Mr. LAWTON. We may not.

Mr. YATES. Is that same admonishment true with respect to acquisitions that you buy currently?

Mr. LAWTON. It is, yes.

Mr. YATES. Once it becomes a part of your inventory is it frozen as a part of your inventory?

Mr. LAWTON. It is.

Mr. YATES. Have you missed the opportunity to accession an item because you have not had funds to acquire it that you thought you should have?

Mr. LAWTON. Repeatedly.

Mr. YATES. Can you give us examples?

Mr. LAWTON. Approximately a year ago we were offered several extremely fine examples of Chinese calligraphy and this is the time when we are very interested in calligraphy, there is competition on the market.

Mr. YATES. Ancient or current?

Mr. LAWTON. Ming dynasty, 17th Century samples. We just didn't have the money, and subsequently an American museum purchased it. If we had had the funds, we would have acquired it.

Mr. YATES. What about the People's Republic of China, do they have items that you want for sale, or do they not sell?

Mr. LAWTON. They have very strict regulations governing objects that may leave the country, and they are strictly enforced; art objects over 100 or 120 years old simply do not leave.

Mr. YATES. We usually do not want an art object that is not 100 years old.

Mr. LAWTON. Usually we would not.

Mr. YATES. Is there anything else you want to tell us about your problems in that position or other problems? What other problems do you have other than the fact that you don't have enough custodians?

ORIENTAL PAINTING RESTORER

Mr. LAWTON. Well, one particular instance was discussed a little bit earlier this morning. We asked in the budget for an oriental conservator, and this is the person for the studio which I think you

know is where we care for paintings. That person's job was removed from our request, and that is a very serious restriction.

Mr. YATES. How is that work done now?

Mr. LAWTON. We normally would have two, sometimes three such conservators. We have one person at the moment doing the work. There are occasions when the work requires two people, just physically requires that two people should be there to do it.

Mr. YATES. Is there enough money for your marvelous restoration workshop in your budget? What is the name of your Japanese person?

Mr. LAWTON. This is the studio I am discussing.

Mr. YATES. What do you call him?

Mr. LAWTON. An oriental painting restorer. It is an awkward English name.

Mr. YATES. How much money is involved in that?

Mr. LAWTON. We have a request for $42,000.

Mr. YATES. Is that the salary of an expert restorer?

Mr. LAWTON. Yes, it is.

Mr. YATES. Well, you have such a marvelous—I call it a repair shop.

Mr. LAWTON. High class.

Mr. YATES. Your restoring area.

Mr. LAWTON. Yes.

Mr. YATES. What is the name of that Japanese person who is the head of that?

Mr. LAWTON. We used to have Mr. Sugiura who is retired.

Mr. YATES. But who is there now, who is the young man?

Mr. LAWTON. A young man named Nishiumi who was trained in Japan and has been with us for approximately four years.

Mr. YATES. And he needs help?

Mr. LAWTON. He certainly does.

Mr. YATES. If help were available and you had the money, could you find the help?

Mr. LAWTON. We could in Japan. There is no one in the United States who is adequately trained to do this work.

Mr. YATES. Would you have to import somebody?

Mr. LAWTON. We would.

Mr. YATES. Does the Labor Department let you do that?

Mr. LAWTON. After great negotiations they will let us do it.

Mr. YATES. And you want $42,000 for that purpose?

Mr. LAWTON. Yes, sir.

Mr. YATES. Is Nishiumi by himself?

Mr. LAWTON. Yes.

Mr. YATES. What does Nishiumi mean?

Mr. LAWTON. It means West Sea.

Mr. YATES. West Sea. I can understand that. Now that makes an impression upon me because I have seen your restoring studio and I know what marvelous work is being done there.

Are such experts available in Japan?

Mr. LAWTON. They are, sir, yes.

Mr. YATES. Are they considered national treasures or will Japan release one?

Mr. LAWTON. There are men who are in their mid-forties who are not in the national treasure category who I think would be willing to come to the Freer to do this work.

Mr. YATES. Are there any in this country whom you might swipe from some other museum?

Mr. LAWTON. The only people are with museums. The Met in New York has two people and in the Museum of Fine Arts in Boston there is one person, but the museum directors would assault me physically if I tried to take these people away from them.

Mr. YATES. Well, we would not want that.

What other problems do you have?

Mr. LAWTON. I think those are the two major problems.

Mr. YATES. All right.

HIRSHHORN MUSEUM ACQUISITIONS

Mr. Lerner, what problems do you have? Let's go with acquisitions and other problems. I know you have problems with the surface of your plaza but that is a minor problem and that is being taken care of.

Mr. LERNER. Works of art we would like to have?

Mr. YATES. Yes. Give us an example.

Mr. LERNER. We had the possibility of acquiring a Julio Gonzalez sculpture.

Mr. YATES. Do you mean the Woman Combing Her Hair? You were competing with Carter Brown.

Mr. LERNER. Neither of us got it.

Mr. YATES. Because they wanted $900,000 for it.

Mr. LERNER. One million five hundred thousand dollars.

Mr. YATES. It went up. Who got it, incidentally?

Mr. LERNER. No one.

Mr. YATES. It is still for sale at $1.5 million?

Mr. LERNER. It is no longer at the National Gallery.

We had an opportunity a year ago to get a very beautiful Brancusi Bird for $1 million but the money was not available and we didn't get it.

Mr. YATES. Are those prices market prices?

Mr. LERNER. Yes, the market price.

Mr. YATES. They don't give you a discount?

Mr. LERNER. The Brancusi was acquired by another dealer, as a matter of fact, for somewhere around $1 million. He is probably now asking around $2 million for it.

Mr. YATES. Brancusi Birds are hard to come by, aren't they?

Mr. LERNER. No, not necessarily more difficult than other Brancusis.

Mr. YATES. Was it a bronze?

Mr. LERNER. No, it was a marble.

Mr. YATES. A Bird in Flight.

Mr. LERNER. It had historical value as well.

INCREASES IN ART PRICES

We had an opportunity to acquire 10 Thomas Benton mural paintings which I think constitute the major works of his life time. They wanted $2 million for those and of course we didn't have the

money. The price of a Benton since we got involved in this has simply risen to a staggering high so that within a few years such Bentons will become unapproachable and an ordinary Benton painting will not be available for less than $100,000 or $200,000.

Mr. YATES. Almost like a De Kooning.

Mr. LERNER. I was looking at our records the other day and a De Kooning that we had valued at $35,000 when the collection was given in 1966, is now somewhere around $150,000 to $200,000. There has been a general, approximately 20 percent, rise every year on certain works of art. That is not true of everything of course, but artists with a reputation, even younger ones, whom a few years back when you were collecting yourself, you could buy for about $1,200.

Mr. YATES. No, I could not.

Mr. LERNER. You mean you could not afford it?

Mr. YATES. Yes.

Mr. LERNER. For $1,500 one could get a fairly well-known young artist. You don't get a young artist now for less than $10,000 or $15,000. We bought a young artist named Rackstraw Downes and we had to pay $12,000 for a picture that two years ago would have sold for $8,000. He is a very young, but relatively well-known artist. The prices have been staggering, but what we get in the way of acquisition funds has enabled us to buy some good works of art, there is no question about it.

Mr. YATES. I know Mr. Hirshhorn bought almost everything in volume.

Mr. LERNER. No, that's an exaggeration.

Mr. YATES. Do you have Jackson Pollock, the big ones?

Mr. LERNER. We have one which is not very large. Those are difficult to come by. We have no great big ones. Primarily we have been interested in building the collection and buying competitively. Something like the Bentons would have been astonishing and marvelous.

COOPERATION WITH THE NATIONAL GALLERY

Mr. YATES. Do you cooperate at all with the National Gallery in an acquisition program of shared rentals or ownership?

Why are you laughing? The National Galley is part of the Smithsonian.

Mr. HUGHES. Yes, sir.

Mr. LERNER. They do consult us on exhibitions and on acquisitions. For example, they are very careful not to buy another cast of a piece that may exist in our collection.

Mr. YATES. I will ask Carter Brown about it when he comes before us. Would you be interested in sharing with them?

Mr. LERNER. Why not?

Mr. YATES. One question deserves another question.

ACQUISITIONS AT THE MUSEUM OF AFRICAN ART

Warren, you are on the verge of getting 12 major collections—two anyway.

Mr. ROBBINS. The value of African art has sky-rocketed during the last decade or so, increasing in some cases ten-fold or more.

This has made some people who don't necessarily have a lot of money but who have purchased wisely and steadily what I call "wooden millionaires." There are others who are wealthy people but who are not able to give their collections away. Therefore, what has developed in recent years is a plan whereby people will give half of their collection to a museum and sell the other half (so that they can leave the money to their grandchildren).

With the limited funds we have—private funds that were mentioned this morning plus possible federal appropriations—we would prefer not to dissipate these funds by buying on the open market but rather, save them up for a few years and buy half of a whole collection. For a million and a half dollars we could buy not just one piece of modern art but gain a whole collection of African art.

Today we cannot compete in quality of collection with the Metropolitan, the British Museum, the Musee de l'Homme in Paris or museum collections in Switzerland or Berlin, but any one of these private collections I have referred to and certainly several of them in combination if they came to us as bequests or were partly purchased could make our own collection one of the principal ones in the world, and that is our goal.

FUNDING LEVEL FOR MAJOR ACQUISITIONS

Mr. YATES. Well, what is a reasonable acquisition cost? Is $10 million a reasonable acquisition fund in accordance with your memorandum?

Mr. BLITZER. As the memorandum says, Mr. Chairman, it is hard to estimate that. The demand in a sense is almost unlimited. We came up with that figure by looking at what other comparable institutions had. What we have proposed in this paper was not an annual $10 million appropriation, but rather an initial appropriation of $10 million without a fiscal year limit and then the replenishment as we spent money. We guessed somewhere in the range of three to five million yearly in expenditures.

Mr. YATES. You have beneficiaries and you have corporations who aid you and you have other kinds of gifts that come to you. You go out for gifts. Do you put gifts that you receive into your non-Federal fund budget and classify it as income?

Mr. RIPLEY. You mean in monetary terms?

Mr. YATES. Yes.

Mr. RIPLEY. Yes.

TANGIBLE GIFTS BOOKKEEPING

Mr. YATES. I don't mean financial terms. What method of bookkeeping do you maintain on tangible gifts? For example, when Mr. Kennedy acquires Archie Bunker's chair, how is that listed in your accounts?

Mr. RIPLEY. Well, it has some kind of an appraisal. I have no idea in this case but then it is listed as an object acquired and applied to the collection. I don't know specifically.

Mr. YATES. Is it listed in the account as a certain value?

Mr. HOHENLOHE. Mr. Chairman, it is not carried on our books as a financial asset, it is part of the inventory of the collection.

Mr. RIPLEY. The person that gives it may acquire some tax relief, let's say, by giving it but that has nothing to do with us.

Mr. YATES. We do know values to some extent about the Hirshhorn. I know the thick book that Mr. Blitzer carried with him when the question of the Hirshhorn Museum came up and that established certain values for Mr. Hirshhorn's collection at that time.

Mr. RIPLEY. He put it into his foundation so he acquired no benefit directly. He was accused of having acquired a benefit.

Mr. YATES. I did not bring it up for that purpose. I meant to show that you did know what certain values were at a certain time.

Mr. RIPLEY. We had outside appraisers appraise it.

Mr. YATES. Do you do that at all for any of your other assets or do you just list your assets as assets? Do you know what the value is of your gem collection, for example?

Mr. RIPLEY. Of course it has a floating value. We do have periods, for example, I can recall within the past four or five years when we had an appraisal made of our holdings in silver and in pewter, American pewter.

Mr. YATES. Do you have an insurance program of any kind?

Mr. RIPLEY. No, because it is reimbursable by the Government.

VALUE OF THE NATIONAL COLLECTIONS

Mr. YATES. Would it serve any kind of a useful purpose for you to know what your assets are as you make your inventory? What shall we tell the Members of Congress who complain about the amount of money that is made available for taking care of the Nation's attic, and your museums, which are being cut in maintenance and are being cut in security and so forth? Shall we tell them that the value of the objects that you have is not measurable, that the values are so huge that there is nobody who could possibly appraise them?

Mr. RIPLEY. In effect that is about where you are with one of a kind objects. Who is to value the flag that flew over Fort McHenry? Who is to value the desk on which Jefferson wrote the Declaration of Independence? It is a one of a kind item. Who is to value General Washington's uniform or his false teeth for that matter? These are intangible national treasures.

Mr. YATES. This raises a very interesting question and Mr. Conte would like to know the answer and Mr. Murtha would like to know the answer so when they argue for the Smithsonian appropriations on the floor they will be able to help all of us out. Do you have a list of what is in your collections? We know what we see in museums, for example, but I didn't know you had Thomas Jefferson's desk on which he wrote the Declaration of Independence. It seems to me that at such time as this committee comes to the floor with a bill and tries to sustain an appropriation that we ought to be able to tell the Members of the House and the Congress what it is that the people of the United States own in these museums and that it is to the best interests of the people of the United States that appropriate measures be taken to protect their property interests of this kind. Of course it is one of the reasons you are taking the inventory, and that is to find out everything that you have. But the

individual items, the gems that you have, I think are incalculably valuable.

Mr. RIPLEY. Yes.

Mr. YATES. The historical objects and the stamps and the coins and everything else are so very valuable. I think it would be good, unless this is an invitation to the kind of pilfering that we found taking place, and that we have to worry about, but not with the security measures that you have.

Mr. RIPLEY. I think it is something we should never stop worrying about.

Mr. YATES. It is the kind of information we ought to know so we can inform the Congress. We would appreciate whatever you can give us in that respect. I am sure the Regents would like that, Mr. Conte. I think that is valuable, don't you?

Mr. CONTE. Yes.

Mr. YATES. Did you want to ask any questions as a Regent and as a member of the full Appropriations Committee?

Mr. CONTE. No. I appreciate being here for this short period of time.

Mr. YATES. I know, you have to float around.

FIVE-YEAR PROSPECTUS

Mr. CONTE. As I looked at the budget and studied it, everything considered, Mr. Secretary, I think the Smithsonian has done fairly well in this latest budget. As a Regent and a Member of Congress I have been very, very impressed with the efforts of the Smithsonian who developed this five-year perspectus plan for a very orderly growth and development and maintenance of the Smithsonian programs and its facilities. It has been so successful in improving internal planning and management decisions and communications with OMB and the Congress that the Smithsonian plans to expand the perspectus to include eight or ten years. I wonder if you could take just a few minutes of your time maybe at this point to explain the impact of the revised fiscal year 1982 budget request on the five-year perspectus.

IMPACT OF REVISED FISCAL YEAR 1982 BUDGET ON SUCCEEDING YEARS

Mr. RIPLEY. I would be very happy to.

John Jameson is in charge of putting together this five-year perspectus and could talk about it. I have urged that we extend it to an eight-year period or a little longer because it is so effective in its own way.

Mr. YATES. And I think that the administration would appreciate our not destroying the five-year plan.

Mr. RIPLEY. That is why we called it the five-year perspectus because we didn't like the connotation of a five-year plan.

Mr. JAMESON. The most immediate and major impact will be, Mr. Conte, to revise the plan to show the effect of the new administration's budget on the Quadrangle. As you know from the materials that we have submitted, the OMB has agreed to allow us to seek a million dollars for planning in the fiscal year 1982 budget with the

expectation on our part that this planning money would enable us to come back in fiscal year 1983 for the construction appropriation.

I think the other major impact would be the need to take stock of our manpower requirements since the other major change to our budget is the reduction of some 96 positions in 1982, 36 new positions and 60 positions from the base. As we talked about a bit this morning, this will have some effect throughout the Institution in terms of curatorial work, exhibit preparation work, guarding, security. So in the revision of the prospectus that we will be starting very shortly this spring in connection with the formulation of the next round of budgets we will take stock of manpower and see what changes we have to make to either current work or plans that are articulated in the five-year perspectus.

Mr. CONTE. I think you are doing one of the finest jobs in Government of an agency, it is thought out for the future and it makes a lot of sense.

Mr. YATES. Thank you, Mr. Conte.

INCIDENTS OF VANDALISM

On the problems of our museums, are there any other problems? Do you have problems with vandalism or problems with theft? Have any of your things been stolen or broken?

Mr. ROBBINS. No problems.

Mr. YATES. You are finding that people like to walk along and touch the sculptures.

Mr. CONTE. Mr. Chairman. Do you ever have any slashing of paintings like we had here at the Capitol?

Mr. ROBBINS. None.

Mr. RIPLEY. The Freer had some as we talked about in the past with the impression made with things like chalk by presumably school children on a scroll painting of silk. So in all the months that it takes to bring that back into a flat perspective again we removed the effect of just a casual dastardly attack and that is a very strong, important argument in favor of this conservation laboratory at Freer which is so much a part of its normal operations and which is deprived now by the loss of one staff appointment as recommended.

I think that it is a very serious question that you raise, Mr. Chairman, about the value of these collections we have now and I think you feel that perhaps we are sort of fumbling in trying to give you an answer.

Mr. YATES. No.

Mr. RIPLEY. We try.

Mr. YATES. I can appreciate the impossibility of keeping a current valuation of your assets.

Mr. RIPLEY. Values change.

Mr. YATES. Yes, and that is why you can't do it.

Mr. RIPLEY. A rather curistic, auditory approach to it by one of my colleagues.

Mr. YATES. Some President may come along and want you to sell a few things to pay off the national debt.

Mr. RIPLEY. Well, we could certainly produce a few billion dollars.

Mr. YATES. Much more than that.

Mr. RIPLEY. The collections represent an investment by the U.S. in its own history and education and the estimate of that investment is at least a ball park attempt to answer your question.

EFFECTS OF POSITION REDUCTIONS

Mr. YATES. All right.

Mr. CONTE. Mr. Chairman.

Mr. YATES. Mr. Conte.

Mr. CONTE. The original Carter budget proposed 36 new positions and all of these would be eliminated as I understand it in the Reagan budget, and also I understand the Smithsonian will have to eliminate 60 positions from its base, is that right?

Mr. RIPLEY. Yes.

Mr. CONTE. How are you going to handle this?

Mr. RIPLEY. It is going to present a big problem.

Mr. CONTE. Can you tell us what you think the impact would be?

Mr. RIPLEY. Yes, I believe we can.

John, can you or Chris answer that?

Mr. JAMESON. We went at the task of cutting 60 positions by asking each Assistant Secretary to work with his units to determine which positions those should be. In effect, they touch every organization unit of the Institution. They range from custodial people, people that we need to clean our buildings, guards to protect our collections, our buildings, and our visitors up to the professional level positions at the curatorial level both in science and history and art. The impact will be that work will simply not get done in those areas in fiscal year 1982. I think we tried to allocate the 60 as widely as we could so that no particular organization would be hit unduly hard by the reduction. As you know, from our organization chart we have about 60 line items in our budget. Almost every organization unit has taken some reduction, either by not being allowed to ask for one or more of the 36 new positions in 1982 or by taking a portion of the cut of 60. Some units will take both as it happened.

Mr. YATES. May I follow up on that question, Mr. Conte?

Mr. CONTE. Yes.

Mr. YATES. You have a requirement from OMB to reduce your personnel request and your personnel by a certain amount. I am impressed by Mr. Lawton's request for his restorer. Can Mr. Lawton get his restorer by eliminating some other job? Are you allowed to do that under your rules and regulations?

Mr. JAMESON. Yes.

Mr. YATES. Is it just sheer numbers that OMB is interested in?

Mr. JAMESON. OMB is interested in sheer numbers.

Mr. YATES. So a unique position, and I consider that position a very unique one nevertheless can be acquired within the imprimatur of OMB by not hiring a custodian?

Mr. LAWTON. Yes, that is possible.

Mr. YATES. Something is wrong with rules like that.

Mr. HUGHES. I don't think there is anything wrong with the rule, there is something wrong with the result. It is a better rule than if you said you must cut the restorer, it seems to me.

Mr. YATES. Yes. It gives them some flexibility and that is fine but it seems to me that a position like a restorer, a unique restorer,

the kind that we don't even have in this country, should occupy a position outside of funding and limitation of personnel limitation.

Mr. HUGHES. We feel that way about the whole Institution.

Mr. YATES. Well, I guess we are unique in this. I think it is a great Institution, too, but certainly there are jobs there that are not that replaceable.

Mr. HUGHES. We had some discussion earlier that we have a personnel and a management job to do. If we face up to the OMB action, we have 96 jobs to lose in some fashion. We have tried to spread the pain around and in the process of doing that if we had done it wisely we would have minimized the pain somewhat and we have also diffused them, spread it around in a way which makes it very difficult for us to scream loud and clear that the Institution is about to collapse.

Mr. Ripley said we are trying to work on the good soldier side of this thing but we must face up to the fact that if we had the respectable budget that we submitted, and we think we did, that the loss of those 96 people is very difficult to measure and evaluate but nonetheless a clear reduction in the services that we can render to the public, whether we are talking about the restorer or the historian that somebody was after or the custodians or the protection people we lost. All of those add up to pain in somebody's institution, in somebody's museum or the Institution as a whole.

Mr. CONTE. Do you think you could send up for the record where these pains will take place?

Mr. HUGHES. Yes, I believe I can do that.

[The information follows:]

SALARIES AND EXPENSES FY 1982 BUDGET AMENDMENT

($1,000's)

Science	Item		Amount of Reduction
National Museum of Natural History	-1	Archeologist	$ -25
	-1	Entomologist	-25
	-1	Museum Technician	-13
	-2	Custodial Worker	-23
	-1	Clerk	-12
	-2	Clerk-Typist	-24
		Necessary Pay	-18
Smithsonian Tropical Research Institute	-1	Diving Safety Officer	-15
	-2	Clerks	-22
		Necessary Pay	-3
National Zoological Park	-1	Gardener	-19
	-1	Administrative Assistant	-22
	-1	Auto Mechanic	-15
	-2	Clerk Typist	-26
	-2	Custodial Worker	-25
		Necessary Pay	-14
Radiation Biology Laboratory	-1	Plant Physiologist	-30
	-1	Physical Science Technician	-20
	-1	Biology Laboratory Technician	-12
		Necessary Pay	-2
National Air and Space Museum	-1	Supervisory Exhibits Specialist	-22
	-1	Spacearium Chief	-22
	-1	Meteorologist	-22
	-1	Curator	-22
	-1	Museum Specialist	-18
	-1	Photo Archivist	-18
		Necessary Pay	-18
Chesapeake Bay Center for Environmental Studies	-1	Computer Programmer	-23
Smithsonian Astrophysical Observatory	-2	Astrophysicist	-99
	-1	Safety Specialist	-33
	-1	Bus Driver/Mechanic	-17
Total, Science	-32		$-679

SALARIES AND EXPENSES FY 1982 BUDGET AMENDMENT

($1,000's)

	Item	Amount of Reduction
History and Art		
National Portrait Gallery	-1 Historian	$ -25
	-1 Custodian	-12
	Necessary Pay	-6
Freer Gallery of Art	-1 Conservator	-42
	-1 Custodian	-12
	Necessary Pay	-2
National Museum of American History	-1 Conservator	-25
	-1 Electrician	-20
	-1 Exhibit Specialist	-20
	-1 Photo History Technician	-13
	Necessary Pay	-11
National Museum of American Art	-1 Clerk Typist	-12
	-2 Custodian	-22
	Necessary Pay	-5
Hirshhorn	-1 Custodian	-11
	Necessary Pay	-1
Museum of African Art	-1 Research Curator	-27
Cooper-Hewitt	-1 Graphics Designer	-25
Joseph Henry Papers	-1 Research Assistant	-20
Total, History and Art	-15	$-311
Public Service		
Assistant Secretary	-1 Clerk Typist	-10
	Necessary Pay	-2
Smithsonian Press	-1 Clerk Typist	-11
Total, Public Service	-2	$-23

SALARIES AND EXPENSES FY 1982 BUDGET AMENDMENT

($1,000's)

	Item	Amount of Reduction
Museum Programs		
Office of Museum Programs	-1 Psychologist	$ -27
	Necessary Pay	-4
Exhibits Central	-1 Forklift Operator	-19
	Necessary Pay	-3
Office of Registrar	-1 Transportation Specialist	-19
Conservation Analytical Laboratory	-1 Clerk Typist	-11
	-1 Radiographer	-11
	-1 Information Officer	-8
	-1 Conservator	-8
	-1 Conservation Coordinator	-8
	Necessary Pay	-2
Smithsonian Libraries	-1 Secretary	-12
	-1 Library Techician	-11
	Necessary Pay	-3
Smithsonian Institution Traveling Exhibition Service	-1 Exhibition Coordinator	-21
	-1 Education Specialist	-21
Total, Museum Programs	-12	$-188
Special Programs		
Native American Program	-1 Conservator	$-20
Total, Special Programs	-1	$-20

SALARIES AND EXPENSES FY 1982 BUDGET AMENDMENT

($1,000's)

		Item	Amount of Reduction
Facilities Services			
Protection Services	-2	Security Specialist	$ -34
	-13	Guards	-161
	-1	Clerk Typist	-11
		Necessary Pay	-13
Office of Plant Services	-1	Transportation Specialist	-27
	-1	Plumber	-21
	-1	Supply Techician	-20
	-1	Painter	-20
	-1	Warehouseman	-17
	-1	Mail Clerk	-11
	-3	Custodial Laborer	-37
		Necessary Pay	-17
Office of Design and Construction	-1	Architect/Engineer	-40
	-1	Engineer/Estimator	-20
	+1	Deputy Director	+41
Total, Facilities Services	-26		$ -408
Administration	-1	Budget Analyst	-20
	-1	Clerk Typist	-11
	-2	Personnel Management Specialist	-75
	-1	Secretary	-15
	-1	Computer Specialist	-19
	-1	Supply Clerk	-11
	-1	Cataloguer	-12
		Necessary Pay	-8
Total, Administration	-8		$ -171
GRAND TOTAL, Smithsonian	-96		$1,800

PANDAS AT THE NATIONAL ZOOLOGICAL PARK

Mr. CONTE. On the lighter side, Mr. Chairman, would you get a report from Mr. Reed on how the panda is making out?

Mr. YATES. I got a report from Mr. Reed that Chia-Chia is sleeping in. Now I don't know what that means. I don't know how closely Mr. Reed is following the progress of Chia-Chia with respect to the mission ascribed to Chia-Chia coming to this country.

Mr. CONTE. Is Chia-Chia happy?

Mr. YATES. I will be happy to notify you when Mr. Reed takes the stand to report on that.

Mr. CONTE. I will be down.

Mr. HUGHES. The term was sleeping in, Mr. Chairman, not sleeping around.

Mr. YATES. I don't know, it all depends.

Mr. REED. At this time it is jet lag, I hope that in six weeks it is something else.

Mr. YATES. Jet lag. Well, how long did that last with Ling-Ling or Hsing-Hsing?

Mr. REED. Maybe he never got over it.

Mr. YATES. Had you concluded, Mr. Conte?

Mr. CONTE. Yes.

FISCAL YEAR 1982 STAFFING

Mr. YATES. How about your staffing? Are you all right?

You are all right.

Charlie, are you all right with your staffing? The only one missing is Marvin Sadik.

Mr. BLITZER. We will lose a new research curator.

Mr. YATES. Will you be able to substitute a custodian or something else? Mr. Lawton just got through saying he could do it. Can't they suffer through some other custodian position in the castle, for example?

Mr. BLITZER. If I am allowed to say this if the Committee would allow us the money for the salary of a research curator for the Museum of African Art, that is another one that I think in our view is so important we would somehow find the position.

Mr. YATES. I must say that I have the impression that if the Under Secretary has experience in the Office of Management and Budget it would be invaluable in trying to find openings to try to hire those people and at the same time possibly not being hurt with the loss of one or two, I don't know. I assume that all the jobs you asked for are necessary but some are more necessary than others.

Mr. BLITZER. Yes.

Mr. YATES. Thank you very much, gentlemen.

BYLAWS OF THE BOARD OF REGENTS

In 1979 Chancellor Burger and Mr. Ripley authorized the printing and distribution of bylaws of the Board of Regents and the charter of the Smithsonian that have been adopted and we have a copy of that, and of course we read it so regularly we wondered whether there were any changes to that that have occurred since this was published.

Mr. RIPLEY. I notice it looks rather dog-eared, Mr. Chairman. We will send you another copy.

Mr. YATES. Have there been any changes?

Mr. RIPLEY. No.

Mr. YATES. No changes in the bylaws.

Mr. RIPLEY. We codified the bylaws at the direction of the regents and published them for the first time in many years. We have not had a new edition, there is an amendment regarding regents emeritus that was not included in the original.

Mr. YATES. What is the amendment regarding regents emeritus? To what rights is a regent emeritus entitled?

Mr. RIPLEY. They accept the responsibility for continuing activities in the interest of the Smithsonian Institution so being a regent emeritus you may be called upon from time to time to take part in some activity, for example subcommittee work or a membership or one of the other things that the regents do have divided up in responsibilities. Mr. Mahon, for example, sits on the Audit and Review Committee and Dr. Haskins who is a distinguished entomologist is going to be serving on a Review Committee for the Department of Entomology. So it presumes a continuing interest in the Institution and possibly some participation from time to time.

NATIONAL ASSOCIATES ACTIVITIES

Mr. YATES. The Smithsonian Associates are very active, they have all kinds of programs, they have all kinds of tours, they have all kinds of meetings. That is correct, isn't it?

Mr. RIPLEY. Yes.

Mr. YATES. Now one of their meetings is going to be held in Tampa, St. Petersburg, Clearwater and Bel Air between February 10 and 16 which is a nice time to hold meetings there. Does the Smithsonian also supply travel funds and participate in these meetings?

Mr. RIPLEY. I understand these are essentially members of the Associates' organization. I don't know about the details of food and lodging.

Who went to the Tampa meeting?

Mr. FISKE. I attended as a participant lecturer and there were a group of about 10 people from here in Washington from the Smithsonian who traveled to the Greater Tampa area for those meetings.

Mr. YATES. Who pays your travel and hotel expenses when you go there?

Mr. FISKE. My understanding is that it is from the Trust funds related to the National Associate program.

Mr. YATES. Trust funds related to the profits made by the Smithsonian Associates?

Mr. RIPLEY. Well, the continuing budget Associates. They undertake to appropriate out of their budget the necessary funds for those enterprises.

HILLWOOD ESTATE

Mr. YATES. Apparently the Smithsonian was wise in returning Hillwood to the Post Estate. It is my understanding that $7 is now charged as the price of admission.

Mr. RIPLEY. For a very limited admittance of people.

Mr. YATES. Whereas there are no charges for the Smithsonian installation.

Mr. RIPLEY. We never could have run it on the budget which we had, we would have had to come to Congress. We felt that the interests of the Institution would not be served in this way.

NELSON ROCKEFELLER HOME AT POCANTIO

Mr. YATES. Well, we have that possibility now. I understand the National Trust is trying to find out whether the Government is interested in taking over the Nelson Rockefeller home at Pocantio. The endowment will be left short by about a million dollars of the amount necessary for operating expenses.

Mr. RIPLEY. Annual operations.

Mr. YATES. I ask whether or not the Congress would accept that kind of a gift. My own impression, subject to what my committee members would feel, is that they would not. I don't think we ought to pay a billion or a billion and a half dollars a year to keep up the Rockefeller home for those who want to visit it up there. Do you, Silvio?

Mr. CONTE. It comes at a very, very bad time.

Mr. YATES. Incidentally, there is no hunting up there.

Mr. CONTE. That's right, there is no hunting at all.

Mr. YATES. Generally do the current policies on reprograming provide the Smithsonian with enough flexibility to address problems which arise in the course of the year?

Mr. YELLIN. Yes, Mr. Chairman, they are perfectly adequate.

TIGER AND PANDA PROJECTS

Mr. YATES. Mr. Challinor, how is your tiger project coming along in Nepal?

Mr. CHALLINOR. The tiger project is now in its seventh year, it is slowly winding down.

Mr. YATES. With the same tiger?

Mr. CHALLINOR. We are in our third generation of collared tigers.

Mr. YATES. You ought to take over the panda problem. Do you think the pandas ought to be referred to Nepal?

Mr. CHALLINOR. We will see how they are doing in China when we get over there in April.

Mr. YATES. Are you going there in April?

Mr. CHALLINOR. Three Smithsonian staff will go in April in an agreement with the Chinese Association for Science and Technology to set up a similar program to what we have been doing in Nepal in a national park in China.

Mr. YATES. Do they have tigers?

Mr. CHALLINOR. They do have tigers in China but not in the national park that we are going to.

Mr. RIPLEY. These will be with pandas instead of tigers.

Mr. YATES. Oh, really?

Mr. RIPLEY. In other words, pandas in the wild. We are interested in trying to observe the life of pandas in the wild which has never been effectively done. We think we can use this technique of radio monitoring, attaching a little tagging device and a little radio which emits a specific signal on a collar around the neck of the

pandas as we do with the tiger so when the radio emits a specific signal it can be picked up to monitor and show where the animal is traveling and what his range is.

Mr. YATES. Is it possible that that signal makes the tiger more attractive to its mate?

Mr. CHALLINOR. They don't hear it, only we do.

Mr. CONTE. Why would we want to do this? Why can't the Chinese do this?

Mr. CHALLINOR. One, they do not have the technology to make these radios which are quite tricky. We use radios manufactured at the University of Minnesota. They weigh a little less than two pounds and as the technology gets better and if I can find $20,000 I can get one about the size of a 50 cent piece.

Mr. CONTE. I have seen some on wild turkey.

Mr. CHALLINOR. The radios we have on tigers will carry 15 miles if you are in an airplane and maybe three or four miles on the ground depending on the topography. If there are a lot of hills and rocks and trees, you don't hear it as far as on a nice open plain. The radio transmits continuously for about two to three years. Each time it transmits its own signal you can identify a specific tiger and know precisely the direction in which the tiger is and by taking a bearing you might even spot the tiger.

NEPAL TIGER PROJECT

Mr. CONTE. Now that you have all that information, what good is it?

Mr. CHALLINOR This is what we are trying to find out. Here is a national park in Nepal with about 40 adult tigers. It is an important tourist attraction and one of the key elements in the economy of this country by which it can generate income from western tourists. We are trying to find out whether 40 tigers are enough to keep a viable, healthy population. In other words, when the tigers become sexually mature around two years old, do they travel far enough to allow a mixing of the genes; that is, not having father-daughter or brother-sister breeding which in a short time will produce a very——

Mr. CONTE. Small tiger.

Mr. CHALLINOR. [continuing]. A small tiger or a tiger that does not survive well in the wild. We have learned at the end of seven years to plot where the tigers go when they become mature. It looks as though the genes of these 40 tigers are stirred up enough so that if this park stays the same size and does not get smaller, Nepal can be assured of a reasonably healthy population of tigers for the tourists to see for many years to come. It took somewhere from five to seven years to get this and other information together. We are collaborating with scientists in Nepal and this August the second Nepali will start writing his Ph. D. at the University of Edinburgh supported in part by the Smithsonian on his work in the National Park on our tiger project.

Mr. CONTE. How do you keep the population down to 40?

Mr. CHALLINOR. When a tiger goes out of the park he gets shot by the farmer whose animals he kills, or other similarly man-induced causes.

Mr. RIPLEY. They will wander sometimes as much as 300 miles in one direction. A male, for example, may just without benefit of visa go over into India much to the surprise of the Indians and that is part of what Dr. Challinor is talking about in terms of the renewal of the genetic pool that is available for the total population.

Mr. CONTE. I understand that.

Mr. YATES. Mr. Conte is asking what are the benefits that flow from the American expenditure of funds?

Mr. CHALLINOR. The benefit is not only for this park but for other national parks of this size to determine whether it is practical to bring tourists to see tigers or other large animals. We can now reasonably assure park managers that they can lose X numbers of tigers a year from those that leave the park and are shot, as long as the population that is left still continues to produce young, and that there is a sufficient amount of prey animals for the tigers in the park. The ratios between the number of tigers and the number of prey species, such as deer and wild pigs, must be maintained at a certain level. This ratio is important for managers of all National Parks whether it be Yellowstone National Park and its grizzly bears or this national park in Nepal and its tigers.

Mr. RIPLEY. If you are concerned about the funds, a major portion of these funds has been coming from the World Wildlife Fund as a grant to the Smithsonian.

Mr. CONTE. Good.

Mr. YATES. How much money was spent for this?

Mr. CHALLINOR. We have been spending about $80,000 a year, and about half of that or $35,000 to $40,000 are federally appropriated funds and the other half are moneys that we have raised from private sources, primarily the World Wildlife Fund.

Mr. CONTE. How about the pandas, Mr. Chairman?

Mr. YATES. I was just coming to that.

Is the tiger study coming to an end?

Mr. CHALLINOR. We are trying to wind it down. After seven years the amount of information that we are gathering has become less and less valuable in proportion to the amount of dollars that it costs to get it. Therefore, we have been helping the government of Nepal to establish a Royal Chitwan National Park Foundation and the legislation for this is now starting in Nepal. When this foundation is established, it will be a vehicle for western tourists to help finance the research and help us continue to pay the upkeep of five Smithsonian elephants and the locally trained people who care for them. The $40,000 that we have been spending in Nepal will be shifted to other places.

PANDA PROJECT IN THE PEOPLE'S REPUBLIC OF CHINA

Mr. YATES. Eighty thousand dollars is requested to initiate the survey. How did you go about setting this up? Was this a request of the People's Republic?

Mr. RIPLEY. Yes, they have asked us to do this.

Mr. YATES. Who is 'they,' the people of the People's Republic?

Mr. RIPLEY. The scientific organization consisting of two parts, the Academia Sinica which is the National Academy of China and the Chinese Association for Science and Technology which is a government set up organization.

Mr. YATES. How do you go about making agreements of this kind? Is the State Department involved in this at all?

Mr. RIPLEY. No, we sign directly.

Mr. YATES. Well, is this something where you should sign directly?

Mr. RIPLEY. We signed with the knowledge.

The Chairman in the United States and the President of the Academia Sinica in China set up broad policies of kinds of cooperation—technical, technological, and scientific—which are considered to be for the benefit of both countries. In other words, the research that we wish to accomplish is of great interest to us because we think it helps in the long run of the pandas we already happen to have in our care.

Mr. YATES. What other——

Mr. CONTE. Mr. Chairman, before you leave the pandas.

Mr. YATES. Mr. Conte.

Mr. CONTE. I am about to leave.

Mr. YATES. I was going to stay in China. You stay with the pandas.

Mr. CONTE. The Secretary said that the Congress was concerned about where the money has been coming from for the national wildlife project but this is coming from this Federal budget.

Mr. RIPLEY. Both. It is both. In other words, we intend to ask the World Wildlife Fund in addition.

Mr. CONTE. So it will be $160,000.

Mr. RIPLEY. I am not sure of the exact amount. I think it was $40,000 or $50,000.

Mr. CHALLINOR. We don't know what we will get from Congress but we will definitely plan to get what we call matching outside funds. In the case of the tigers with $30,000 or $40,000 in Federal funds we have been able to more than match that generally with outside money.

RELATIVE BUDGET PRIORITIES

Mr. CONTE. I merely raise the issue because listening to the Chairman's questions regarding the Japanese artists we can't hire 45,000 because of the shortage of money, for $80,000 we could put two Japanese artists to work.

Mr. YATES. Not two, there is only one.

Mr. CONTE. But we could put one to work if we had the money. The question is priorities.

Mr. YATES. I agree with you.

Mr. CONTE. That is the point I am trying to make.

Mr. YATES. Let Dr. Challinor answer that question. I think you have propounded a very significant question.

Mr. CHALLINOR. This is something, Mr. Chairman, that the Secretary is faced with every day and at the Assistant Secretary level, too, when we are obliged to slice the pie. Does the zoo get a new rhinoceros or does somebody else get a new microscope? These are the extreme cases of apples and oranges. Then we have to decide who gets what in what year when there is a finite amount of money. When you think of what the Smithsonian is doing, the apples and oranges analogy is multiplied almost to an indefinite level.

Mr. YATES. Just think of what you could do with a million dollars for planning for the Quadrangle.

Mr. CHALLINOR. A nice new piece of scientific equipment.

Mr. CONTE. Can you tell me why studying the pandas' travel behavior is more important than getting the Japanese artist?

Mr. RIPLEY. Well, we have the personnel requirement. We have ceilings and slots and all of this kind of thing which is ancillary but very compelling in terms of putting together a budget. In other words, we are restricted to certain numbers of people that we can possibly afford. When we are cut 96 positions, that really has nothing to do with pandas. We have another line item, let's say, which is scientific research.

Mr. CONTE. It has a lot to do with pandas. It is all interrelated. I would like to go to China on this trip, and to be outdoors.

Mr. YATES. Get some tiger hunting.

Mr. CONTE. I would give anything to go with you, it sounds like a fascinating and exciting trip.

Mr. YATES. Would you give him the money for this experiment?

Mr. CONTE. If they included me.

Mr. YATES. You do raise a valid point but I don't think the record shows any answer yet.

Mr. RIPLEY. When Frank Bow was a Regent he was constantly urging the Regents that we have a meeting of the Regents in places like China and if you would like to pursue this, Mr. Conte, maybe you can work it out to have one in Schezwan. You would have to be the point man of the meeting to see if you could get the rest of the Regents to go along.

Mr. CONTE. Thank you, Mr. Yates.

Mr. YATES. You do raise a very valid point and that is why I call it the Reagan theory of relativity, some people call it priority. Why does this experiment have priority over Mr. Lawton's Japanese painter who I think is integral to the well being of the Freer? Now, of course, David is just anxious to tell us why the knowledge respecting the pandas is essential. Poor Mr. Reed is stuck, he will not know about Chia-Chia for a few months yet. David's experiment may bring approval. Of course, it can't immediately, can it?

Go ahead, David, try again.

Mr. CHALLINOR. I guess what I am saying is that the pandas are a very good example in this case of something that we feel is very worth saving. The panda is an animal that is evidently in danger of extinction and in a sense this is just as valuable a living organism as the Chinese scroll that the Japanese restorer could save for another five or ten generations of people to look at and admire. There is an exciting talent that is essential to preserve, in this case a beautiful work of art for generations to see. Nonetheless I think from my perspective I have to preserve the existence of a beautiful and endangered animal which is just as justifiable. I do not think they are comparable is what I am saying.

Mr. YATES. I think Mr. Conte will accept that answer.

Mr. CONTE. Yes, except when I visited China many years ago I went to the zoo and I observed those pandas were doing very well there in the zoo. Maybe the problem that we are having here in the Washington zoo is that we have the wrong caretaker.

Mr. YATES. They don't feed them nearly as well.

Mr. REED. May I say something here. We are talking about my colleague Dr. Lawton and his problems and our problems. We want to study the giant panda. In the history of the world man has created great works of art. Throughout time mankind has had great artists in Greece, Rome, and in the Middle Ages. Even today all over the world—China, Japan, India, and even some of the men in Australia did great art work, if you like their type of art. But none ever created a panda, an elephant, a tiger or any animal. And once they are gone, one of the most beautiful things in the world, a fellow creature living with us on the Earth is gone and gone forever. Man with all his ingenuity, all of his brains, and all of his talent is never going to create another. Animals were created by our creator as we were.

Mr. YATES. And that is the purpose of this experiment.

Mr. REED. This is one of the reasons why it is important to study these animals to see if we can develop the means to assist the Chinese and the whole world community to save these animals from extinction. We are not going to save them by putting a fence around them and leaving them alone. We have to know how they relate to weather, to plants, to other animals, and who preys on the panda in the wild. The techniques of field management and field studies are techniques we should share with our Chinese colleagues. We will also learn from the Chinese.

Mr. YATES. Is the panda an endangered species?

Mr. REED. Yes, it is thought to be but no one really knows. In 1976 the bamboo flowered and died, 125 carcasses were found within the next year at the Wolong Nature Reserve because they are so closely tied to the bamboo. That is half the population of that area. Now the range of the panda is further than that one area so pandas elsewhere survived.

Mr. YATES. Wait a minute. You counted 125 carcasses?

Mr. REED. Yes, out of 200 animals in the Reserve.

Mr. YATES. Where?

Mr. REED. The Wolong Nature Reserve where the bamboo died.

Mr. YATES. It is like your Everglades pike that were not provided with snails.

Mr. REED. Yes, bamboo is grass so it dies after flowering. We don't know how soon the pandas will respond to this critical problem. So little is known about these animals that we must study them. This is an opportunity. The Chinese are coming to us and saying, 'We would like to share with you our experience.' We will be working with Chinese scientists.

Mr. YATES. What will the People's Republic of China contribute to this experiment?

Mr. REED. Local staff, transportation, logistics.

Mr. YATES. No staffing. They have a rice wine.

Mr. CONTE. Mr. Chairman, I am sorry I ever asked that question.

Mr. YATES. No, I am glad you did because somebody is liable to ask that question on the floor as to why we are doing this and I think it is important to have the responses both of Dr. Challinor and Dr. Reed in respect to this and I think they have presented us with very, very good answers.

Mr. CONTE. They were excellent answers.

Mr. REED. I want you to understand that I think the Freer Gallery of Art next to the zoo, is the best thing the Smithsonian has. I love that art gallery. I really enjoy it. This is my personal preference and I hate to put myself in an adversary position with Tom Lawton.

Mr. YATES. You didn't do it, the Members of Congress did it. Actually we have withdrawn that adversary position.

Mr. REED. We should restore wonderful Chinese art and restore animals in the wild.

Mr. YATES. Chinese art and animals.

Mr. REED. Animals all over the world.

Mr. YATES. In this instance Chinese animals.

COOPERATIVE PROJECTS WITH THE PEOPLE'S REPUBLIC OF CHINA

You have mentioned one experiment with the People's Republic of China. Are there others that you have with the People's Republic of China?

Mr. RIPLEY. Yes.

Mr. YATES. What other programs?

Mr. RIPLEY. We have a program which we are developing of relations in archeology and in zoology and botany at the present time and these involve the exchange of Chinese coming to this country for whom we will act as hosts in our museums and our people over a period of years going to their country to work in their universities.

Mr. YATES. How much is provided in the budget for that program?

Mr. RIPLEY. I don't know.

Dave, do you know?

Mr. CHALLINOR. This will all be the kind of project that we are talking about, the $100,000, the first program that will get underway. As this program develops, that base will be used to expand entomology. Botanists and entomologists will participate in the panda project as our agreement with the Chinese becomes firm.

The three people that will be going to China in April will look at certain reserves and decide with the Chinese colleagues in which place they will work. When that decision is made an agreement will be arrived at which will be signed later this coming summer to handle all the details. We will be doing what we call a broad scale biological survey of this reserve and it will not only be the pandas, it will be the plants and insects and everything else. The pandas will be the main focus because this is both a popular animal and important species in the ecosystem.

Mr. YATES. How many such programs are there? You mentioned four scientific pursuits. Are there nonscientific engagements by the Smithsonian with the Chinese, do you know? Are there cultural exchanges in which the Smithsonian engages with the People's Republic?

Mr. CHALLINOR. I am familiar with the scientific ones.

Mr. YATES. Mr. Perrot.

Mr. PERROT. We want to exchange exhibitions with the People's Republic. We have had discussions on that subject which have not yet matured but I hope, in years to come, that some of our exhibi-

tions will be going to the People's Republic and, in turn, that we will circulate some of their exhibitions here.

Mr. YATES. I saw an exhibition at the Field Museum in Chicago.

Mr. PERROT. That resulted from an agreement between the Metropolitan Museum, the Field Museum, the Los Angeles County Museum, and one or two others.

Mr. YATES. Do you know how that was funded, Mr. Perrot?

Mr. PERROT. Insurance was covered by indemnification, and I believe there were NEH grants, Mr. Chairman, but I do not have the precise figures in mind. The museums involved also contributed private funds.

Mr. RIPLEY. It is the kind of exhibit we could have and put on if we had either a Quadrangle or some surrogate exhibit area for it.

SPECIAL EXHIBITS GALLERY

Mr. YATES. We have covered the tiger. We have covered the panda in its natural and unnatural habitats. Now let's go back to the National Museum of Natural History and the Korean exhibit. How much of the cost of that exhibit is being covered by private donation?

Mr. CHALLINOR. May I defer to my colleague?

Mr. YATES. Is that your baby or Mr. Blitzer's?

Mr. CHALLINOR. It is being held in the National Museum of Natural History so it is partly my baby.

Mr. YATES. What do we have here?

Mr. CHALLINOR. This will cover the next questions, we hope. You asked about what is funding the Korean exhibit if I understand you correctly.

Mr. YATES. You understood me correctly.

Mr. PERROT. Mr. Chairman, some of the funds being used come from the National Museum of Natural History. Construction or rather the reconstruction of the special exhibition hall, was supported primarily by private funds. Other funds are being sought by the Office of Development for the exhibition. We have already received some contributions and we hope that it may be close to a "wash" at this point.

CORPORATE SPONSORSHIP OF EXHIBITIONS

Mr. YATES. Do you ever put on exhibitions at the request of corporations?

Mr. PERROT. No, Mr. Chairman. Not to my knowledge.

Mr. YATES. Do you, Mr. Ripley?

Mr. RIPLEY. We seek out funding for the exhibit.

Mr. YATES. Suppose one of your donors comes to you with a proposed exhibit and says, look, we have been awfully good to you, we have given you contributions and donations over the years and now we have some products that we think are in the national interest; would you show them in some kind of an exhibit? Do you ever do that?

Mr. RIPLEY. To my knowledge we have not had that question, I don't think.

Mr. YATES. Does anybody know?

Mr. CHALLINOR. The closest I remember, Mr. Chairman, is when they were trying to get an American SST when the French had the Concorde and we were approached by the White House to put out an SST exhibit. You remember there was a great deal of lobbying going around.

Mr. YATES. I remember very well because I offered the motion to kill the program.

Mr. CHALLINOR. We turned that request down. We said we would like to show all the other SSTs but we were not about to feature either Company A or Company B, the two American companies that were building the SST at large expense on their part.

Mr. YATES. When Mr. Perrot says that you are going out to the corporate community for funds to share in the expenses of this exhibit, this is an exhibit that the Smithsonian has undertaken and the funding is to be provided in part by the Federal Government and in part by donations and you hope to get those donations.

Mr. RIPLEY. Yes.

SPECIAL EXHIBITS GALLERY

Mr. YATES. Now suppose the donations are not forthcoming.

Mr. CHALLINOR. The exhibit will be reduced somewhat in quality. It depends on what we get.

Mr. YATES. Will it be reduced in quality?

Mr. RIPLEY. We cannot afford it.

Mr. YATES. As I remember, you requested $168,000. Was that the amount? It sounds like a marvelous exhibit. Was it "50,000 Years of Korean Art"?

Mr. RIPLEY. Five thousand years.

Mr. YATES. Five thousand years. My goodness.

Does it go beyond the Bronze Age to the Paleolithic?

Mr. RIPLEY. Yes, you are into the Paleolithic.

Mr. YATES. It is beautiful art. You want $860,000. How much do you want the Federal Government to put up for that? Is $860,000 the amount the Federal Government is requesting?

Mr. RIPLEY. No, I don't know where that figure comes from.

Mr. YATES. What is the amount?

Mr. CHALLINOR. At page A-21 at the bottom of the page you see our request for the Special Exhibits Gallery.

Mr. RIPLEY. That is independent of this exhibition.

Mr. YATES. You are going to make available 14,000 square feet of space.

Mr. RIPLEY. For which we have already received a major contribution from a donor and we do need some more money for the salaries of four temporary program coordinators and exhibit specialists who are needed to manage the exhibits galleries. That is a total of $79,000 and for the costs of restoring one of the three shows as planned each year. That is $164,000. That shows one each year will be from the museum's own collection. That would be like an ongoing part of our regular exhibits program.

Mr. YATES. All right.

EXHIBIT ITEMS FROM THE NATIONAL MUSEUM OF NATURAL HISTORY

Mr. RIPLEY. As an example of the kinds of exhibits that we show from the museum collection, Mr. Chairman, Mr. Fiske has here a couple of little cases that show artifacts from the Eskimo art collected by Dr. Nelson of the Geological Survey many years ago in Alaska.

Mr. CHALLINOR. These are examples of one hundred year-old artifacts from about 10,000 objects that Nelson brought back but have never been shown to the public. This is the sort of show that we would like to put on in this new gallery for which we are asking the Congress for $164,000 a year. The total amount is $243,000 but the $164,000 is for the cost of the show plus the $79,000 you see at the top of page A–22.

Mr. YATES. Didn't the National Gallery put on a show like this three or four years ago?

Mr. RIPLEY. You mean Eskimo art?

Mr. YATES. Yes, which showed some of the ancient artifacts.

Mr. RIPLEY. We borrowed from Russia and they borrowed from other institutions, yes.

Mr. YATES. How does that differ from yours?

Mr. RIPLEY. I think this will be, substantively speaking, a rather major show.

STATUTORY COMPONENTS OF SMITHSONIAN

Mr. YATES. I thought theirs was, too, but go ahead. That is part of the Smithsonian, too, isn't it?

Mr. RIPLEY. You keep asking us that question and I am sure you can answer it.

Mr. YATES. Here on your chart on page one it shows that the National Gallery of Art is part of the Smithsonian.

Mr. JAMESON. Dotted lines, Mr. Chairman.

Mr. YATES. A dotted line. I had not noticed that. Is that so it can be torn off?

Mr. JAMESON. Yes. It is a clipping, you know.

Mr. YATES. I had asked Judge Powers, I believe, in the last hearing or subsequent to the last hearing what the relationship was between the National Gallery of Art and the John F. Kennedy Center for the Performing Arts and the Smithsonian Institution. This letter is from the Smithsonian Institution and it is signed by Mr. Ripley which looks like a very important document, certainly historically, and it may go into the record at this point supplementing Mr. Jameson's comment on the dotted nature of the lines surrounding your Institution.

[The information follows:]

NATIONAL GALLERY OF ART

Regarding the relationship of the National Gallery of Art to the Smithsonian Institution, it appears that the Board of Regents was fully aware of the gift from Mr. Mellon and the conditions he attached thereto, and accepted without objection that the National Gallery of Art would function as an autonomous bureau of the Smithsonian Institution.

The Permanent Committee of the Board of Regents reviewed the proposal (referred to as the "Trust Indenture") and at a special meeting of the Board of Regents on June 24, 1937, approved it.

In the book titled "National Gallery of Art" written by John Walker in 1963 (Abrams), the rationale leading up to acceptance of the gift indicating some of the reasoning which was considered at the time, was set forth on page 17 as follows:

"The first real step toward the founding of an adequate national gallery was made by Andrew Mellon. . . . It was during the period of his Secretaryship of the Treasury and afterward while Ambassador to the Court of St. James's that he came to his important decision about the original National Gallery. He felt that it would always be handicapped by a position subordinate to the great scientific and historical collections of the Smithsonian Institution. He realized that the only solution was to establish a new gallery, in a building of its own, with its own endowment, its own appropriation from the Federal Government, and its own Board of Trustees. On the other hand, he thought it wise that the contemplated gallery should be placed under the aegis of the Smithsonian Institution, which had always been free from political interference. He offered to erect a building, to give his collection, and to provide an endowment on condition that Congress would appropriate funds to support the new museum."

There are specific conditions in the "Trust Indenture" which describe the relationship of the National Gallery to the Smithsonian. A copy of the Trust Indenture is attached but specific portions are quoted as follows:

I. ERECTION OF THE NATIONAL GALLERY OF ART

". . . The donor shall pay all costs and expenses in connection with, or incident to, said project. In no event and under no circumstances shall the Institution or the trustees be responsible or liable for any part of such cost or expense, and the donor shall indemnify and save harmless the Institution and the trustees from any and every liability whatsoever with reference to anything done or omitted to be done in connection with the carrying out of said project or any part thereof. The Institution and the trustees are expressly relieved of any responsibility or duty pertaining to said project, and the entire and exclusive jurisdiction and responsibility thereover and with regard thereto are imposed upon and vested in the donor . . .

". . . As and when said project shall be finally completed by the construction, equipment, and furnishing of said building and the landscaping of said area in accordance with said plans and specifications, the donor will give written notice thereof to the Institution and the trustees and thereupon, without further action by any of the parties hereto, the legal title to said building shall be deemed to be vested in the Institution, but the maintenance and administration of said building and of the site shall be vested exclusively in, and shall be the sole obligation and duty of, the trustees as a separate bureau of the Institution, and distinct from the other activities of the Institution, which are under the management of its Board of Regents."

V. PASSAGE OF TITLE AND RESPECTIVE FUNCTIONS OF INSTITUTION AND OF TRUSTEES

"Forthwith upon the execution and delivery hereof, the title to said collection of works of art shall pass to and be vested in the Institution. While it is the intention that the title to said works of art shall be forever vested in the Institution, yet it is also the intention of the parties hereto, and this gift is made upon the express understanding, agreement, and trust, that *from and after the completion of the National Gallery of Art, the actual custody, control, managment, and exhibition of said works of art, as well as of such other works of art as, in accordance with the provisions of said joint resolution, from time to time may be housed or exhibited in said National Gallery of Art, and all the details pertaining thereto, shall be, and hereby are, delegated to and vested solely, exclusively and forever in the trustees.*"

IX. ALTERATION OR MODIFICATION OF THIS INDENTURE

". . . the trustees, with the approval of at least three-fourths of the entire membership of the trustees, and the Institution, pursuant to approval of at least three-fourths of its Board of Regents or other duly constituted authority, shall have the right, power, and authority, by supplemental indenture, to effect any such alteration, modification, or amendment hereof, or supplement hereto, provided however, that no alteration, modification, or amendment of this trust indenture, or any supplement thereof, shall be made which shall be in violation of the provisions of said joint resolution or of any future act of Congress relating to the National Gallery of Art . . ."

* * * * * * *

The authorizing Act, Public Resolution No. 14, 75th Congress, "providing for the construction and maintenance of a National Gallery of Art" as a bureau of the

Smithsonian Institution, indicates the remaining relationship with the Institution to be the responsibility of the Secretary as a member ex officio of the Board of Trustees; and under the Trust Indenture the amendatory power set forth above under IX.

ANNUAL REPORT SMITHSONIAN INSTITUTION, 1937—REPORT OF THE SECRETARY

MATTERS OF GENERAL INTEREST—ANDREW W. MELLON'S ART GIFT TO THE NATION

Probably the greatest impetus ever given to the development of art in the Nation's Capital and in the Nation itself will result from Andrew W. Mellon's munificent gift to the American people of his unexcelled art collection, a $10,000,000 building to exhibit it, and an endowment fund to pay the salaries of the directing officials and for the acquisition of additional art works. The proposal was made by Mr. Mellon in a letter to President Roosevelt dated December 22, 1936, which began as follows:

Over a period of many years I have been acquiring important and rare paintings and sculpture with the idea that ultimately they would become the property of the people of the United States and be made available to them in a national art gallery to be maintained in the city of Washington for the purpose of encouraging and developing a study of the fine arts.

* * * * * * *

In order to carry out this purpose, and with the approval of the other trustees, I wish to propose a plan to give the art collection which I have brought together to the Smithsonian Institution or to the United States Government for the benefit of the people of this country, and also to erect or cause to be erected on public land a suitable building for a national gallery or art, the design and materials of which shall be subject to the approval of the Fine Arts Commission.

Following an exchange of correspondence with the President, Mr. Mellon made his formal offer in a letter dated December 31, 1936. In consultation with representatives of the Department of Justice and the Secretary of the Smithsonian Institution a bill was prepared by representatives of Mr. Mellon as House Joint Resolution 217 covering the matter. After hearings, the resolution was agreed to by Congress and approved by the President on March 24, 1937. The full text of the resolution follows:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the area bounded by Seventh Street, Constitution Avenue, Fourth Street, and North Mall Drive, Northwest, in the District of Columbia, is hereby appropriated to the Smithsonian Institution as a site for a National Gallery of Art. The Smithsonian Institution is authorized to permit the A. W. Mellon Educational and Charitable Trust (hereinafter referred to as the donor) to construct on said site for the Smithsonian Institution a building to be designated the National Gallery of Art, and to remove any existing structure and landscape the grounds within said area. The adjoining area bounded by Fourth Street, Pennsylvania Avenue, Third Street, and North Mall Drive. Northwest, in the District of Columbia, is hereby reserved as a site for future additions to the National Gallery of Art. The project shall be in accordance with plans and specifications approved by the Commission of Fine Arts.

SEC. 2. (a) There is hereby established in the Smithsonian Institution a bureau, which shall be directed by a board to be known as the Trustees of the National Gallery of Art, whose duty it shall be to maintain and administer the National Gallery of Art and site thereof and to execute such other functions as are vested in the board by this Act. The board shall be composed as follows: The Chief Justice of the United States, the Secretary of State, the Secretary of the Treasury, and the Secretary of the Smithsonian Institution, ex officio; and five general trustees who shall be citizens of the United States, to be chosen as hereinafter provided. No officer or employee of the Federal Government shall be eligible to be chosen as a general trustee.

(b) The general trustees first taking office shall be chosen by the Board of Regents of the Smithsonian Institution, subject to the approval of the donor, and shall have terms expiring one each on July 1 of 1939, 1941, 1943, 1945, and 1947, as designated by the Board of Regents. A successor shall be chosen by a majority vote of the general trustees and shall have a term expiring ten years from the date of the expiration of the term for which his predecessor was chosen, except that a successor chosen to fill a vacancy occurring prior to the expiration of such term shall be chosen only for the remainder of such term.

SEC. 3. Upon completion of the National Gallery of Art, the board shall accept for the Smithsonian Institution as a gift from the donor a collection of works of art which shall be housed and exhibited in the National Gallery of Art.

SEC. 4. (a) The faith of the United States is pledged that, on completion of the National Gallery of Art by the donor in accordance with the terms of this Act and the acquisition from the donor of the collection of works of art, the United States will provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs of operation thereof, including the protection and care of works of art acquired by the board, so that the National Gallery of Art shall be at all times properly maintained and the works of art contained therein shall be exhibited regularly to the general public free of charge. For these purposes there are hereby authorized to be appropriated such sums as may be necessary.

(b) The board is authorized to accept for the Smithsonian Institution and to hold and administer gifts, bequests, or devises of money, securities, or other property of whatsoever character for the benefit of the National Gallery of Art. Unless otherwise restricted by the terms of the gift, bequest, or devise, the board is authorized to sell or exchange and to invest or reinvest in such investments as it may determine from time to time the moneys, securities, or other property composing trust funds given, bequeathed, or devised to or for the benefit of the National Gallery of Art. The income as and when collected shall be placed in such despositaries as the board determine and shall be subject to expenditure by the board.

(c) The board shall appoint and fix the compensation and duties of a director, an assistant director, a secretary, and a chief curator of the National Gallery of Art, and of such other officers and employees of the National Gallery of Art as may be necessary for the efficient administration of the functions of the board. Such director, assistant director, secretary, and chief curator shall be compensated from trust funds available to the board for the purpose, and their appointment and salaries shall not be subject to the civil-service laws or the Classification Act of 1923, as amended. The director, assistant director, secretary, and chief curator shall be well qualified by experience and training to perform the duties of their office and the original appointment to each such office shall be subject to the approval of the donor.

(d) The actions of the board, including any payment made or directed to be made by it from any trust funds, shall not be subject to review by any officer or agency other than a court of law.

SEC. 5. (a) The board is authorized to adopt an official seal which shall be judicially noticed and to make such bylaws, rules, and regulations, as it deems necessary for the administration of its functions under this Act, including, among other matters, bylaws, rules, and regulations relating to the acquisitions, exhibition, and loan of works of art, the administration of its trust funds, and the organization and procedure of the board. The board may function notwithstanding vacancies, and three members of the board shall constitute a quorum for the transaction of business.

(b) In order that the collection of the National Gallery of Art shall always be maintained at a high standard and in order to prevent the introduction therein of inferior works of art, no work of art shall be included in the permanent collection of the National Gallery of Art unless it be of similar high standard of quality to those in the collection acquired from the donor.

(c) The board shall have all the usual powers and obligations of a trustee in respect of all trust funds administered by it and all works of art acquired by it.

(d) The board shall submit to the Smithsonian Institution an annual report of its operations under this Act, including a detailed statement of all acquisitions and loans of works of art and of all public and private moneys received and disbursed.

SEC. 6 (a) The Commissioners of the District of Columbia are hereby authorized and directed to close Sixth Street, Northwest, within the boundaries of the site for the National Gallery of Art. The National Capital Park and Planning Commission shall determine the building lines and approve the plan of approaches for said gallery, and shall also make recommendations for the widening and adjustment of Third, Seventh, Ninth, and such other streets in the vicinity as may be necessary and desirable to provide for the traffic which would otherwise use Sixth Street.

(b) Section 10 of the Public Building Act, approved Mach 4, 1913 (37 Stat. L., p. 881), relating to the George Washington Memorial Building, and all provisions of law amendatory thereof, are hereby repealed.

(c) The existing bureau of the Smithsonian Institution now designated as a national gallery of art shall hereafter be known as the National Collection of Fine Arts.

(d) The fifth paragraph under the heading "Smithsonian Institution" in the Independent Offices Appropriation Act for the fiscal year 1924, approved February 13,

1923 (42 Stat. L. 1235), relating to the erection of a national gallery of art, is hereby repealed.

Approved, March 24, 1937.

At a special meeting of the Board of Regents of the Institution held on June 24, 1937, there were submitted copies of a trust indenture between the A. W. Mellon Educational and Charitable Trust, the Smithsonian Institution, and the trustees of the National Gallery of Art. After consideration, the following resolution was adopted:

Resolved: That the trust indenture between the A. W. Mellon Educational and Charitable Trust, the Smithsonian Institution and the trustees of the National Gallery of Art, a draft whereof has been presented at this meeting, and hereby is directed to be inserted in the minute book of the Regents immmediately following the minutes of this meeting, be, and hereby it is, approved, and the Secretary of the Institution be, and hereby he is, authorized and directed to execute such indenture, in triplicate, in the name and under the corporate seal of this Institution, and upon its due execution and by the other parties thereto to make proper delivery thereof.

The full text of the trust indenture is as follows:

TRUST INDENTURE

Dated the 24th day of June 1937, and intended to be effective upon that date, although executed by the parties hereto on various other dates, by, between, and among

Andrew W. Mellon, Paul Mellon, Donald D. Shepard and David K. E. Bruce, as trustees of the A. W. Mellon Educational and Charitable Trust, established under and by virtue of a deed of trust of Andrew W. Mellon to said trustees, dated December 30, 1930, parties of the first part, and hereinafter sometimes referred to as the "Donor";

Smithsonian Institution, an establishment created and existing under and by virtue of an act of the Congress of the United States of America, approved August 10, 1846, party of the second part, and hereinafter referred to as the "Institution"; and

The trustees of the National Gallery of Art, constituted under and by virtue of a Joint Resolution of the Congress of the United States, entitled "Joint Resolution providing for the Construction and Maintenance of a National Gallery of Art," approved March 24, 1937, parties of the third part, and hereinafter sometimes referred to as the "Trustees."

Whereas in December 1936, by correspondence between the President of the United States of America and Andrew W. Mellon, the donor proposed to give a collection of works of art for the benefit of the people of the United States of America and to cause to be erected on public land a suitable building in which to house and exhibit such collection, copies of such correspondence being hereunto attached and made part hereof; and

Whereas by said joint resolution of the Congress, there was established a bureau in the Institution to be directed by the trustees, and provision was made for the construction of said building, the acceptance of a collection of works of art as a gift from the donor and the exhibition thereof and of other appropriate works of art in said building, and the administration by the trustees of said building, the site and contents thereof, and all matters and affairs that pertain to the use thereof for the public benefit; and

Whereas it is now desired to consummate the gift of said building and said collection of works of art and to specify more particularly the terms and conditions upon which said gift is made by the donor and accepted by the Institution and the truatees, and

Whereas by said correspondence, one of the conditions of the gift was that the upkeep of the gallery building and other administrative expenses and costs of operation and functioning of the gallery would be provided for annually in appropriations to be made by Congress; and by said joint resolution, the faith of the United States was pledged that it would provide such funds as would be necessary for the upkeep of the gallery and the administrative expenses and cost of operation thereof, including the protection and care of works of art acquired by the trustees;

NOW, THEREFORE, THIS INDENTURE WITNESSETH:

I. Erection of the National Gallery of Art

In accordance with the provisions of said joint resolution of the Congress, the Institution hereby permits the donor to construct, and the donor hereby agrees to construct for the Institution, a building to be designated and hereinafter referred to as the "National Gallery of Art" upon the area bounded by Seventh Street, Consti-

tution Avenue, Fourth Street, and North Mall Drive, N.W., in the District of Columbia (being the site appropriated to the Institution by said joint resolution), and to remove any existing structure and to landscape the grounds within said area, all in accordance with plans and specification approved by the Commission of Fine Arts. The building line and plans of approaches for said building shall be approved by the National Capital Park and Planning Commission. The donor, in its uncontrolled discretion but at its sole expense, shall engage such architects, contractors, builders, and others, and shall take or cause to be taken any and every other action necessary or advisable with the construction, completion, equipment, and furnishing of said building, and the landscaping of said area upon which it is erected. The donor shall pay all costs and expenses in connection with, or incident to, said project. In no event and under no circumstances shall the Institution or the trustees to responsible or liable for any part of such cost or expense, and the donor shall indemnify and save harmless the Institution and the trustees from any and every liability whatsoever with reference to anything done or omitted to be done in connection with the carrying out of said project or any part thereof. The Institution and the trustees are expressly relieved of any responsibility or duty pertaining to said project, and the entire and exclusive jurisdiction and responsibility thereover and with regard thereto are imposed upon and vested in the donor. Said project shall be commenced as soon after the execution and delivery hereof as, in the judgment of the donor, the necessary plans, specifications, and arrangements can be made and effected, and will be proceeded with as expeditiously as, in the judgment of the donor, the execution of the work can properly be effected, but as the building is of monumental character and is intended to have outstanding architectual merit, it is agreed that undue haste is not desirable, and no time for the final completion of the project can be fixed. As and when said project shall be finally completed by the construction, equipment, and furnishing of said building and the landscaping of said area in accordance with said plans and specifications, the donor will give written notice thereof to the Institution and the trustees and thereupon, without further action by any of the parties hereto, the legal title to said building shall be deemed to be vested in the Institution, but the maintenance and administration of said building and of the site shall be vested exclusively in, and shall be the sole obligation and duty of, the trustees as a separate bureau of the Institution, and distinct from the other activities of the Institution, which are under the management of its Board of Regents.

II. Name of Gallery

Said gallery shall be known and designated perpetually as the "National Gallery of Art", to which the entire public shall forever have access, subject only to reasonable regulations from time to time established by the trustees.

III. Gift of Collection of Works of Art

The donor hereby gives to the Institution and the trustees, and they hereby accept from the donor, in trust, however, for the uses and purposes and subject to the provisions and conditions hereinafter expressed, the collection of works of art listed in the schedule hereto attached, made part hereof and marked "Exhibit 1."

IV. Custody of Collection Pending Completion of the National of Art

Pending the completion of the National Gallery of Art, said collection of works of art shall remain in the custody of the donor. During such period of custody, the donor will care for all said works of art, and will keep the same insured in favor of the Institution and the trustees, as their respective interests may appear, against loss or damage by fire, theft, or burglary, in such amounts and with such parties as the donor, in its discretion, may determine, if and to the extent that such insurance may be obtainable. The donor shall pay all costs, premiums, and other charges incident to such care and insurance. Upon the completion of the National Gallery of Art, said collection shall be delivered to the trustees and thereafter shall remain under their exclusive control.

V. Passage of Title and Respective Functions of Institution and of Trustees

Forthwith upon the execution and delivery hereof, the title to said collection of works of art shall pass to and be vested in the Institution. While it is the intention that the title to said works of art shall be forever vested in the Institution, yet it is also the intention of the parties hereto, and this gift is made upon the express understanding, agreement, and trust, that from and after the completion of the National Gallery of Art, the actual custody, control, management, and exhibition of

said works of art, as well as of such other works of art as, in accordance with the provisions of said joint resolution, from time to time may be housed or exhibited in said National Gallery of Art, and all the details pertaining thereto, shall be, and hereby are, delegated to and vested solely, exclusively and forever in the trustees.

VI. Display of Collection

Subject to the subsequent provisions of this section VI, the said collection of works of art shall always be kept in the National Gallery of Art, and none thereof shall be removed from said building or from their settings therein except for most cogent reasons therefor, such as repairs to said building or said works of art, or temporary exhibition of some of such works of art elsewhere, and then only with the prior approval of a majority of the entire membership of the trustees. The works of art constituting said collection shall receive such care and attention from time to time as shall be necessary for their preservation and exhibition, shall always be exhibited in said National Gallery of Art in spacious arrangement so that overcrowding will be avoided, and shall always be displayed with dignity, in appropriate units, with suitable settings and with due regard to their importance and quality.

While the parties hereto presently recognize that all the works of art constituting said collection are of such high standard of quality that it is essential that such collection perpetually remain intact and be a part of the permanent collection on exhibition in the National Gallery of Art, and such is the purport of this indenture, the donor at the same time recognizes the inadvisability of perpetually foreclosing any discretion in the trustees in regard to the disposition of any of the works of art constituting such collection and, consequently, the donor authorizes and empowers the trustees, but only upon the prior approval of not less than three-fourths of the entire membership of the trustees, to exchange or otherwise dispose of any particular work of art then a part of said collection, if in such exchange or by reason of such other disposition the trustees are enabled to obtain for the Institution, to be and become a part of the collection under the Indenture, some other work of art which, in the judgment of the trustees, would be a highly desirable acquisition to such collection. Furthermore, the donor recognizes that with the passing of time it may come to be thought by at least three-fourths of the entire membership of the trustees that some particular work of art, then constituting a part of said collection, has become unsuitable longer to remain as a part of said collection, and therefore the donor provides that in the event that, in the opinion of at least three-fourths of the entire membership of the trustees, any particular work of art then a part of said collection is not in keeping with said collection as a whole, the trustees are authorized and empowered to make such disposition thereof as they, in their uncontrolled discretion, shall deem advisable by sale, exchange, gift, loan, or otherwise.

VII. Maintenance of the National Gallery of Art

The National Gallery of Art shall be the permanent home of the said collection of works of art hereby given by the donor. It shall be used exclusively for the storage and exhibition of works of art and the administration of the affairs of the trustees. In order that the collection of the National Gallery of Art shall always be maintained at a high standard and to prevent the introduction therein of inferior works of art, no work of art shall be included in the permanent collection of the National Gallery of Art unless it be of similar high standard of quality to those in the collection hereby given by the donor. The building and the contents and operations thereof shall at all times remain in the exclusive jurisdiction and control of the trustees in accordance with such by-laws, rules, and regulations as they from time to time shall prescribe.

It is an express condition of the trust of said collection of works of art, hereby created, that the faith of the United States is pledged that, on completion of the National Gallery of Art by the donor in accordance with the terms of said joint resolution and the acquisition from the donor of the collection of works of art, the United States will provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs or operation thereof, including the protection and care of works of art acquired by the Board, so that the National Gallery of Art shall be at all times properly maintained and the works of art contained therein shall be exhibited regularly to the general public free of charge.

VIII. The Trustees

The trustees shall always be not less than nine persons, of whom a minority, to be known as ex-officio trustees, shall be officers of the United States or of the Institution, ex-officio, and of whom a majority to be known as general trustees, shall be

citizens of the United States, none of whom at the time of his or her election of the office of general trustee shall be an officer or employee of the United States of America. Any vacancy in the office of general trustee by reason of the expiration of the term, death, or resignation of the incumbent, or otherwise howsoever, shall be filled by the election of a competent person by a majority of the remaining general trustees.

XI. Alteration or Modification of This Indenture

(*a*) During the existence of the donor

At any time and from time to time hereafter, with the consent of the Institution, the trustees, and the donor, this trust indenture may be altered, modified, or supplemented in any respect whatever, as the parties hereto may deem advisable or necessary, which shall not be inconsistent with the general purpose and scope of this trust indenture and of the said joint resolution.

(*b*) After the termination of the donor

While this trust indenture is entered into by the parties hereto with the intention, and it is the purport hereof, that the trust hereby created shall be administrated strictly in accordance with the terms, provisions, and conditions of this indenture and of said joint resolution, the parties hereto recognize that with the passing of time and changed conditions, some of such terms, provisions, or conditions may become inconvenient or impossible of observance or the observance thereof may become detrimental to the primary purpose of the donor that the National Gallery of Art and the contents thereof, including the donor's collection of works of art, shall at all times be available for the benefit and enjoyment of the public, or situations or conditions, not now thought of or inadequately provided for in this indenture, may arise and the proper administration of this trust may require such conditions or situations to be properly and practically dealt with, and consequently, the parties hereto agree and expressly provide that if at any time and from time to time, but only after the termination of the A. W. Mellon Educational and Charitable Trust by the terms of the deed of trust creating such trust or otherwise, three-fourths of the entire membership of the trustees and three-fourths of the entire number of the regents or other duly constituted governing body of the Institution shall be of the opinion that in order properly to administer the National Gallery of Art and the site and contents thereof in the interest and for the benefit of the public, this indenture of trust should be altered, modified, or amended as respects any of its terms, provisions, or conditions, or should be supplemented so as adequately to provide for new conditions or situations, then and in every such event the trustees, with the approval of at least three-fourths of the entire membership of the trustees, and the Institution, pursuant to approval of at least three-fourths of its Board of Regents or other duly constituted authority, shall have the right, power, and authority, by supplemental indenture, to effect any such alteration, modification, or amendment hereof, or supplement hereto, provided however, that no alteration, modification, or amendment of this trust indenture, or any supplement thereof, shall be made which shall be in violation of the provisions of said joint resolution or of any future act of Congress relating to the National Gallery of Art; and provided further, that in no event and under no circumstance shall this trust indenture be altered, modified, amended, or supplemented as respects the provisions of article VIII hereof, it being the intention and one of the express conditions of the gift hereby made by the donor that the trust hereby created shall perpetually be administered by trustees constituted in accordance with the provisions of article VIII hereof.

For the purpose of this section IX, the A. W. Mellon Educational and Charitable Trust shall be conclusively deemed to have been terminated if three-fourths of the entire membership of the trustees, after such careful inquiry as they shall deem to be sufficient, shall be of the opinion that such trust no longer continues to exist.

In witness whereof, the A. W. Mellon Educational and Charitable Trust has caused this indenture of trust to be executed by the hands and seals of the trustees thereof; the Smithsonian Institution, pursuant to a resolution duly adopted by its Board of Regents, has caused this indenture of trust to be signed and its official seal to be hereunto affixed by its secretary; and the trustees of National Gallery of Art have caused this indenture of trust to be executed by the hands and seals of the trustees, all as of the day and year first above written.

THE A. W. MELLON EDUCATIONAL
AND CHARITABLE TRUST,

By (Signed) ANDREW W. MELLON,
(Signed) PAUL MELLON,
(Signed) DONALD D. SHEPARD,

(Signed) DAVID K. E. BRUCE,
Trustees thereof.

[SEAL] SMITHSONIAN INSITUTION,
By (Signed) C. G. ABBOT, *Secretary.*
NATIONAL GALLERY OF ART,
By (Signed) CHARLES EVANS HUGHES,
(Signed) CORDELL HULL,
(Signed) HENRY MORGENTHAU, JR.,
(Signed) C. G. ABBOT,
(Signed) A. W. MELLON,
(Signed) DAVID K. E. BRUCE,
(Signed) DUNCAN PHILLIPS,
(Signed) S. PARKER GILBERT,
(Signed) DONALD D. SHEPARD,
Trustees thereof.

At the same meeting of the Board of Regents the following gentlemen were appointed as general trustees of the National Gallery of Art:

Mr. Donald D. Shepard, for the term expiring July 1, 1939;
Mr. S. Parker Gillbert, for the term expiring July 1, 1941;
Mr. Duncan Phillips, for the term expiring July 1, 1943;
Mr. David K. E. Bruce, for the term expiring July 1, 1945;
Mr. A. W. Mellon, for the term expiring July 1, 1947.

Following this final step in the consummation of Mr. Mellon's gift to the Nation, work was started promptly on the preparation of the site. The architect selected for the building by Mr. Mellon was John Russell Pope, the architect for many art galleries, museums, and public buildings here and abroad, including the National Archives Building, Constitution Hall, the Masonic Temple, and others in Washington. According to Mr. Pope, the building will follow the finest traditions of American architecture and will be carefully scaled in proportion with the surrounding buildings. Constructed of marble, the gallery will be 829 feet long, about 350 feet wide at its greatest width, with the central dome 150 feet high. Mr. Pope has assured that the building will incorporate all the best features of the world's art galleries, and in certain respects will be in advance of any existing gallery, notably in relation to lighting and in provision to lessen the fatigue of visitors.

Regarding the collection itself, which will be installed in the building upon its completion and which will form the nucleus and establish the standard of excellence of the National Gallery of Art, the following brief description was given before the House Committee on the Library by Mr. David E. Finley:

"Mr. Mellon has been making this collection for more than 40 years. It is not large as regards the number of pictures. It contains something like a hundred paintings by old masters. But practically all are important, for Mr. Mellon has tried to buy not only paintings by the greatest masters, but also the best examples of their work obtainable. As a result, everyone who sees the collection—and many of the greatest experts in this country and Europe have seen it—is impressed with the exceptional quality of the pictures.

* * * * * * *

"In range it covers all the important schools of western European painting. The Italian school is particularly well represented by painters such as Raphael, Perugino, Botticelli, Fra Angelico, Titian, Bellini, Antonella di Messina, and by such rare and early masters as Cimabue, Masaccio, and Andrea del Castagno. There is a Byzantine Madonna and Child, painted in Constantinople early in the thirteenth century, which takes the collection back to the very source of western art, and with the other paintings gives a historical sequence to the collection that will prove very valuable to students.

"The Flemish school is represented by most of its greatest painters, beginning with the Annunciation by Jan van Eyck, and continuing through Petrus Christus, Rogier van der Weyden, Memling, Gerard David, and ending with two magnificent Rubens from the Hermitage Gallery and three Van Dycks, including the exceptionally fine portrait, painted in Genoa, of the Marchesa Balbi.

"In the Dutch school there are several outstanding examples of Rembrandt and Frans Hals and three Vermeers, as well as several Hobbemas, and works by Terburg, Metsu, deHoogh, and so forth.

"The Spanish paintings include three portraits by Velasquez, one of Pope Innocent X from the Hermitage, being particularly important. There are also four Goyas and two El Grecos, while the German and French paintings include such names as Holbein, Dürer, and Chardin. The British school is quite largely represented by

works of Gainsborough, Reynolds, Raeburn, Romney, Lawrence, Hopner, Turner, and Constable.

"In addition to these paintings, Mr. Mellon also acquired a number of portraits by important American painters, such as Gilbert Stuart, Copley, West, Sully, and others. He bought also, in its entirety, the Clarke collection of American portraits, containing some 175 paintings by practically all our earlier well-known American painters. This was not done with the idea that these should go into the National Gallery of Art, but rather that such as were suitable and of general or historic interest should form the nucleus of a National Portrait Gallery, which should be entirely distinct from the art gallery and would be housed, eventually at least, in its own building. A few of the finest of these portraits, which have the greatest artistic merit, will find their place in the art gallery and will form a fitting sequence to the British art of the eighteenth century represented in the collection.

"There is just one other matter that I must mention. Mr. Mellon's idea had been originally that the gallery should be for paintings only. Then an opportunity came to buy the Dreyfus collection of Renaissance sculpture—a collection that had been in the making in Paris for many years and included outstanding works by such great artists as Donatello, Verrocchio, Desiderio da Settignano, Luca della Robbia, and others. Naturally, such an opportunity could not be refused and he acquired these sculptures. He also bought two very important large bronzes by Sansovino and a Mercury by Giovanni da Bologna, all of which will find their place in the new gallery, either with the paintings or near them."

This report covers only the year ending June 30, 1937, but to anticipate slightly the next fiscal year, I must record here with profound regret the death of Mr. Mellon on August 26, 1937, and of Mr. Pope on August 27, 1937. It is indeed tragic that these two men could not have lived to see the completion of this spendid project—a remark which will be repeated by many of the millions of Americans who in future years will enter the National Gallery of Art to benefit from Mr. Mellon's patriotic gift to the Nation.

PROPOSED SMITHSONIAN GALLERY OF ART

On March 15, 1937, a joint resolution was introduced in the House of Representatives by Mr. Keller of Illinois to establish a Smithsonian Gallery of Art for the proper housing and display of the national collections of fine arts. These collections have been in the custody of the Smithsonian Institution for many years, and since 1920 have been administered by the Institution as a Government bureau officially designated the National Gallery of Art. Lacking a building for their public exhibition, these valuable art collections have been shown in the Natural History Building of the United States National Museum. With the creation in 1937 of the new National Gallery of Art as a result of the munificent gift of Andrew W. Mellon, the Smithsonian gallery was officially renamed the National Collection of Fine Arts. It is for the proper housing of this collection, now valued at approximately $10,000,000, that the present joint resolution provides.

The resolution sets aside a tract of land on the Mall between Twelfth and Fourteenth Streets and Constitution Avenue and North Mall Drive; creates a Smithsonian Gallery of Art Commission to make preliminary investigations and obtain designs for the building; authorizes the appropriation of $4,800,000 for the building; authorizes annual appropriations for the maintenance of the gallery; and states the policy of the gallery as follows:

"SEC. 7. It shall be the policy of the gallery to maintain a worthy standard for the acceptance of art objects or exhibition in the Smithsonian Gallery of Art; to foster by public exhibitions from time to time in Washington and other parts of the United States a growing public appreciation of art both of past and contemporary time; and further, as funds are available, to encourage the development of art by the purchase of worthy examples of contemporary or other art works, and to invite the private donation of funds therefor.

"SEC. 8. The Smithsonian Gallery of Art shall be under the administration of the Regents and Secretary of the Smithsonian Institution."

The resolution did not pass the first session of the Seventy-fifth Congress, but it is hoped that favorable action may be taken at the next session.

For many years the Smithsonian Institution has urged the construction of a suitable building for the housing and public exhibition of the art collections belonging to the Nation. These collections contain many works of art of high quality, mainly gifts from private citizens, and there is no doubt that many more such gifts would be made were proper exhibition space available. As much of the collection as possible has been exhibited to the public in the halls of the National Museum, but the available space there was not specifically designed for the display of art works, and in spite of being overcrowded, the space is entirely inadequate, so that many

things which should be on exhibition are forced into storage. It is the urgent hope of the Institution that the proposed Smithsonian Gallery of Art may become a reality in the near future.

It will in no sense be a duplication of the newly received National Gallery, for the National Gallery is restricted to classic painting and sculpture, leaving the fields of National collections in contemporary art of all kinds, portraits, jewels, glass, tapestry, and other kinds of art unprovided for. There is already a large national collection of such objects, and every reason to expect great increase if a suitable gallery were available.

John F. Kennedy Center for the Performing Arts

The original legislation creating the National Cultural Center (subsequently named the John F. Kennedy Center for the Performing Arts) was introduced in the Senate by Senator Fulbright (S. 3335) and in the House by Congressman Frank Thompson (H.R. 9848) in January 1958. The bill was to provide for erection of a National Capital Center for the Performing Arts, to be constructed with funds raised by voluntary contributions on land donated by the Government, located in the District of Columbia. The original bill would have placed responsibility for administering the Center in the Board of Regents on a site originally designated by the 1938 Act for a Smithsonian Gallery of Art. However, these provisions were changed.

Controversy developed over the site recommended in the National Capital Center bill since the site referred to had been set aside pursuant to the 1938 Act for construction of an art gallery. The plan for this gallery changed when the possibility of the transfer of the old Patent Office Building for art gallery purposes became known. Legislation subsequently enacted provided for the transfer of the Patent Office Building to the Smithsonian and assignment of the site on the Mall as a location for the National Air Museum.

The coauthors of the two Cultural Center bills worked out an amendment to S. 3335 proposing the building to be located on a site in Foggy Bottom near the Potomac River. Subsequently, other amendments were agreed upon resulting in the enactment of P.L. 85-874 on September 2, 1958.

It should be noted that Congressman Thompson, who sponsored the legislation in the House, stated that he had prepared a tentative draft of the bill based on Public Resolution No. 14, 75th Congress, which established the National Gallery of Art. Mr. Thompson, in discussing the bill, said that it provided first, that the Federal Government donate a choice site for the cultural center in the same way it donated land for the Mellon and Freer art galleries; secondly, it gives the National Cultural Center the same status in the Federal Government as the Mellon Gallery, and, the Mellon Gallery is a branch of the Smithsonian Institution.

It should also be noted that during the period January to September, 1958, when this matter was being heard by both the House and Senate Committees on Public Works, Senators Anderson and Saltonstall were members of the Board of Regents. Senator Anderson took an active part in this legislation. Senator Fulbright, the sponsor and prime mover of this bill in the Senate, became a Regent in 1959.

The Board of Regents received reports at its meetings in January 1959, January 1960, May 1960, May 1962, and May 1963 regarding progress on National Cultural Center matters.

The Act, a copy of which is attached, provided that:

"Sec. 2(a) There is hereby established in the Smithsonian Institution a bureau, which shall be directed by a board to be known as the Trustees of the National Cultural Center, whose duty it shall be to maintain and administer the National Cultural Center and site thereof and to execute such other functions as are vested in the Board by this Act * * *.

* * * The Board shall be composed as follows:. . . the Secretary of the Smithsonian Institution

Sec. 3. The Board shall construct for the Smithsonian Institution, with funds raised by voluntary contributions, a building to be designated as the National Cultural Center on a site in the District of Columbia * * *.

Sec. 6(c) The Board shall submit to the Smithsonian Institution an annual report of its operations under this Act, including a detailed statement of all public and private moneys received and disbursed by it.

Sec. 7(a) This Act shall cease to be effective, and all offices created by this Act and all appointments made under this Act shall terminate, if the Board of Regents of the Smithsonian Institution does not find that sufficient funds to construct the National Cultural Center have been received by the Trustees of the National Cultural Center within five years after the date of enactment this Act.

(b) If the offices of Trustees of the National Cultural Center terminate under the provisions of subsection (a), all funds and property . . . . shall vest in the Board of Regents of the Smithsonian Institution to carry out the purposes of the Act entitled "An Act to provide for the transfer of the Civil Service Commission Building in the District of Columbia to the Smithsonian Institution to house certain art collections of the Smithsonian Institution", approved March 28, 1958, and for the acquisition of works of art to be housed in the building referred to in such Act.

* * * * * * *

In the Regents meeting of May 15, 1963, the Secretary stated that if the Board of Regents does not find that sufficient funds to construct the National Cultural Center have been received by the Trustees of the National Cultural Center by September 2, 1963, the National Cultural Center will terminate on that date unless legislation is enacted before that date to amend Section 7(a) of the present law.

The Regents at that meeting considered the difficulty of money raising and voted ". . . that in view of the very substantial progress that has been made it would support a legislative proposal of the Trustees to extend the existing five-year period."

Shortly thereafter, upon the death of President Kennedy, Senate Joint Resolution 136, introduced by Senators Fulbright, Saltonstall and Anderson, all Regents of the Institution, was enacted renaming the National Cultural Center the John F. Kennedy Center for the Performing Arts. Other changes included in the Resolution provided that "The Board of Trustees of the Center is directed to provide for a suitable memorial within the Center for the late President, which cannot be created until approved by the Board of Regents" and that the Act was extended for an additional three years, to September 2, 1966.

It is of interest to note that the Regents at their meeting on January 17, 1966, found that funds received by the Trustees "are sufficient to proceed with construction" and the Regents subsequently approved the sculpture of John F. Kennedy as the memorial to him in the Center.

The only remaining relationship with the John F. Kennedy Center for the Performing Arts is that the Secretary of the Smithsonian Institution is a member ex officio of the Board of Trustees and the Board of Trustees shall submit an annual report on its operations to the Smithsonian Institution, which it does.

The Board of Trustees is responsible for the maintenance and administration of the Center and although the Board of Trustees has constructed the building for the Smithsonian Institution and the Board accepts gifts, bequests, etc., for the Smithsonian Institution, the Smithsonian has no continuing responsibility for it.

John F. Kennedy Center Act

Public Law 85-874, 85th Congress, 72 Stat. 1698, September 2, 1958

Amended September 21, 1959, Public Law 86-297, 73 Stat. 573

Amended August 19, 1963, Public Law 88-100, 77 Stat. 128

Amended January 23, 1964, Public Law 88-260, 78 Stat. 4

AN ACT

To provide for a John F. Kennedy Center for the Performing Arts which will be constructed, with funds raised by voluntary contributions, on a site made available in the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Section 1. This Act may be cited as the "John F. Kennedy Center Act".

BOARD OF TRUSTEES

Sec. 2. (a) There is hereby established in the Smithsonian Institution a bureau, which shall be directed by a board to be known as the Trustees of the John F. Kennedy Center for the Performing Arts (hereafter in this Act referred to as the "Board"), whose duty it shall be to maintain and administer the John F. Kennedy Center for the Performing Arts and site thereof and to execute such other functions as are vested in the Board by this Act. The Board shall be composed as follows: The Secretary of Health, Education, and Welfare, the Librarian of Congress, the Assistant Secretary of State for Public Affairs, the Chairman of the Commission of Fine

Arts, the President of the Board of Commissioners of the District of Columbia, the Chairman of the District of Columbia Recreation Board, the Director of the National Park Service, the Commissioner of the United States Office of Education, the Secretary of the Smithsonian Institution, three Members of the Senate appointed by the President of the Senate, and three Members of the House of Representatives appointed by the Speaker of the House of Representatives ex officio; and thirty general trustees who shall be citizens of the United States, to be chosen as hereinafter provided.

(b) The general trustees shall be appointed by the President of the United States and each such trustee shall hold office as a member of the Board for a term of ten years, except that (1) any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term, (2) the terms of any members appointed prior to the date of enactment of the National Cultural Center Amendments Act of 1963 shall expire as designated by the President at the time of appointment, and (3) the terms of the first fifteen members appointed to the Board pursuant to the amendments made by the National Cultural Center Amendments Act of 1963 shall expire, as designated by the President at the time of appointment, three on September 1, 1964, three on September 1, 1966, three on September 1, 1968, three on September 1, 1970, and three on September 1, 1972.

(c) There shall be an Advisory Committee on the Arts composed of such members as the President may designate, to serve at the pleasure of the President. Persons appointed to the Advisory Committee on the Arts, including officers or employees of the United States, shall be persons who are recognized for their knowledge of, or experience or interest in, one or more of the arts in the fields covered by the John F. Kennedy Center for the Performing Arts. The President shall designate the Chairman of the Advisory Committee on the Arts. In making such appointments the President shall give consideration to such recommendations as may from time to time be submitted to him by leading national organizations in the appropriate art fields. The Advisory Committee on the Arts shall advise and consult with the Board and make recommendations to the Board regarding existing and prospective cultural activities to be carried on in the John F. Kennedy Center for the Performing Arts. The Advisory Committee on the Arts shall assist the Board in carrying out section 5(a) of this Act. Members of the Advisory Committee on the Arts shall serve without compensation, but each member of such Committee shall be reimbursed for travel, subsistence, and other necessary expenses incurred by him in connection with the work of such Committee.

JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS

SEC. 3. The Board shall construct for the Smithsonian Institution, with funds raised by voluntary contributions, a building to be designated as the John F. Kennedy Center for the Performing Arts on a site in the District of Columbia bounded by the Inner Loop Freeway on the east, the Theodore Roosevelt Bridge approaches on the south, Rock Creek Parkway on the west, New Hampshire Avenue and F Street on the north, which shall be selected for such purpose by the National Capital Planning Commission. The National Capital Planning Commission shall acquire by purchase, condemnation, or otherwise, lands necessary to provide for the John F. Kennedy Center for the Performing Arts and related facilities. Such building shall be in accordance with plans and specifications approved by the Commission of Fine Arts.

DUTIES OF THE BOARD

SEC. 4. The Board shall—

(1) present classical and contemporary music, opera, drama, dance, and poetry from this and other countries,

(2) present lectures and other programs,

(3) develop programs for children and youth and the elderly (and for other age groups as well) in such arts designed specifically for their participation, education, and recreation,

(4) provide facilities for other civic activities at the John F. Kennery Center for the Performing Arts,

(5) provide within the John F. Kennedy Center for the Performing Arts a suitable memorial in honor of the late President.

POWERS OF THE BOARD

SEC. 5. (a) The Board is authorized to solicit and accept for the Smithsonian Institution and to hold and administer gifts, bequests, or devises of money, securities

or other property of whatsoever character for the benefit of the John F. Kennedy Center for the Performing Arts. Unless otherwise restricted by the terms of the gift, bequest, or devise, the Board is authorized to sell or exchange and to invest or reinvest in such investments as it may determine from time to time the moneys, securities, or other property composing trust funds given, bequested, or devised to or for the benefit of the John F. Kennedy Center of the Performing Arts. The income as and when collected shall be placed in such depositaries as the Board shall determine and shall be subject to expenditure by the Board.

(b) The Board shall appoint and fix the compensation and duties of a director, an assistant director, and a secretary of the John F. Kennedy Center for the Performing Arts and of such other officers and employees of the John F. Kennedy Center for the Performing Arts as may be necessary for the efficient administration of the functions of the Board. The director, assistant director, and secretary shall be well qualified by experience and training to perform the duties of their office.

(c) The actions of the Board, including any payment made or directed to be made by it from any trust funds, shall not be subject to review by any officer or agency other than a court of law.

ADMINISTRATION

SEC. 6. (a) The Board is authorized to adopt an official seal which shall be judicially noticed and to make such bylaws, rules, and regulations, as it deems necessary for the administration of its functions under this Act, including, among other matters, bylaws, rules, and regulations relating to the administration of its trust funds and the organization and procedure of the Board. The Board may function notwithstanding vacancies and twelve members of the Board shall constitute a quoroum for the transaction of business.

(b) The Board shall have all the usual powers and obligations of a trustee in respect of all trust funds administered by it.

(c) The Board shall submit to the Smithsonian Institution and to Congress an annual report of its operations under this Act, including a detailed statement of all public and private moneys received and disbursed by it.

(d) The Board shall transmit to Congress a detailed report of any memorial which it proposes to provide within the John F. Kennedy Center for the Performing Arts under authority of paragraph (5) of section 4 of this Act, and no such memorial shall be provided until the Board of Regents of the Smithsonian Institution shall have approved such memorial.

TERMINATION

SEC. 7. (a) This Act shall cease to be effective, and all offices created by this Act and all appointments made under this Act shall terminate, if the Board of Regents of the Smithsonian Institution does not find that sufficient funds to construct the John F. Kennedy Center for the Performing Arts have been received by the Trustees of the John F. Kennedy Center for the Performing Arts within eight years after the date of enactment of this Act.

(b) If the offices of Trustees of the John F. Kennedy Center for the Performing Arts terminate under the provisions of subsection (a), all funds and property (real and personal) accepted by the Trustees of the John F. Kennedy Center for the Performing Arts under section 5(a), and income therefrom, shall vest in the Board of Regents of the Smithsonian Institution and shall be used by the Board of Regents of the Smithsonian Institution to carry out the purposes of the Act entitled "An Act to provide for the transfer of the Civil Service Commission Building in the District of Columbia to the Smithsonian Institution to house certain art collections of the Smithsonian Institution," approved March 28, 1958, and for the acquisiton of works of art to be housed in the building referred to in such Act; except that such funds or property, and the income therefrom, shall vest in an organization designated by the donor of such funds or property at the time of the making of the donation thereof, if, at such time, such organization described in section 501(c)(3) of the Internal Revenue Code of 1954 and is exempt under section 501(a) of such Code, and if, at such time, a contribution, bequest, legacy, devise, or transfer to such organization is deductible under section 170, 2055, or 2106 of such Code.

APPROPRIATIONS

SEC. 8. There is hereby authorized to be appropriated to the Board for use in accordance with this Act, amounts which in the aggregate will equal gifts, bequests,

and devises of money securities, and other property, held by the Board under this Act, except that not to exceed $15,500,000 shall be appropriated pursuant to this section.

BORROWING AUTHORITY

SEC. 9. To finance necessary parking facilities for the Center, the Board may issue revenue bonds to the Secretary of the Treasury payable from revenues accruing to the Board. The total face value of all bonds so issued shall not be greater than $15,400,000. The interest payments on such bonds may be deferred with the approval of the Secretary of the Treasury but any interest payments so deferred shall themselves bear interest after June 30, 1972. Deferred interest may not be charged against the debt limitation of $15,400,000. Such obligations shall have maturities agreed upon by the Board and the Secretary of the Treasury but not in excess of fifty years. Such obligations may be redeemable at the option of the Board before maturity in such manner as may be stipulatd in such obligations, but the obligations thus redeemed shall not be refinanced by the Board. Each such obligation shall bear interest at a rate determined by the Secretary of the Treasury taking into consideration the current average rate on current marketable obligations of the United States of comparable maturities as of the last day of the month preceding the issuance of the obligations of the Board. The Secretary of the Treasury is authorized and directed to purchase any obligations of the Board to be issued under this section and for such purpose the Secretary of the Treasury is authorized to use as a public debt transaction the proceeds from the sale of any securities issued under the Second Liberty Bond Act, as amended, and the purposes for which securities may be issued under the Second Liberty Bond Act, as amended, are extended to include any purchases of the Board's obligations under this section.

GIFTS TO UNITED STATES

SEC. 10. The Secretary of the Treasury is authorized to accept on behalf of the United States any gift to the United States which he finds has been contributed in honor of or in memory of the late President John F. Kennedy and to pay the money to such appropriation or other accounts, including the appropriation accounts established pursuant to appropriations authorized by this Act, as in his judgment will best effectuate the intent of the donor.

NATIONAL MEMORIAL

SEC. 11. The John F. Kennedy Center for the Performing Arts, designated by this Act, shall be the sole national memorial to the late John Fitzgerald Kennedy within the city of Washington and its environs.

NOTE.—Public Law 88.260 entitled "Joint Resolution providing for renaming the National Cultural Center as the John F. Kennedy Center for the Performing Arts, authorizing an appropriation therefor and for other purposes," approved January 23, 1964, contained the following preamble and section:

"Whereas the late John Fitzgerald Kennedy served with distinction as President of the United States, and as a Member of the Senate and House of Representatives; and

"Whereas the late John Fitzgerald Kennedy dedicated his life to the advancement of the welfare of mankind; and

"Whereas the late John Fitzgerald Kennedy was particularly devoted to the advancement of the performing arts within the United States; and

"Whereas by his untimely death this Nation and the world has suffered a great loss; and

"Whereas it is the sense of the Congress that it is only fitting and proper that a suitable monument be dedicated to the memory of this great leader; and

"Whereas the living memorial to be named in his honor by this joint resolution shall be the sole national monument to his memory within the city of Washington and its environs:

"SEC. 2. In addition to the amendments made by the first section of this Act, any designation or reference to the National Cultural Center in any other law, map, regulation, document, record, or other paper of the United States shall be held to designate or refer to such Center as the John F. Kennedy Center for the Performing Arts."

Compilation by Ralph E. Becker, General Counsel, John F. Kennedy Center for the Performing Arts.

VALUE OF SPECIAL EXHIBITS GALLERY

Mr. RIPLEY. Is this for fiscal year 1982, Mr. Chairman?

Mr. YATES. No, I think this is a forever document, isn't it? No, nothing is forever.

Did you want to make additional comments on that, David?

Mr. CHALLINOR. Only to show an example, Mr. Chairman, of the value of this particular gallery that will allow us now finally to have a place to exhibit some of the treasures in the Museum of Natural History that have been there for 100 years or more.

Mr. YATES. So what you are trying to do is to make the Museum of Natural History as glamorous as the Museum of History and Technology?

Mr. CHALLINOR. Healthy competition.

Mr. YATES. The National Museum of American History, I stand corrected.

Mr. RIPLEY. We like the words History and Technology.

EXHIBITS PROGRAM IMPROVEMENT AT THE NATIONAL MUSEUM OF NATURAL HISTORY

Mr. YATES. Page A-22 of the justification shows that you want a million dollars to refurbish that one hall, is that correct? Exhibits Program Improvement, $190,000. Amount of funds available, approximately $1 million annually. This has remained static for at least the past six years. Why has it remained static, pray tell us?

Mr. CHALLINOR. Mr. Chairman, that $1 million has been in our base since 1974 or 1975. When we got that for exhibits at the museum we had scheduled and opened a new hall about once a year. As a result of inflation now we have fallen way behind our original schedule and if you are interested I have attachment 2 here which I can show you how far we have fallen behind.

Mr. YATES. Why did you fall behind? If the money was made available, why did you fall behind?

Mr. CHALLINOR. Because of inflation. This $1 million base is primarily used for salaries for the kinds of people who actually build these exhibits and also for the purchase of equipment that we need such as plexiglas and lumber, all of which has increased at a rate which we showed you or which we referred to in the record in our general statement.

Mr. YATES. That is on page 22, David.

Mr. CHALLINOR. I know. I am just pointing out that the increase in the price of these objects which are on page A-9 and following, we are talking about the period of increase of this equipment as well as salaries. We are looking now for $190,000 to get us back to the schedule we had originally set in 1975 when we first got this appropriation. The halls are badly in need of renovation, some of them are 20 years old and have not been changed and our schedule has now been so eroded by inflation that we are looking for an additional $190,000.

Mr. YATES. What will that enable you to do, get to work again?

Mr. CHALLINOR. That will get us back to scheduling one new hall a year.

LITIGATION RELATING TO EVOLUTION

Mr. YATES. What is the status of the Crowley suit? Do you want to tell us about that?

Judge Powers, what did the court say; do you have a copy of their decision?

Mr. POWERS. Yes, I can provide that.

Mr. YATES. Was it long or short?

Mr. POWERS. About eight pages.

Mr. YATES. All right. I would like to see it. Would you furnish the committee with a copy?

Mr. POWERS. Certainly. The time for the Supreme Court has expired so I believe the case is over.

[The information follows:]

Notice: This opinion is subject to formal revision before publication in the Federal Reporter or U.S.App.D.C. Reports. Users are requested to notify the Clerk of any formal errors in order that corrections may be made before the bound volumes go to press.

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 79-1193

DALE CROWLEY, JR., Individually & in his capacity as Executive Director of the National Foundation for Fairness in Education, *et al.*, APPELLANTS

v.

SMITHSONIAN INSTITUTION, *et al.*

Appeal from the United States District Court for the District of Columbia

(D.C. Civil Action No. 78-0641)

Argued January 8, 1980

Decided October 30, 1980

David C. Gibbs, Jr., a member of the bar of the Supreme Court of Ohio, *pro hac vice*, by special leave of court, with whom *George R. Douglas, Jr.*, was on the brief, for appellants.

Bills of costs must be filed within 14 days after entry of judgment. The court looks with disfavor upon motions to file bills of costs out of time.

Mark J. Biros, Assistant United States Attorney, with whom *Carl S. Rauh*, United States Attorney at the time the brief was filed, *John A. Terry* and *William H. Briggs, Jr.*, Assistant United States Attorneys, were on the brief, for appellees. *Regina C. McGranery*, Assistant United States Attorney, also entered an appearance for appellees.

Before TAMM and MACKINNON, *Circuit Judges*, and LOUIS F. OBERDORFER,* *U.S. District Judge* for the District of Columbia.

Opinion for the court filed by *District Judge* OBERDORFER.

OBERDORFER, *District Judge*: Appellants are an individual and two organizations, the National Foundation for Fairness in Education and National Bible Knowledge, Inc. They refer to their conception of the origin of life as "scientific creationism." They assert that by marshalling and interpreting data in a scientific way, they can support the proposition that human and other forms of life were brought into existence in completed form, all at one time, by a Creator.[1] They conscientiously disagree with the theory of evolution which postulates that all plant, animal, and human life "have arisen from a single source which itself came from an inorganic form."[2]

Appellees are the Smithsonian Institution and two Smithsonian employees. Using federal funds, appellees planned (for 1979) and conducted (in 1978) two exhibitions containing references to evolution at the Smithsonian's Museum of Natural History (Museum). The exhibit presented at the Museum in 1978 was entitled "The

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*Sitting by designation pursuant to 28 U.S.C. § 292(a) (1976).

[1] *See, e.g.*, H. Morris, The Scientific Case for Creation (1977), and other works collected in Note, *Freedom of Religion and Science Instruction in Public Schools*, 87 Yale L.J. 515, 554 n.197 (1978).

[2] G. Kerkut, Implications of Evolution 157 (1960), cited in Note, *supra* note 1, at 515 n.2.

Emergence of Man." The one planned for (and presumably completed in) 1979, contemplated using specimens from the Museum's collection to dramatize the diversity of life on Earth, the adaptation of plant and animal life to their environments, and the way in which organisms change over time in response to environmental and other influences.

Appellants sued in the United States District Court for the District of Columbia for a declaratory judgment that the Smithsonian's charter (20 U.S.C. § 41 *et seq.*) did not authorize the use of federal funds for such exhibits and that, if the charter did authorize such use of federal funds, the charter and the expenditures violated the first amendment's prohibition against the establishment of religion and inhibited appellants' free exercise of their religion. Appellants urged that by explaining and advocating the theory of evolution, appellees unconstitutionally supported the religion of Secular Humanism.[3] Appellants sought an injunction prohibiting the exhibits and federal funding of them or, in the alternative, an order requiring appellees to commit equal funds to explain creation along the lines of the Biblical account in Genesis.

Appellees moved in the District Court for dismissal or, in the alternative, for summary judgment on the grounds that (1) appellants lacked standing to challenge the statutory authority of the appellees,[4] (2) appellants constitutional argument was foreclosed by Supreme Court deci-

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[3]The record establishes without contradiction that Secular Humanism advocates, in addition to the theory of evolution, such causes as the right to divorce, birth control, universal education, and a world community. There is no suggestion in the record, however, of any institutional or contractual relationship between appellees and any institution or group espousing Secular Humanism.

[4]We shall, as did the District Court, "assume standing and proceed because the merits [of the statutory challenge] go clearly against the plaintiffs." Crowley v. Smithsonian Institution, 462 F. Supp. 725, 726 (D.D.C. 1978).

sions authorizing public schools to teach evolution, (3) the evolution exhibits were essentially secular, did not primarily affect or advance religion nor excessively entangle government in it, and (4) the relief sought by appellants would itself violate the establishment clause.

Appellants opposed summary judgment as inappropriate. They disputed whether the exhibits were religious or secular, and whether evolution itself is a scientific theory in light of the fact that it cannot be proven in a laboratory. The District Court refused to accept appellants' description of evolution "as, and only as, part of the religion of secular humanism." *Crowley v. Smithsonian Institution*, 462 F. Supp. 725, 726 (D.D.C. 1978). The District Court also noted that appellees do not themselves treat evolution as a religious matter nor have they explicitly expressed any hostility to religious theories of creation. It concluded from these facts that it could not accept the characterization of these issues as materially factual. Applying, then, the well-established test as it is stated in *Tilton v. Richardson*, 403 U.S. 672, 678 (1971), the District Court concluded that (1) appellees' "presentation of evolutionary theory has the solid secular purpose of 'increasing and diffusing knowledge among men' " and that appellees do not "oppose or show hostility to religion" and do not "create a religion of secularism;" 426 F. Supp. at 727, (2) the exhibits neither advance a religious theory nor inhibit appellants in theirs; (3) neither the Smithsonian enabling legislation nor the exhibits involve excessive entanglement with religion; and (4) the appellants' free exercise of their religion is not actionably impaired merely because, should they visit the Smithsonian, they may be confronted with exhibits which are distasteful to their religion.

Appellants' appeal focuses specifically on whether there were genuine issues of material fact which precluded decision by summary judgment and whether the District Court viewed the inferences to be drawn from appellants' plead-

ings and affidavits in a light most favorable to appellants. Appellants claim both that the trial court should not have resolved by summary judgment the question of whether the exhibits were secular in nature as displaying scientific knowledge and that the trial court failed to draw the inferences necessary under the law as to "the religious nature of evolution and the preferred position given this religious belief system by appellees in violation of the First Amendment . . . ." Appellants' brief at p. 27. Appellees' response basically tracked and supported the trial court's memorandum. Satisfied that there were no material facts in dispute and that the trial court correctly decided the legal issues, we affirm.

I.

The Smithsonian Institution was created by the Act of August 10, 1846, "to increase and diffuse knowledge among men." 20 U.S.C. § 41. The National Museum of Natural History is a bureau of the Smithsonian. The Museum is authorized to receive "all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens belonging to the United States . . . ." 20 U.S.C. § 50. This authority is governed by and in aid of the overriding charter of the Institution. 20 U.S.C. § 41. According to the uncontradicted affidavit of the Museum director, himself an appellee in this case, the Museum "is considered one of the world's major centers for the study of plants, animals, fossil organisms, terrestrial and extraterrestrial rocks and minerals, and man himself."[5]

[5] Affidavit of Porter M. Kier, Director of the National Museum of Natural History, June 26, 1978, Appendix (App.) at p. 44. According to Dr. Kier, the Museum alone has a staff of over 110 professional scientists who "conduct original research and care for the national collections of some 60 million scientific study specimens. The museum has seven scientific departments—anthropology, botany, entemology, invertebrate zoology, paleobiology, mineral sciences and vertebrate zoology."

There has been no dispute about the physical elements of the exhibits in question. The exhibit planned for 1979 was to emphasize specimens from the Museum's collection depicting adaptations of plants and animals to their environment by such devices as camouflage, the overproduction of offspring and other defense mechanisms. It was to include an introductory display of a variety of specimens such as trays of bird eggs, mammal skulls, and jars of amphibians. App. at p. 62. There were also to be displays on genetics, natural selection, and one showing differentiation of populations. App. at pp. 62–78.

The 1978 exhibit, the "Emergence of Man," is described in an accompanying pamphlet as "the story of how, when and where modern human beings evolved from homonid ancestors who lived millions of years ago." App. at 52. This exhibit, consisting of data from the natural world, illustrated the physical similarities and differences between man and what were reported to be geneological ancestors.

The concept of evolution was referred to in these exhibits. They did not, however, express implicitly or explicitly "that the evolutionary theory of the origin of man and of all plants and animal life is 'the only credible theory of the origin of life.'" Affidavit of Porter M. Kier, Director of the National Museum of Natural History, App. at p. 46. The exhibits did not mention religion in general or Secular Humanism in particular. Neither by their terms nor by implication did the exhibits disparage religion or any religious tenet.

Appellants' opposition to the summary judgment motion was essentially a challenge to the concept of evolution. It questioned whether that concept is any more susceptible to scientific proof than appellants' concept of the supernatural origins of life, and characterized this issue as one of material fact. In support of their contentions, they offered the affidavit, among others, of Dr. Richard B. Bliss, Director of Curriculum Development for the Institute of Creation Research of San Diego, California. Dr. Bliss' af-

fidavit characterized evolution as "a nonobservable and alleged phenomenon which can neither be proven nor verified by the scientific method. . . . [E]volution of life from primal matter is impossible to observe . . . ." App. at 37. Since the evolution theory cannot be tested by the scientific method, according to Dr. Bliss' opinion, it is not a true science, but is a "faith position." In addition, Dr. Bliss' affidavit stated, from personal observation of the exhibits in question, but without specification, that they contained "false and misleading statements concerning evolution" and that the exhibits are indoctrinating the public in the faith of evolution. App. at page 39. Finally, Dr. Bliss asserted that, in his opinion, evolution itself is a religion and that many evolutionists so acknowledge and "promote" it as such. App. at p. 39.

II.

Assuming, *arguendo*, that, as asserted in Dr. Bliss' affidavit, the evolution theory cannot be proved "scientifically" in the laboratory and in that sense rests ultimately on "faith," such fact is not material because it would not establish as a matter of law that the exhibits in question establish any religion such as Secular Humanism.

The fact that religions involve acceptance of some tenets on faith without scientific proof obviously does not mean that all beliefs and all theories which rest in whole or in part on faith are therefore elements of a religion as that term is used in the first amendment. For example, appellees suggest that the theory of relativity defies absolute laboratory proof. Obviously the constitution would not interdict government development and diffusion of knowledge about relativity even if it were based on some hypotheses which are not susceptible to physically demonstrable proof.

Nor does it follow that government involvement in a subject which is also important to practitioners of a religion becomes, therefore, activity in support of religion.

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For example, birth control and abortion are topics that involve both religious beliefs and general health and welfare concerns. Many religious leaders have vigorously opposed government support of the teaching and practice of birth control and government support, or even toleration, of abortion. Controversy, including litigation, about these subjects has been prolific and spirited. *See, e.g., Williams v. Zbaraz*, 100 S.Ct. 2694 (1980); *Civil Awareness of America Ltd. v. Richardson*, 343 F. Supp. 1358 (E.D. Wis. 1972); *Committee to Defend Reproductive Rights v. Myers*, 93 Cal. App. 3d 492 (1979) (hearing granted). No court, however, has finally held that government advocacy of or opposition to either birth control or abortion violates the establishment clause of the first amendment. Indeed, the Supreme Court recently and summarily rejected an argument that the limiting of medicaid funds for abortions violated the establishment clause "because it incorporates into law the doctrines of the Roman Catholic Church . . . ." *Harris v. McRae*, 100 S.Ct. 2671, 2689 (June 30, 1980). The Court reasoned that:

> Although neither a State nor the Federal Government can constitutionally "pass laws which aid one religion, aid all religions, or prefer one religion over another," *Everson v. Board of Education*, 330 U.S. 1, 15 . . ., it does not follow that a statute violates the Establishment Clause because it "happens to coincide or harmonize with the tenets of some or all religions." *McGowan v. Maryland*, 366 U.S. 420, 442 . . . .

Id. So here, we cannot conclude that the exhibits in question are impermissible because their message may coincide or harmonize with a tenet of Secular Humanism or may be repugnant to creationism.

Our resolution of appellants' establishment claim as a matter of law disposes of their procedural contention that the District Court erroneously resolved a material issue of fact short of trial. The dispute about whether the evolution theory was based on scientific proof or on faith is im-

material to the question of whether the Smithsonian exhibits supported establishment of Secular Humanism as a religion. The fact that appellants were able to identify one religious group that espoused evolution as one of its tenets is immaterial. Accordingly, we are satisfied that the District Court did not leave unresolved any material issues of fact.[6]

III.

Although the foregoing discussion furnishes an adequate basis for decision, we briefly address the trial court's disposition of appellants' substantive contentions that (1) the appellees' use of federal funds for the exhibits exceeded their authority under the Act of 1846 and (2) if the expenditures were authorized, the Act and the activity of conducting the exhibits violated the first amendment.

1.

Appellants appear not to press their statutory claim in this appeal. We have nevertheless satisfied ourselves from the plain language of the Act, the record, and from judicial notice of the Smithsonian's varied public activities that the exhibits at issue here were well within the appellees' charter from Congress "to increase and diffuse knowledge among men." The exhibits used the Museum's specimens. They were related to and based upon those specimens. The exhibits were marshalled in an orderly way. They related to various aspects of the theory of evolution. That theory has widely disseminated, responsible, secular endorsement.[7] Accordingly, we affirm the District Court's conclu-

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[6] See Rule 56(e), Fed. R. Civ. P., that an adverse party to a motion for summary judgment "may not rest upon the mere allegations or denials of his pleading, but his response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue for trial."

[7] For a widely circulated, secular statement about evolution

sion that the financing and the display of the exhibits were well within appellants' statutory authority.

2.

Courts should be particularly sensitive to claims by groups that government is involved in their religion either by interfering with it, or by supporting a competing theology. The Supreme Court has mandated "government neutrality between religion and religion, and between religion and non-religion." *Epperson v. Arkansas*, 393 U.S. 97, 104 (1968). Government, including its judicial branch, is cautioned not "to require that teaching and learning must be tailored to the principles or prohibitions of any religious sect or dogma." *Id.* at 106; *see also Everson v. Board of Education*, 330 U.S. 1, 15–16 (1947). The constitution, either by operation of the first amendment or the fourteenth, protects a citizen's right to receive information and to "acquire useful knowledge." *See, e.g., Red Lion Broadcasting Co. v. F.C.C.*, 395 U.S. 367, 389–90 (1969); *Stanley v. Georgia*, 394 U.S. 557, 564 (1969); *Lamont v. Postmaster General*, 381 U.S. 301, 306–07 (1965); *Meyer v. Nebraska*, 262 U.S. 390, 399 (1923); *Bartels v. Iowa*, 262 U.S. 404 (1923).

Application of the Supreme Court's caution to this case necessarily requires a balance between appellants' free-

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and a selected bibliography on the subject, see *Evolution*, in 7 Encyclopedia Britannica 7–23 (1974).

Appellants do not allege or suggest that the theory of evolution was originated by a religious institution or a religious leader. They do not deny that it is the subject matter of active secular research and scholarship. Accordingly, approval of financial support of the exhibits here at issue would not foreclose a conclusion in some other case that government financial support of a theory of the origin of life advocated by religious groups, but with less substantial support from secular research and scholarship, would be impermissible establishment of religion.

dom to practice and propagate their religious beliefs in creation without suffering government competition or interferences and appellees' right to disseminate, and the public's right to receive, knowledge from government, through schools and other institutions such as the Smithsonian. This balance was long ago struck in favor of diffusion of knowledge based on responsible scientific foundations, and against special constitutional protection of religious believers from the competition generated by such knowledge diffusion.

Thus, the essential question posed by appellants has been resolved by authoritative decisions permitting public schools to teach the facts and theory of evolution to children who, unlike appellants, are compelled by law to come and look and listen. Such public involvement in evolution was not only permitted by the first amendment, but the Courts have further held that to bar or inhibit such teaching would, under some circumstances, itself violate the establishment clause. *See Epperson v. Arkansas*, 393 U.S. at 271; *Daniel v. Waters*, 515 F.2d 485 (6th Cir. 1975); *Wright v. Houston Independent School District*, 366 F. Supp. 1208 (S.D. Tex. 1972), *aff'd*, 486 F.2d 137 (5th Cir. 1973), *cert. denied sub. nom. Brown v. Houston Independent School District*, 417 U.S. 969 (1974); *Willoughby v. Stever*, Civil Action No. 1574-72 (D.D.C. August 25, 1972), *aff'd mem.*, 504 F.2d 271 (D.C. Cir. 1974), *cert. denied*, 420 U.S. 927 (1975).

In view of the foregoing, it is unnecessary to labor and therefore we only note that we approve the District Court's application of the criteria as stated in *Tilton v. Richardson*, *supra*. The solid secular purpose of the exhibits is apparent from their context and their elements. They did not materially advance the religious theory of Secular Humanism, or sufficiently impinge upon appellants' practice of theirs to justify interdiction. Except insofar as appellants have themselves entangled religion in

the exhibits, there is no religious involvement as that concept is used in *Tilton*.[8]

Accordingly, the decision below is *affirmed*.

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[8] Appellants have, at various stages of this litigation, contended that the exhibits at the Museum have interfered with the free exercise of their religion. This claim has not been pressed vigorously on appeal and we find it to be without merit. In any event, there is no allegation that such financial support has any "coercive effect" upon appellants' "practice of . . . religion." Harris v. McRae, *supra*, at 2690, quoting with approval, Abington School District v. Schempp, 374 U.S. 203, 223 (1963). Appellants allege no effect on their ability freely to exercise their religion or teach it to their children. *See* Wisconsin v. Yoder, 406 U.S. 205 (1972); Sherbert v. Verner, 374 U.S. 398 (1963). Finally, appellants are under no compulsion to go to the Museum. If they choose to do so, they are free to avoid the exhibits which they find offensive and may focus on the other exhibits of which there are many. *Compare e.g.*, West Virginia State Board of Education v. Barnette, 319 U.S. 624 (1943) *with* Hamilton v. Regents, 293 U.S. 245 (1934).

Mr. YATES. Mr. Crowley appeared before our committee to persuade us to cut off funds. He contended that the teaching of evolution at the Smithsonian is a violation of the First Amendment and Judge Powers indicates that is refuted by the Court of Appeals.

BASELINE INSECT STUDIES

Mr. YATES. On page A–23 you want some money for Baseline Studies on Target Insects of Economic Importance, $64,000. When is it going to be completed?

Mr. CHALLINOR. We would look at that, Mr. Chairman, as an item in our base. What is turning out to develop is the problem of identifying down to species various harmful insects, at least harmful to people. Very often we spend a great deal of energy developing techniques to hit a specific insect thought to be causing a specific kind of economic damage, eating a crop, eating clothes or whatever. Further research has shown that these insects——

Mr. YATES. These are moths, aren't they?

Mr. CHALLINOR. They are moths but they are a very great deal more complicated than we thought. What we thought was a clothes moth now turns out to be several different kinds of moths that eat clothes. In this case we are trying to determine what these differences are at various stages in their life cycle. If you actually assume a loss in clothing, we hope to be able to target our attack on a specific clothes moth with various chemicals and thereby aim more precisely instead of the scatter-gun approach that we use now to try to kill all moths indescriminately.

We support this effort because of the special expertise in the Museum of Natural History which has curators who can tell one kind of clothes moth from another. These experts are rare and we want to exploit this particular talent in the museum for a project that we think will be of great benefit to the country and to the whole world.

JUSTICE DEPARTMENT AND SMITHSONIAN LITIGATION

Mr. YATES. May I go back to Judge Powers for a moment.

Did the Smithsonian employ outside counsel for that case?

Mr. POWERS. No, the Justice Department handled it.

Mr. YATES. The Justice Department represented you?

Mr. POWERS. Yes.

Mr. YATES. How does that happen?

Mr. POWERS. That is normal.

Mr. YATES. Do you ask the Justice Department to represent you in cases filed by individuals against the Smithsonian?

Mr. POWERS. Normally, yes.

Mr. YATES. What about the Johnson case?

Mr. POWERS. They handled that one, too.

Mr. YATES. On the will?

Mr. POWERS. Yes.

Mr. YATES. That is kind of a surprise. Do you reimburse them?

Mr. POWERS. They are having their own budget problems. I think they would like us to. They have very broad jurisdiction to handle cases in which the United States has an interest. I think our

presence here today indicates that the United States has an interest in the Institution.

Mr. YATES. Well, in most any kind of a case the United States would have an interest. It is like your mandate to increase and diffuse knowledge.

Mr. POWERS. We have wonderful help from the Department of Justice. I really think we could not survive without them.

Mr. YATES. Do you have any cases pending against the Smithsonian?

Mr. POWERS. About twelve.

Mr. YATES. What is the nature of the cases?

Mr. POWERS. There is one case in the Court of Claims, and there is the Johnson case which is not finished yet. I have a list of the cases here. We have a constitutional case involving the First Amendment as well.

Mr. YATES. That is the Crowley case, isn't it?

Mr. POWERS. No, that is one of the others.

Mr. YATES. What is the other one about?

Mr. POWERS. This is an employee that was fired and he said his rights were violated, the Foster case.

Mr. YATES. What rights were violated?

Mr. POWERS. He wrote a letter criticizing the man in charge of this program.

Mr. YATES. Is that the Chedister case?

Mr. POWERS. No.

Mr. YATES. Page 77 of the report of the January 26 meeting of the Board of Regents shows what the printed cases are; namely, the Chedister—well, I will just put them in the record at this point.

[The information follows:]

LITIGATION REPORT

New Cases: None
Cases Previously Reported

1. Chedister v. *United States:*

Plaintiff instituted this suit for back pay and related relief in the U.S. Court of Claims in August 1976, alleging that the Institution's termination in 1975 of his employment at the National Air and Space Museum was unlawful. Trial in this case was conducted in October 1978. On June 13, 1980, the trial judge recommended a decision entirely favorably to the United States/Smithsonian Institution. Exceptions to the recommendation of the trial judge have been taken by the plaintiff.

2. Crowley v. *Smithsonian Institution:*

This action, filed in April 1978 in the U.S. District Court for the District of Columbia, alleges that references to "evolution" in the exhibits of the National Museum of Natural History violate the "establishment of religion" clause of the First Amendment of the Constitution. Plaintiffs, two of whom are Baptist ministers, seek to enjoin the Smithsonian from in any manner depicting the theories of evolution or expending (federal) appropriated funds therefor, or, in the alternative, to compel the Smithsonian to expend an amount equal to that spent on evolution theory on the presentation of the "creation/design" theory based on the Book of Genesis. The motion to dismiss filed on behalf of the Smithsonian was granted in December 1978. On October 30, 1980, the U.S. Court of Appeals for the District of Columbia Circuit affirmed the December 1978 decision of the District Court. To date the plaintiffs have not filed a petition for certiorari in the Supreme Court of the United States.

3. Foster v. *Ripley:*

This suit for wrongful dismissal was filed by a former Vice President of the Smithsonian Science Information Exchange, Inc. The plaintiff seeks damages against the corporation and its board members, as well as reinstatement. The U.S. District Court for the District of Columbia granted a summary judgment in favor of the defendant board members on August 23, 1977. A decision of the Court was

appealed by plaintiff. Oral argument on the appeal was heard on October 24, 1980. A decision of the U.S. Court of Appeals is pending.

4. There have been no recent developments in the following cases, which have been reported previously to the Board:

Bowler v. *Ripley* (racial discrimination)—Filed September 1977 in the U.S.D.C. for the District of Columbia. Pretrial discovery proceedings, as well as settlement negotiations, in process.

Dance v. *Ripley* (racial discrimination)—Filed August 1978 in the U.S.D.C. for the District of Massachusetts. Pretrial discovery proceedings in process.

Lucas v. *Ripley* (class action—sex and racial discrimination)—Filed July 1978 in the U.S.D.C. for the District of Columbia. Decisions on cross motions for summary judgment and petition for denial of class certification pending.

Petition of the United States on behalf and for the benefit of the Smithsonian Institution, Trustee (petition for construction of provisions of the J. Seward Johnson and Hunterdon Medical Center School of Health gifts)—Filed February 1977 in the U.S.D.C. for the District of Columbia. Decision issued January 31, 1980; order and judgment on the decision entered February 29, 1980. Further decision pending on proposed orders regarding the proper allocation of Endowment Fund No. 3 between the Johnson and Hunterdon gifts and upon the amount of reimbursement due Harbor Branch Foundation for its expenses since January 1, 1977, as well as other pertinent issues.

Scherer v. *Ripley* (sex discrimination)—Filed October 1977 in the U.S.D.C. for the District of Columbia. Trial held November 7-8, 1979. Decision of the court pending.

Thomas v. *United States* (patent infringement)—Filed January 1980 in the U.S. Court of Claims. Pretrial discovery proceedings in process.

United States v. *Tougas* (to recover proceeds of sales of federal excess property)—Filed October 1976 in the U.S.D.C. for the District of Arizona (Tucson Division). Pretrial discovery proceedings in process (after denial of motion for summary judgment of the United States).

Cases Disposed of

1. Harden v. *United States:*

This suit, filed in the U.S. District Court for the District of Columbia on January 15, 1980, grew out of a tort claim for property damage to an automobile resulting from an accident involving a Smithsonian driver. The Smithsonian Tort Claims Committee could find no negligence by the Smithsonian and the claim was denied. Trial was held on September 26, 1980. Judge John Lewis Smith concluded on October 3, 1980, that there was no evidence of negligence by the Smithsonian driver and decided the case in favor of the Institution.

2. Hart v. *National Collection of Fine Arts of the Smithsonian Institution:*

The National Museum of American Art (formerly National Collection of Fine Arts), a bureau of the Smithsonian, is named beneficiary in a handwritten document executed by Alma W. Thomas in February 1978, just prior to her death. This document was presented to the Probate Court of the District of Columbia by the Smithsonian as a possible codicil to a will executed by Ms. Thomas in July 1977. The executor named in the 1977 will subsequently filed with the Probate Court a Complaint to Deny Probate to the 1978 document. At issue was the validity of the 1978 codicil. On July 16, 1980, the Probate Court approved a Stipulation for Settlement whereby the National Museum of American Art received a representative selection of Ms. Thomas' works, as well as access to all records pertaining to the artists's career.

3. Oliu v. *A.R.A. Services, et al.:*

This suit, brought under the Federal Tort Claims Act as a result of injuries sustained by plaintiffs from a slip and a fall in the cafeteria of the Smithsonian's National Air and Space Museum, was filed in both a federal district court and a state court of Ohio in September 1980. On November 17, 1980, the federal district court issued an order consolidating the cases and dismissing the Smithsonian Institution and the National Air and Space Museum for lack of jurisdiction (i.e., the plaintiffs did not file an administrative claim before filing suit).

NEW CASES

Mr. YATES. Does that show all the cases that are pending?

Mr. POWERS. We have two new cases which are both wills cases.

Mr. YATES. Both wills cases for which you are asking interpretation?

Mr. POWERS. No, these involve objects. In one case it is two paintings that have been on loan for about 50 years. The lender died in 1931 and a dealer came into one of the museums last year and discovered this painting and decided to round up the heirs and see if they could sell it.

Mr. YATES. Which museum?

Mr. POWERS. The American Art Museum.

Mr. YATES. Who was the painter?

Mr. POWERS. It is Frederick Church and another painter whose name I don't recall.

Mr. YATES. Is this the iceberg painting? No.

Mr. POWERS. There is only one iceberg.

Mr. YATES. I know, and that is held privately.

Mr. POWERS. The other one has to do with a large collection in the possession of the Museum of African Art of photographs of Mr. Elisofon, the Elisofon collection. It is a very complicated matter under New York law as to whether the children have a right to contest the will. In both of these cases the Justice Department is helping.

Mr. YATES. That is all the pending litigation you have?

Mr. POWERS. Then the ones you have already, yes.

Mr. YATES. Did you want to say something else or had you completed?

Mr. POWERS. I have completed.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

Mr. YATES. David, how is your astrophysics laboratory doing?

Mr. CHALLINOR. It would be doing better if we had not had the four positions that we were asking for in 1982 cut. It is doing well.

INVENTORY OF NATIONAL COLLECTIONS

Mr. YATES. Incidentally, how do you show those Eskimo artifacts like those? They are in cases and drawers now. I assume that those are contained in covers of some kind.

Mr. FISKE. That is right, they are stored in the attic of the Museum of Natural History.

Mr. YATES. Who sees them up there?

Mr. FISKE. Nobody, and this is the point. The new gallery will give us an opportunity to display this material. The show will have its debut in the gallery and then will travel via the SITES program to several other cities.

Mr. YATES. You raise a very interesting point. How many objects of the Smithsonian are similarly contained in the attic? Yours is a very interesting one for Eskimo art but there must be hundreds, if not thousands, of similar objects that would interest the American people.

Mr. FISKE. That is very true and we are addressing this very real problem.

Mr. YATES. You are addressing it for your particular museum.

Mr. FISKE. Yes.

Mr. YATES. What about the other heads of museums? Do all the heads of the museums know what they have in their museums?

How many of them have looked through the cupboards and seen what is stored there?

Mr. FISKE. Thanks to the inventory program we are indeed finding out the extent of the Museum of Natural History's collections, and the other museum Directors are doing likewise.

Mr. YATES. When will the inventory program be completed Paul?

Mr. PERROT. In 1983.

Mr. YATES. How many objects have you already inventoried?

Mr. PERROT. The inventory is almost complete in several of our museums. The two biggest inventories that are in process are at the Natural History and American History Museums. American History will be finished by 1983. Natural History will be finished later, but the inventory record will have been prepared. This will be followed by a detailed study of records and the inventory of research collections which are a special problem, requiring a different approach from the inventory of fine arts collections.

Mr. YATES. Mr. Fiske, I think of all the Directors you have the toughest job of knowing what you have, haven't you?

Mr. FISKE. This is very true.

Mr. YATES. Do you know what you have?

Mr. FISKE. We are learning each day more and more, yes. We know what we have in general and the specifics are what are being established through the inventory program.

Mr. YATES. How far along through the inventory is your program?

Mr. FISKE. We will have completed the major phase by June of 1983.

Mr. YATES. June of 1983. That is pretty good for an inventory covering what, 75 million objects?

Mr. FISKE. At that level, much of it will consist of inventorying lots of material.

Mr. YATES. Do you mean particular parts of insects?

Mr. FISKE. No, rather groupings of insects or other artifacts.

Mr. HUGHES. Pieces of pots.

Mr. YATES. Never throw away potsherds.

Mr. HUGHES. Right.

Mr. YATES. Why don't you trade them?

Mr. RIPLEY. They are not very tradeable.

CONSTRUCTION OF THE MUSEUM SUPPORT CENTER

Mr. YATES. I meant to ask a question relating to the first paragraph of Mr. Ripley's statement and that is the reference to, "I am pleased to report that the General Services Administration has let a contract for the building of the Support Center and that construction is now underway."

I am very much concerned about that statement because I am concerned about the history of the General Services Administration in building buildings and the Kennedy Center, I think, is one of those that was built by them. Six years after it was completed it needed a new roof and wall repairs.

The General Services Administration was in the Visitor Center for a while and the General Services Administration has been in other places.

Did the General Services Administration build the Hirshhorn Museum?

Mr. RIPLEY. Yes.

Mr. YATES. They wound up with some problems with some of the walls. Now what happens? Are you required to use the General Services Administration?

Mr. RIPLEY. If we receive a Federal appropriation for a building which mandates the use of the General Services Administration, it is incumbent on us to seek the General Services Administration to undertake the letting of the construction contracts.

Mr. YATES. Do they let the construction contracts to an outside contractor?

Mr. RIPLEY. Yes.

Mr. YATES. Have they got one contractor that they let construction contracts to consistently?

Mr. RIPLEY. Yes.

Mr. YATES. Who?

Mr. JAMESON. Hyman.

Mr. YATES. Hyman gets almost all?

Mr. RIPLEY. Not in our case.

Mr. YATES. The Hyman Construction Company as far as I can make out has a pretty good reputation but the question is on riding herd on the contract.

Mr. RIPLEY. We have introduced in connection with our contract having a building supervisor from the Smithsonian. Often we have to find out how to get such a person as we had, for example, in Mr. Offenbacher at the Air and Space Museum, who is now a permanent employee at the National Gallery. He transferred over to supervise the construction of the East Wing. This is one of the few ways that we as an Institution through whom the money has been derived can exercise some sort of supervisory control. Mr. Perrot and Mr. Peyton in the case of this Museum Support Center, I believe, are satisfied that we are in good hands as far as getting that building done in time.

Mr. YATES. Mr. Perrot wants to say something.

Mr. PERROT. Mr. Chairman, every drawing has been reviewed by the consulting engineers and by our architects. The drawings are reviewed by members of my staff, to the extent that they have the competence to do so, to be sure that the building structure meets all of the specifications of the program and meets quality control. I cannot guarantee it, but I can promise that we are doing, at this time, the very maximum to achieve the proper results.

Mr. YATES. Did GSA build the Air and Space Museum?

Mr. RIPLEY. Yes, they were the prime contractor.

Mr. YATES. That was a creditable construction, was it not?

Mr. RIPLEY. We think so.

Mr. YATES. Are you winding up with any cracks or breaks in the roof or the walls?

Mr. RIPLEY. We cannot apparently build a building in Washington without it getting a leaky roof on it.

Mr. YATES. Apparently that is traditional now. I wonder why it can't be done if they can do it in other cities.

Mr. RIPLEY. One of the hopeless problems here is that the architects insist on building buildings with flat roofs.

Mr. YATES. The Union Station has areas of flat roof but it has that barrel roof.

Mr. RIPLEY. That is where the trouble comes, where it seeps down from the other level.

Mr. YATES. Is your museum support building going to have a flat roof?

Mr. RIPLEY. It will be slightly sloped, Mr. Chairman. We took particular care to be sure that all joints and areas of stress are especially reinforced.

Mr. YATES. Why did I have the impression that you had peaked roofs?

Mr. PERROT. This would be impossible to do on a building of that size, but the roofs will be sloped.

CONDITION OF HIRSHHORN MUSEUM BUILDING

Mr. YATES. While we are on the subject, what is the condition of your building? The Hirshhorn had leaks in the building walls from the rain.

Mr. RIPLEY. They had seepage.

Mr. YATES. What is the reason for that?

Mr. RIPLEY. From condensation.

Mr. YATES. The Congress gave you money to correct that, did it not?

Mr. RIPLEY. I think Mr. Peyton can explain.

Mr. YATES. Mr. Peyton, come up here where we can look you in the eye and tell us what the condition of the Hirshhorn is now.

Mr. PEYTON. We have recaulked the joints at the Hirshhorn and installed weep holes along the facade, which we talked about last year. We believe we corrected the major problem relating to the moisture.

Mr. YATES. When did you complete that?

Mr. PEYTON. I believe about six months ago.

Mr. YATES. You completed it six months ago. For the last six months the problem has not reappeared?

Mr. PEYTON. That is correct, sir.

We have requested funds this year to clean the outside and to put a sealer on the concrete.

Mr. YATES. Was there a sealer placed on the concrete when the building was completed?

Mr. RIPLEY. Initially there was but the seepage began to destroy it. We got these strange areas that looked like rust coming out on the surface; that had to do with the condensation, though it turned out eventually from the interior between the inner and outer skin.

Mr. YATES. What is the condition of the interior of the Hirshhorn?

Mr. PEYTON. The interior is all right.

Mr. YATES. The interior is all right.

Mr. RIPLEY. It is good. It was more the weather changes that caused the damage on the exterior.

Mr. PEYTON. The number one concern is the concrete pavement on the plaza.

CONDITION OF OTHER BUILDINGS

Mr. YATES. What is the condition of your other buildings? How about the Air and Space Museum?

Mr. PEYTON. The roof of the Air and Space Museum is all right. We conducted a thorough inspection that did not expose any deficiencies.

Mr. YATES. In the walls as well as the roof——

Mr. PEYTON. You asked about the roof.

Mr. YATES. All right. I will ask about the walls now.

Mr. PEYTON. We are continuing to experience some leakage through a portion of the wall and from the terrace level, which completely surrounds it. We have an architectural engineer from Boston who has been engaged to study the building and come up with recommendations and necessary design work to correct the leaks.

Mr. YATES. Why should you have leaks? The building was opened how long ago, 1978? Three years ago?

Mr. RIPLEY. The building was opened in 1976.

Mr. YATES. Five years ago.

Mr. PEYTON. We think that the waterproofing membrane at the terrace level was not of sufficient quality to hold up. There have been some indications that during the period subsequent to the oil shortages in 1972, the quality of the asphalt type materials used in the construction suffered significantly. That could be a possible explanation.

CONTRACTOR/ARCHITECT RESPONSIBILITY

Mr. YATES. Is the contractor to be held responsible for something like this or is it too late for that?

Mr. PEYTON. It is too late.

We have only one case pending in court now. It is against the architect of the Hirshhorn. The case is being handled by the Department of Justice and is in excess of a million dollars.

Mr. YATES. For the repairs on the walls?

Mr. PEYTON. It is actually related to a claim that the GSA had to pay to the general contractor for which, in the opinion of the GSA, the architect was responsible.

Mr. YATES. Why have you just hired an architect from Boston for the Air and Space building?

Mr. PEYTON. To examine the walls and the terrace and to develop recommendations so that we can take steps to stop the leaking conditions in those two areas. The building also is experiencing some condensation, and we would like to know the correct technical solution to that problem.

Mr. YATES. What happens at the conclusion of the construction of a building? The contractor turns the building back to you and says, "This building is yours." Do you have an inspection of the building at this point as well as an ongoing inspection?

Mr. PEYTON. Yes, in some cases the actual performance tests have to be completed before the building is accepted.

Mr. YATES. Why are you just discovering, five years later, that the membrane was not proper? Weren't there leaks originally? If

the membrane was not proper, would there not have been leaks long before this time? When did you first discover the leaks?

Mr. PEYTON. I don't know. I was not with the Smithsonian at that time.

Mr. YATES. Who was with the Smithsonian at that time who can answer the question?

Mr. Ripley was with the Smithsonian.

Mr. RIPLEY. We will have to answer it for the record, Mr. Chairman. I do not recall.

[The information follows:]

NATIONAL AIR AND SPACE MUSEUM—FACADE AND TERRACE LEAKS

The National Air and Space Museum was turned over to the Smithsonian Institution by the General Services Administration on July 1, 1975, for beneficial occupancy of the administrative office areas and for construction of the exhibits. The Museum was opened to the public on July 1, 1976, as part of the Bicentennial celebration.

During the summer and fall of 1975, leaks appeared where the base of the marble facade meets the terrace. In 1976, in response to GSA, the contractor installed a cant strip at the intersection of the marble facade and the terrace paving. This cant strip controlled leakage for some time. However, leaks reappeared in late 1977, indicating that additional measures would be necessary. GSA investigation disclosed that other possible causes of the leaking were failure of the flashing to perform as designed; displacement of the flashing during various construction operations; damage to the flashing caused by rats; and other failures presumed a result of seasonal temperature cycles. Since several prime contractors were working in the area, GSA was not able to determine ultimate responsibility for correcting the leaks.

TERRACE AND FACADE AT AIR AND SPACE MUSEUM

Mr. RIPLEY. I do recall that after some period of time, perhaps a year or so, I heard to my dismay that there was some leaking in the area of the terrace part because it was getting down into the underground garage. There was some seepage down in the underground garage. I do not recall what measures were taken to follow up and whether or not the contractor was liable.

Mr. YATES. Does this take you out of your $49 million level? I remember the pride with which you told the committee——

Mr. RIPLEY. Forty-one million.

Mr. YATES. I thought it was $49 million. I will accept the $41 million.

Anyway, you were just within the budget.

Mr. RIPLEY. We were under budget and ahead of schedule.

Mr. YATES. Under budget and ahead of schedule.

Mr. RIPLEY. I don't know how you can ascribe the subsequent repairs.

Mr. YATES. I find this in other buildings and I am very much concerned. In the Kennedy Center I have suddenly awakened to the fact that we, the Government, spend about $4.5 million repairing the roof and the sides of the building with an outside contractor. I don't know whether GSA was the instrument under the Park Service responsible for it but I am trying to find out now what happened after the conclusion of those repairs. Did anybody look at them? Was there an architect or an engineer who was hired to say whether a good enough job had been done or that the condition of the repairs was all right and the building is now habitable?

The Union Station, of course, is a horrible example of the fact that nobody paid any attention to what was going on. Now apparently somebody is surmising, and perhaps it is unfair to surmise. I would have thought that the leak would have been fixed immediately after having been discovered, but here we are still trying to fix it four or five years later. The chance of having the problems corrected by the people who are responsible for the workmanship and who should have done a better job are slim.

Mr. RIPLEY. Mr. Jameson has been at the Smithsonian longer than I have, Mr. Chairman, and he might be able to have some answer or some approximation of that.

Mr. JAMESON. I don't think that I can add to what you have said. I do recall that a year or two after the building was open there was some evidence of leakage.

Mr. YATES. Let's read from the record.

PREVIOUS TESTIMONY RELATING TO NATIONAL AIR AND SPACE MUSEUM

Department of the Interior and Related Agencies Appropriations for 1980, Part 9, relating to the Smithsonian Institution. On page 410 relating to the National Air and Space Museum, I read:

The NASM Building opened in July 1976, providing 550,000 square feet of display and support space in addition to basement parking for the Mall visitors. Unprecedented numbers of visitors have put a strain on many of the facilities within the building.

Somebody is leading up to a rationalization there.

Many blocks of stone cladding on the building are allowing the intrustion of moisture through seams of softer stone strata which have been dissolved by the action of wind and rain.

Were you aware of that?

Mr. PEYTON. Yes, sir.

Mr. YATES. What is a block of stone cladding on the building?

Mr. PEYTON. The Tennessee marble.

Mr. YATES. Is that the outer surface?

Mr. RIPLEY. Yes.

Mr. YATES. So moisture is coming in. That was two years ago. Is it still coming in?

Mr. PEYTON. Yes, sir.

Mr. YATES. What is happening as a result of the moisture coming in?

Mr. PEYTON. Well, in the summertime, the outside air, which is warm and moist, goes through the walls and strikes the surfaces on the inside, which are cold because of the air conditioning. At an inside 70 degree temperature, the moist outside air condenses.

Mr. YATES. Does that help the walls? What does that do to the walls, smear them?

Mr. PEYTON. It makes an unsightly appearance where it is visible.

Mr. YATES. And it may deteriorate the walls more than that if it is not corrected?

Mr. PEYTON. Conceivably.

Mr. YATES. Are you taking steps to correct it?

Mr. PEYTON. No.

Mr. YATES. Why don't you do it?

Mr. PEYTON. One of the purposes of hiring an architect is to come up with recommendations that will solve the problem effectively.

Mr. YATES. So he is going to look at the walls.

I read the next paragraph.

The terrace paving block at street level is cracking and disintegrating. Its repair is critical to prevent moisture from penetrating the waterproof seal and eroding the steel framing below.

If this is correct—you didn't prepare this?

Mr. PEYTON. Yes, sir, I did.

Mr. YATES. You did prepare this.

It is more than the fact that the asphalt was not up to the standard of the previous material, is that correct?

Mr. PEYTON. The blocks are cracking in certain spots.

Mr. YATES. You go on to say that it is cracking and disintegrating and then you say:

Its repair is critical to prevent moisture from penetrating the waterproof seal and eroding the steel framing below.

I take that to mean what you are looking for is the repair of the terrace paving block.

Mr. PEYTON. That is correct.

Mr. YATES. It is not only the seal.

Mr. PEYTON. It is the waterproofing as well.

Mr. YATES.

Caulking between facade stones has failed, here again allowing water leakage to the interior.

Electric transformers for the entire building are operating at levels exceeding the recommended service. There is no redundancy or reserve electric power available.

Is that a fault, too?

Mr. PEYTON. Yes, sir, I would say it is.

Mr. YATES. How do you propose to correct it?

Mr. PEYTON. We may have to increase the capacity.

Mr. YATES. How much will that cost, do you have any idea?

Mr. PEYTON. No.

Mr. YATES.

Maintenance platforms at elevated mechanical air handling units must be constructed so as to provide a safe work space for mechanics.

That has not been done yet.

Interim food service trash storage must be reconstructed and refrigerated to eliminate vermin and odors.

Has that been done?

Mr. PEYTON. Yes, sir, it has.

Mr. YATES. Good.

Restrooms must be rebuilt to allow for disabled access.

Has that been done?

Mr. PEYTON. Yes.

Mr. YATES.

The elevated steel trusswork in the exhibit areas must be painted.

Has that been done?

Mr. PEYTON. No, sir, it has not.

ESTIMATE FOR REPAIR OF NATIONAL AIR AND SPACE MUSEUM

Mr. YATES.

The projected cost for required repairs to the National Air and Space Museum is $2.6 million.

You don't know whether that is true yet until you have the report from your architect. This is an obsolete statement then.

Mr. PEYTON. I would not say it is obsolete, I would say it is speculative.

Mr. YATES. All right. I am willing to accept speculative.

You would not be willing to stand by that estimate at this time, would you?

Mr. PEYTON. That is our best estimate at this time.

Mr. YATES. Well, it was your best estimate in 1979 which is two years ago so your estimate must have gone up since that time.

Mr. PEYTON. As I indicated, several of the items of work have been completed.

Mr. YATES. Well, in here look at your Restoration and Renovation of Buildings planned program. National Air and Space facade and terrace repairs show that you intend over the next five years through 1986 to spend $1.6 million. If your best estimate is $2.6 million, then you won't do the job, will you?

Mr. PEYTON. Well, the larger amount of $2.6 million in the book that you just read covers more than facade and terrace repairs.

Mr. YATES. Does it cover other items that ought to be undertaken?

Mr. PEYTON. Yes, sir, but the total of $1.6 million that you read from the book just relates to the facade and terrace repairs.

Mr. YATES. I thought that was the outer covering of the building.

Oh, it does cover other items including the restrooms. Maybe you ought to give us a breakdown but you cannot give us a breakdown until the architect acts.

Mr. PEYTON. A firm figure.

Mr. YATES. That is why you hired the architect, to give us a firm figure.

Mr. PEYTON. And, more important, to come up with a solution.

Mr. YATES. I guess we better take a look at this report tonight. Suppose we go into it more carefully tomorrow because I think it is a condition of the plant.

With that we will quit for the day.

THURSDAY, MARCH 12, 1981.

CONDITION OF THE RENWICK FACADE

Mr. YATES. The committee will come to order.

When we broke up last night we were talking about repairs to the various buildings and it appeared that more needs to be done to the Air and Space Museum than fixing the membrane or providing a new membrane which gave rise to what is happening in all the other buildings. When asked about the Renwick you were still not through with what appears on the list and I think perhaps I left it too quickly because I went back to the hearings in 1980 and from an interchange with Mr. Jameson at that time it appeared that that was a very complicated job.

On page 397 of Part 9 of the 1980 hearings I had a dialogue with Mr. Jameson [reading]:

Mr. YATES. I remember correctly you told us last year the cost would be $800,000?

Mr. JAMESON Yes. We now think it may be much more expensive than that. We estimate that approximately 80 percent of the veneer, if you will, the facade, of the building, will have to be replaced over the next two or three years.

Mr. YATES. What happened last year? What was your estimate of size that would have to be replaced last year?

Mr. JAMESON. Very much less than that. We did not have the scaffolding up last year. We now have had a firm at work for approximtely a year, and they are going over the building with essentially a fine-tooth comb.

Mr. YATES. Is that a good tool to use?

Mr. JAMESON. Well, maybe we should use a pick-ax. The condition of the exterior is much more significantly serious than we thought a year ago. Much more of the stone is in danger of coming down.

You boosted the $800,000 to $4 million.

Mr. RIPLEY. I think we should ask for about $4 million now. I cannot tell you the degree of frustration we feel about the project of restoring the Renwick Building, which was done under GSA auspices beginning in 1968. This absolutely flawless new technique invented in Belgium, which involves casting the stone out of dust of the old stone from molds designed to look exactly like the old stone was said to be 100 percent perfect, and has turned out to be unsatisfactory. So we are stuck. We feel very embarrassed to have to come back to this committee to say that this system was not right.

Let's stay with the Renwick for a while now. You said that the repairs were coming on fine. That is 1980.

We now look at the 1981 hearings on the Renwick. Well, apparently the Renwick was not included in your list in the report. The 1981 hearings, page 244, Renwick Gallery of Art. I read from your insert in the record:

Renovation of the deteriorated facade is the building's major requirement. Precast concrete has been selected as a replacement for the existing natural stone and is expected to produce a facade of acceptable quality and durability. Repairs to the roof and windows also are anticipated. The building's mechanical systems are generally in good condition, although routine maintenance and replacements are planned, as well as the installation of an emergency generator and improved security systems for the protection of artifacts.

These requirements are estimated to cost $2.7 million.

I should have asked whether that is in addition to the $4 million that Mr. Ripley said you needed the previous year. Is this in addition to that $4 million?

Mr. HUGHES. Yes, sir, it is.

Mr. YATES. Well, what is the total cost going to be for the Renwick?

CURRENT ESTIMATE FOR REPLACING RENWICK FACADE

Mr. PEYTON. Since our last appearance before the committee and since providing you with a report, we have completed detailed replacement drawings for the stones and have determined that a 100 percent replacement is the only practical solution. We have solicited prices from six firms: three firms supply precast materials, and because the Fine Arts Commission asked us to fairly check out the price of cut stone—three firms that supply cut stone. The lowest price we obtained for the precast materials was approximately $4.6 million and the price for cut stone was approximately $1 million more.

Mr. YATES. More? That makes $5.6 million.

Mr. PEYTON.Yes, sir. For cut stone, the only available source was West Germany.

Mr. YATES. Here we are two years later and what does that mean, that the repairs have not been made?

Mr. PEYTON. The repairs have not been made.

Mr. YATES. Why does it take two years to come to this conclusion? I don't understand this.

Mr. RIPLEY. Part of the problem, Mr. Chairman, is the fact that we got into a kind of debate with the Fine Arts Commission who said that real stone looks better than precast concrete. We felt that precast concrete was better because it looked just as well and was less expensive and so a lot of time was in fact spent trying to carry this argument back and forth with the Commission of Fine Arts. It is one thing to talk about the aesthetics, the appearance of the building, as you know, and another thing to try to see how you can do it as inexpensively as possible. We favored the saving on the expenditures. I am not sure—Mr. Peyton probably knows—where we come out on that but it did take a great deal of time, isn't that right, Tom?

Mr. PEYTON. Yes, sir. The preparation of the detailed drawings which allowed us to go on the market to obtain prices.

Mr. YATES. I don't understand why you didn't get detailed drawings two years ago. Two years ago you came before us, Mr. Jameson was testifying about it at that time, and you talked about having to do 80 percent of the building. Now you are up to 88 percent of the original sandstone and you just are completing the drawings and starting to work on it. What happened in the interim? How much more of the building has deteriorated?

Mr. PEYTON. To the best of my knowledge there has been no additional deterioration.

Mr. YATES. What happened as a result of the deterioration of the outer structure? Does that not carry with it an accompanying deterioration of the inside as well?

Mr. PEYTON. Potentially, yes.

Mr. YATES. Not actually?

Mr. PEYTON. No, I don't think we can precisely say that.

Mr. YATES. I think the committee would want you to precisely say. The committee wants you to tell us just what the condition is. I must say that last night I came out of the hearings thinking that the Smithsonian had not been entirely fair with the testimony that you gave concerning the Air and Space Museum. The impression that I received was that all that had to be done was that your membrane had to be corrected and then when we started to read we learned about the stones and we learned about other things that had to be done.

We think it is important to preserve the physical structure of all the buildings. We think that is important in spite of what the expense may be. It is important that you not try to skirt necessary repairs because of the constraints that Mr. Stockman and OMB may place upon you. I believe that just patching here and there in your buildings will require much more major repairs at a later time. You are two years later on the Renwick Building now and your costs have gone up another $1.5 million, well, they have gone up from the $800,000 that Mr. Jameson testified was the figure in 1979 when you appeared before us. So what has to be done?

CONDITION OF THE INTERIOR OF THE RENWICK GALLERY

Suppose your drawings are completed and we provide the funds with which to complete the rehabilitation of the outer structure; will you be coming back next year and saying, Mr. Chairman, we were not aware of the fact that during the interim period the interior of the building had deteriorated to the point of where we now have to provide certain kinds of repairs for this? What is the situation? Do you know what the condition is of the interior?

Mr. PEYTON. Yes, sir, we do.

Mr. YATES. What is the condition of the interior?

Mr. PEYTON. Generally good.

Mr. YATES. What does that mean, generally good? Are there places where it is not generally good?

Mr. PEYTON. No, sir.

Mr. YATES. It is good then? There is nothing that has to be done to the interior.

Mr. PEYTON. Not other than normal maintenance and repair.

Mr. YATES. Will you be providing funds for normal maintenance and repair for the Renwick?

Mr. PEYTON. Yes, sir, we will.

Mr. YATES. That should take care of that.

What is the condition of the Renwick Building?

CONDITIONS OF RENWICK BUILDING

Mr. PEYTON. The Renwick is generally in good condition. It may need minor repairs by the in-house repair crew as it stands right now.

Mr. YATES. Well, is this a constant struggle with repairs? Will you have to fix up the entire roof at some time?

Mr. PEYTON. It is conceivable we might. However, the materials involved on that particular roof are very durable and not of the more recent type of built-up roof that we have in other larger types

of buildings, so I would expect that that roof will continue in service for another 10 or 15 years at least.

Mr. YATES. All right. We will accept that then.

Mr. RIPLEY. I think, Mr. Chairman, what we have been trying to do year in and year out, especially in relation to the five year prospectus, is to phase these repairs in such a way that we need not ask for an enormous amount of money in any one year. It is true that the exterior of the Renwick Building has been a headache ever since we got involved, as I testified last year and the year before, with trying to administer this business of the restoration of brownstone which deteriorates under the conditions of pollution anyway. And so we still have a kind of a running sore there with the stone that continues to deteriorate in quantities that sometimes to our horror pull off on the outside of the building. The amount was shown in the prospectus to be about $3.8 million between now and fiscal year 1986.

RENWICK GALLERY RESTORATION COSTS

Mr. YATES. How much has been spent on the Renwick restoration in the last several years?

Mr. RIPLEY. Can we give you that figure?

Mr. PEYTON. Is this on the facade, sir?

Mr. YATES. Anything other than the ordinary.

Mr. JAMESON. Nine hundred thousand dollars between fiscal year 1978 and fiscal year 1980.

Mr. YATES. Does that mean you have spent $900,000?

Mr. JAMESON. It has either been obligated or is in the process of being obligated this year, yes, sir.

Mr. YATES. All right.

Mr. Jameson, I call your attention to page C–10 of your justification which says that to date an amount of $1.9 million has been appropriated for this project.

Mr. JAMESON. Excuse me. I did not carry the total through fiscal year 1981. Nine hundred thousand plus the fiscal year 1981 appropriation.

Mr. YATES. Which is what?

Mr. JAMESON. One million dollars.

Mr. RIPLEY. And $1.4 million is still available for this. We estimate the total by fiscal year 1986 required would be $3.8 million.

AMERICAN ART AND PORTRAIT GALLERY BUILDING ROOF

Mr. YATES. Let's look at page C–9. You have a statement there with which the committee agrees. I have the impression, however, that you don't agree with it in your behavior because you say you don't want to come to us with all the expenses at once but you do say the following:

> Maintaining the integrity of the exteriors of all Smithsonian buildings is critical to preventing major structural damage and deterioration due to age and weathering and to ensuring a safe environment for visitors, staff and collections. Energy conservation also demands watertight and weathertight exteriors. Work in this category includes a variety of major projects that must be accomplished periodically according to the life cycles of the materials used. For example, roof replacements are needed about every 20 years.

How does that statement affect your buildings? How many of your roofs have to be replaced within the next year or two and how many have been replaced within the last several years?

Mr. PEYTON. We are presently working on the Fine Arts and Portrait Gallery. We have completed part of that project and expect to begin the balance of work within the next two or three months.

Mr. YATES. Of the Fine Arts and Portrait Gallery.

Mr. PEYTON. Yes, sir.

Mr. RIPLEY. That is the old Patent Office.

Mr. YATES. What are you doing on that building? Are you looking at the roof?

Mr. PEYTON. We are replacing the roof.

Mr. YATES. Replacing the total roof?

Mr. PEYTON. Yes, sir.

Mr. YATES. What is the cost of that going to be?

Mr. PEYTON. I would have to check that.

Mr. RIPLEY. It is expected that we will finish that with funds appropriated in 1981. That is all it says here.

Mr. YATES. Well, that was $350,000. Can you replace a roof as large as the Portrait Gallery for that amount?

Mr. PEYTON. We phased it in two parts. We completed the first part, and we expect to complete the final part for $350,000.

Mr. YATES. Can you do it for twice that, $700,000?

Mr. PEYTON. I belive we can.

Mr. YATES. My goodness, when I think what they are asking us for to replace the roof at the Visitor Center in the millions, I don't understand how you can do it.

Mr. PEYTON. I believe there was an article in the paper that there is additional work to be done at the Visitor Center.

Mr. YATES. What do you mean by the term 'roof replacement'? This is the phrase that you use.

Mr. RIPLEY. It is metal sheeting, isn't it?

Mr. PEYTON. Normally either a mopped-on bituminous type material or a rubber sheet is placed on a concrete backing; on top of that insulation is placed; and on top of that, the final, surface coating.

Mr. YATES. The entire roof of the American Portrait Gallery and the American Museum of Art is being replaced then for $700,000?

Mr. PEYTON. That is correct.

Mr. YATES. More power to you if you can do it for that. We will ask you next year how you are doing, assuming we are here next year.

That is for the roof.

CONDITION OF ROOFS AT VARIOUS SMITHSONIAN BUILDINGS

Before I leave that, what is the condition of the roof on each of the other buildings? How many buildings are we going to talk about now?

Mr. PEYTON. Approximately 14.

Mr. YATES. Fourteen buildings. Go through the list.

Mr. PEYTON. National Air and Space is in good condition.

Mr. YATES. Good or excellent?

Mr. PEYTON. I would say good.

Mr. YATES. Why not excellent? It just opened a few years ago.

Mr. PEYTON. It is not a brand new roof.

Mr. YATES. Are there any roofs that are excellent?

Mr. PEYTON. No, sir, I would not say so.

Mr. YATES. Why do you say only good? Are all your roofs in need of repair?

Mr. PEYTON. No, sir. I will go through them and you can see from that.

Mr. YATES. Let's talk about it.

Mr. PEYTON. The National Air and Space is in good condition.

On the Hirshhorn Museum the roof is in good condition.

On the Smithsonian Castle there is some maintenance and repair work to be done with funds we presently have on hand. This consists of replacing some of the slates and some gutter work.

On the Arts and Industries Building we have partially replaced the roof, and the remaining work to be done is significant.

Mr. YATES. Now that is going to cost you $5 million, you say.

Mr. PEYTON. We expect that completing the A. & I. work will cost $9.2 million in current dollars.

Mr. YATES. That is for some exterior renovation.

Mr. PEYTON. That is correct.

Mr. YATES. What does that mean, replacement of some of the tile?

Mr. PEYTON. For all of the roof and facade work including all of the window sashes.

Mr. YATES. Because it has not been pointed over the years?

Mr. PEYTON. Yes. The building needs to be checked at the brick joints; where the mortar is loose, it needs to be replaced. There is an attempt being made, as part of this overall project, to restore the facade of the building to its original condition as much as possible. Since the building was built, there has been a certain amount of free lance modification—dormers added, extensions built, and so forth. We would like to remove as many of these modifications as is practical, and this is also included in the scope of the work to be done.

On the Freer Gallery some relatively minor gutter and drain work is needed for which we presently have funds; otherwise, the roof is in good condition.

The Museum of American History will very shortly have its 20th birthday, and we anticipate a complete replacement of that roof.

Mr. YATES. That is part of your cycle.

Mr. PEYTON. In the case of the Museum of Natural History, we presently have under contract repairs to the West Wing roof, and that work is nearing completion.

We have the Anacostia exhibits lab on which we have been doing major roof restoration work. We have many buildings at Silver Hill, which you know about, and we are in the final phase of completing major repairs of the roofs of those buildings.

EFFECT OF BUDGET AMENDMENT ON RESTORATION AND RENOVATION OF BUILDINGS REQUEST

Mr. YATES. Now Restoration and Renovation of Buildings. The Carter request was for $8.5 million and that is itemized on page C–8 of your justification. Now you took $1 million away from that.

Mr. PEYTON. Yes, sir, we did.

Mr. YATES. What happens as a result of losing the $1 million? What will you not be able to do?

Mr. PEYTON. Of the total $1 million reduction, the three major components each totals $250,000. First is a reduction of $250,000 from a total request of $1 million for the A. & I. exterior, or a revised request of $750,000.

Mr. YATES. Why are you doing that? What will you have to sacrifice for $250,000?

Mr. PEYTON. Well, inasmuch as the A. & I. is a large dollar project, we will defer a portion of the work until the following year.

Mr. YATES. Can you do that without hurting it?

Mr. PEYTON. Yes, sir, we can.

Mr. YATES. All right.

Mr. PEYTON. Most of these projects are broken into phases because of the nature of the activities of the Smithsonian which, as you know, is open seven days a week, and we have a lot of visitors. We try to avoid disrupting the twenty some million people that come to visit the Smithsonian.

Two hundred fifty thousand dollars has been deferred on the Museum of American History terrace repairs on the west end of the building. At one point this work had not been originally contemplated as having to be done. An entrance way was constructed to the major exhibit "A Nation of Nations." The museum contemplates a change in that.

Furthermore, as a result of our removing the stone pavers and examining the membrane on the earlier phases of at the terrace project, we have concluded that we would probably be better off to go ahead and replace that one final section.

Mr. YATES. You mean totally?

Mr. PEYTON. Yes, sir.

Mr. YATES. What will the cost of that be?

Mr. PEYTON. It is $250,000 which we are now deferring.

Mr. YATES. Well, it says something about removing the ramp and canopy so you are removing the ramp and canopy and waterproofing. Does that mean that the ramp and the canopy and the waterproofing are in good enough condition so that you don't have to worry about further deterioration?

Mr. PEYTON. For one year.

Mr. YATES. For one year?

Mr. PEYTON. Yes, sir.

Mr. YATES. What happens next year?

Mr. PEYTON. We will have it in our fiscal year 1983 budget.

Mr. YATES. What is the next item?

Mr. PEYTON. The other major item is the deferral of $250,000 from a $1 million request on the Renwick exterior. The sequence of the work that we are planning on the Renwick involves setting up the scaffolding, using a latex mold, and producing replacements for

the stone. We will then replace the stones one section at a time, for each portion of the facade. With the request for $750,000, plus the money we presently have on hand, we believe that we can carry on the project in an orderly manner and not suffer as a result. We will need the $250,000 plus the next increment in next year's budget.

Mr. YATES. Why are you deferring it and not doing it this year?

Mr. PEYTON. Well, part of the answer lies in easing the disruption to visitors. There is a limited area for the contractor to work on at any one particular time. The facade of that building was divided into different elements, and we are planning on doing a pavilion at a time. The Renwick is located on a very busy corner, and there is no staging area for a project of this sort, which is going to be difficult.

Mr. YATES. In the 1981 hearings, on page 241, Fine Arts and Portrait Galleries Building it says:

> Much work remains to be accomplished to preserve the building envelope and to protect the collections housed there. Completion of the roof replacement and extensive recaulking and repointing are required.

Mr. PEYTON. Some funds have already been appropriated for repointing. We have an additional request for $175,000 to complete, or nearly complete, the repointing project.

Mr. YATES. And that is enough to do the job?

Mr. PEYTON. No, sir, it is not. It is to do another aspect of the facade work.

Mr. YATES. I don't see any reference to further funding for the repointing of the facade. Apparently the $175,000 you have asked for for the repointing of the facade is adequate to do the job.

Mr. PEYTON. Yes, sir, but being an old building it will continue to require a lot of attention. Some of the stone in it is very similar to what we have in the Capitol—a combination of sandstone and marble—and the condition looks about the same. We also have planned to rely on an expert, such as Dr. Lewin, who assisted us on some of our other facades, to recommend to us the preservation method. The marble columns are in poor condition much like some of the ones on the Capitol.

Mr. YATES. What does Dr. Lewin suggest be done?

Mr. PEYTON. Well, we have included a study in the request for funds.

Mr. YATES. You are spending $10,000 for the stone facade this year and $155,000 next year and then $200,000 each year between 1983 and 1986 for a total of $765,000.

Mr. PEYTON. The balance of funds that covers succeeding years is an estimate at this time in anticipation of the report recommendations.

Mr. YATES. It will probably cost more, won't it?

Mr. PEYTON. I hope not.

Mr. YATES. I hope not, too.

Will the deterioration be too extensive to hold in check during the next few years?

Mr. PEYTON. Mr. Chairman, it appears to us that the deterioration is superficial and not structural, as is the case on the Capitol.

FREER GALLERY RENOVATION

Mr. YATES. What are you going to do with Freer this year? The cost for heating, ventilating and air conditioning this year will be $300,000; $380,000 in 1982 and $383,000 in 1983, approximately a million plus, $790,000. We already have the $300,000.

Mr. PEYTON. We have already awarded the contract to start this work.

Mr. YATES. Will that work that you have given a contract for also include deteriorated electrical wiring which has to be replaced and upgraded?

Mr. PEYTON. This is some of the original wiring that was in the building.

Mr. YATES. Will it also include the installation of smoke detectors?

Mr. PEYTON. The total request is not the current contract.

Mr. YATES. Do you mean over the next few years?

Mr. PEYTON. Yes, $790,000.

Mr. YATES. Will it also include skylight repairs which are needed to prevent water damage?

Mr. PEYTON. Yes.

Mr. YATES. Will that be done in 1981?

Mr. PEYTON. Yes, sir.

Mr. YATES. Are you also undertaking lighting improvements for this year?

Mr. PEYTON. Yes, sir.

Mr. YATES. You are also making arrangements to take care of the disabled.

Mr. PEYTON. The lighting improvement is in the current budget.

Mr. YATES. I assume that the skylight repairs are, too.

Mr. PEYTON. No. For the skylight repairs, we are going to try to do some work with our own repairmen, but if we are not successful, we will have a replacement by contract later.

Mr. YATES. Well, this says, "are needed to prevent water damage." I suppose that may be necessary to protect some of the exhibits, is that correct?

Mr. Lawton, how bad is the condition?

Mr. LAWTON. We have had some serious leaks, so serious that water has come into the exhibition galleries and I have gone down on the weekends to help mop it up.

Mr. YATES. Has that been repaired?

Mr. LAWTON. Yes.

Mr. YATES. I would hope that would be done as promptly as possible then.

How long has that condition been going on?

CONDITION OF FREER ROOF

Mr. LAWTON. Since the new roof was applied about three years ago.

Mr. YATES. I don't understand what it is about Washington, it seems to have a climate that does not permit good roof making.

Mr. LAWTON. There is an expression in Chinese, Mr. Chairman, i fen ch'ien i fen huo, for one penny of money you get one penny of goods. Frequently, the people who get these contracts are the

lowest bidder; they are not necessarily the people who give you the best roof.

Mr. YATES. Who built the roof for you?

Mr. LAWTON. I don't know.

Mr. YATES. Who built the roof for you? What do you do with a contractor? What is the nature of the contract? Don't you get warranties that the roof will be good or in good shape?

Mr. PEYTON. No, sir, we do not.

Mr. YATES. Why don't you? Is it because the contractor says for this much money I cannot do it, I cannot warranty it, or what?

Mr. PEYTON. Normally when the contractor's work is completed and the payment made, that is the end of it.

Mr. YATES. I know that but in light of what Mr. Lawton is saying, apparently the roof was not very successful. Now what did the Smithsonian do under those circumstances? Is this before you came with the Smithsonian or was this one of your babies?

Mr. PEYTON. I hope so.

Mr. YATES. You hope so? I don't understand that.

Was this a whole new roof, Mr. Lawton?

Mr. LAWTON. It was, yes.

Mr. YATES. What does the Smithsonian do to make sure the roof is in good shape? That is why I pressed so much on the museum support facility need in GSA. Here you have paid for a new roof. What did you pay for that roof?

Mr. PEYTON. I don't know.

Mr. YATES. What did you pay for that roof, Mr. Jameson?

Mr. JAMESON. We paid approximately $92,000 for the first phase. I do know that there were some immediate problems upon the completion of this roof work; the contractor was called back and he did some additional work.

CONTRACTOR RESPONSIBILITIES

Mr. YATES. Who was the contractor?

Mr. JAMESON. Associated Builders, Inc.

Mr. YATES. He was called back and said what?

Mr. JAMESON. There were some leaks that showed up immediately or soon after the next rain. There were some further repairs done but leaks showed up thereafter.

Mr. YATES. Well, what do you do if you have your house repaired, don't you get a warranty?

Mr. RIPLEY. I was about to say, Mr. Chairman, that we live in a house and we have never been able to solve this problem. We ask for a warranty and they come back and they say they have fulfilled the requirements and then they go away again and then they don't answer the telephone. That is just a house.

Mr. YATES. Well, won't they answer it for your lawyer?

Mr. RIPLEY. It turns out to be more expensive for us as householders to take on the problem of getting the lawyer and paying all of his bills.

Mr. YATES. The Department of Justice has people on the payroll who are paid whether they have lawsuits or not.

Mr. RIPLEY. I realize that, Mr. Chairman.

Mr. YATES. Judge, what about this? Was this referred to you? What do you do in a case like this?

Mr. POWERS. I recall, Mr. Chairman, a discussion about inspections, and I believe there was some question whether our people at the time had been sufficiently careful to check on this at the time that some of the problems during construction arose.

Mr. YATES. Would your files show what happened?

Mr. POWERS. I don't have a figure.

Mr. YATES. Do you have a file on it?

Mr. POWERS. Yes.

EFFECT OF FREER ROOF LEAK

Mr. YATES. The committee would like to know what happened here.

In the meantime, Mr. Lawton, you still have a leak. Do you have collections under the roof itself or is this just a floor of working space under the roof?

Mr. LAWTON. Occasionally the leaks occur above the space where the exhibition galleries are, and then water would leak down into the exhibition space, not always but frequently.

Mr. RIPLEY. They have an attic space which is fairly sound normally but occasionally it gets through.

Mr. YATES. But you have rain in Washington occasionally.

Mr. RIPLEY. You have to get more pails and mops.

Mr. LAWTON. It has to do with the drainage system on the roof proper that leads down to the lower section of the building.

Mr. YATES. There ought to be some kind of retribution here. What do you mean when you quoted—who was it?

Mr. LAWTON. The Chinese.

Mr. YATES. No particular philosopher?

Mr. LAWTON. No, just a folk saying. The idea is you get what you pay for.

Mr. YATES. Why do you say that in this case? Wasn't enough paid to fix the roof?

Mr. LAWTON. It went to the cheapest contractor.

Mr. YATES. But presumably the cheapest contractor was going to give you a workmanlike roof.

Mr. LAWTON. That does not happen frequently in Washington, Mr. Chairman.

Mr. YATES. Well, was that supervised by GSA, does anybody know?

Mr. PEYTON. No, sir, it was not.

Mr. YATES. The Smithsonian does that itself? Your predecessor, Mr. Ault——

Mr. PEYTON. He is retired now.

Mr. YATES. He is probably enjoying his retirement.

Well, what do we do? You cannot just shrug your shoulders to this. You are putting a new roof in at the Portrait Gallery. What are you going to do to make sure that is a good roof?

ROOF REPLACEMENT AT THE PORTRAIT GALLERY

Mr. PEYTON. First of all we have researched the design needs of that particular installation. It is an old building and has the traditional elements of architecture that one does not normally encounter today, so we have to look into that very carefully and deter-

mine what the nature of the flashing on the building, or the transition between the roof and the parapet or the chimneys—those aspects. A member of our staff does that, and we have received some training in the proper design of the roofs.

ROOF WARRANTY IN CONTRACTS

Mr. YATES. What does your contract provide when you let a contract, Judge Powers? Does it provide for a warranty?

Mr. POWERS. I am not sure.

Mr. YATES. Should it not provide for one?

Mr. POWERS. One of the problems with these repair contracts is that you have to make specifications before you know all the conditions you are going to be faced with when you take the roof off. It frequently involves change orders along the way and you get into a very murky situation with the exact standards to which you wish to hold the contractor. The more unprecedented conditions, the easier it is for him to argue that he did not ever agree to do that different kind of job and he cannot be held responsible for that particular kind of problem.

There is a warranty of fitness that I think lasts about a year.

Mr. YATES. Here you had leaks that occurred immediately.

Mr. POWERS. I am not familiar with that whole case.

Mr. YATES. I would be interested to find out what was done to try to hold the contractor there.

Mr. PEYTON. On the matter of what to do?

Next is the selection of the right kind of roof. In general, I think you would know we don't build copper roofs or slate roofs or some of the other traditional ones any more; they are too expensive. We recognize that and the roofing industry has come up with cheaper solutions.

Two basic type roofs for office or similar type buildings are those with a rubber sheeting mopped on with liquid bitumin which is the element of that system that keeps the water out, or those known as a builtup roof which consists of asphalt impregnated felt and mopped on bitumin and then the insulation and a protective coating on the top. Our staff designed the roof for the American Art/Portrait Gallery building together with all the necessary flashing, which is frequently a source of the problem.

We write the specifications and take competitive bids. We have recently instituted a procedure with the cooperation of our procurement officer to be selective about those firms that can offer bids on the job. The contractor must exhibit demonstrated performance or experience in the type of roof which has been specified for the job.

CONTRACT FOR MUSEUM SUPPORT CENTER CONSTRUCTION

Mr. YATES. Mr. Perrot, what does your GSA contract provide with reference to the roof? Is there a warranty for that?

Did you pass on that contract, Judge? Did you see the contract?

Mr. POWERS. No.

Mr. YATES. Who reviews the GSA contract? Does the GSA and not the Smithsonian review the contract? Do you leave it entirely in the hands of the GSA?

Mr. PERROT. The specifications were developed by the architects and reviewed by the engineers of the GSA independently, reviewed by an independent consulting firm that was hired by GSA for this purpose, if I understand the matter correctly, and reviewed by our own Office of Engineering. We believe that with all of these reviews, and the suggestions that have been made by all the parties, and each suggestion having been reviewed by all involved, that we can be pretty sure that we will have a tight membrane.

Mr. YATES. Suppose the contractor does not do the work in accordance with all those reviews?

Mr. POWERS. There is a standard form of appeal. In this case it would go to the GSA Board of Contract Appeals. We had a long dispute in the case of the Hirshhorn and there were some claims by the contractor because of a change order. That was offset in part by other claims against the contractor.

Mr. YATES. The appeal to the GSA, is that in the nature of an arbitration?

Mr. POWERS. No, it is in the nature of a regulatory hearing.

Mr. YATES. Is it final and binding or is there an appeal to the court?

Mr. POWERS. It is binding but there is a further appeal to the court, yes. The appeal to the court is rather limited, the appellant has to show that the decision was arbitrary and capricious.

Mr. YATES. Would you take a look at the contract that Mr. Perrot has just to see whether there is a protection for the Government and what the protection is?

Thank you.

Mr. PEYTON. Mr. Chairman, if I could finish the last part.

Mr. YATES. I am sorry, I thought you had.

ROOF INSPECTION

Mr. PEYTON. Probably the most critical aspect of the roofing is the contract phase and the proper inspection by the Smithsonian. We have learned from experience that it is necessary to have a full time inspector on the job at all times during the roofing operation to ensure that the surface is properly prepared with the various materials which have been specified. We have a well trained working inspector now on our staff who is a relatively recent addition and he is fully involved in reviewing the work that is done by professional architects and he is also fully involved in the inspection phase.

Mr. YATES. He was not the one who reviewed the Freer?

Mr. PEYTON. No, sir.

Mr. YATES. Do you still have the one who reviewed the Freer?

Mr. PEYTON. I don't know.

Mr. YATES. Will you check that, please, and see whether or not he was fully qualified and pursued the work?

Mr. PEYTON. The man I am referring to has recently joined the Institution.

Mr. YATES. In line with Mr. Lawton's quotation from the Chinese, I would like to find out what the difference in bids was for the Freer roof and to see whether it was significant.

Mr. PEYTON. All right.

Mr. YATES. I am sorry, Mr. Lawton. What are we doing for Mr. Lawton now that he still has a leak? It is important that we get that. Are you still getting leaks?

Mr. LAWTON. Yes.

Mr. YATES. How soon before we can stop this leaking?

Mr. PEYTON. Based on what I know now, we will be working on it tomorrow morning.

Mr. YATES. That is fine, what are you going to do, put pails under the leaks?

Mr. PEYTON. We have a roofing crew who will take a look at the problem.

Mr. YATES. Give us a report and give Mr. Lawton a report. Mr. Lawton, please let us know what happens.

Mr. PEYTON. You may be sure I will.

Mr. YATES. We want those documents and scrolls to be protected. I suggest you might want to put the bronze and the marble sculptures under that part of the roof.

HIRSHHORN MUSEUM RESTORATION PROJECTS

The Hirshhorn Museum and Sculpture Garden, two projects are underway which must be completed, including modification to the Sculpture Garden to provide access for the disabled and facade repairs necessary to eliminate staining and leaking and to correct original deficiencies. What were the original deficiencies, failure of the membrane again?

Mr. PEYTON. No, sir. We previously received funds to rake out the caulking of the joints and to replace that material and to insert the drains I mentioned yesterday. We will remove the superficial stains that came as a result of the original condition, and we will apply a sealer to the building to protect it in the future.

Mr. YATES. Mr. Lerner, what is the condition of the Hirshhorn? Do you find leaks or are you protected?

Mr. LERNER. We are fairly well protected.

Mr. YATES. No complaints?

Mr. LERNER. An occasional complaint.

Mr. YATES. What is your problem?

Mr. LERNER. An occasional leak in two galleries.

Mr. YATES. From the roof?

Mr. LERNER. No.

Mr. YATES. From the walls?

Mr. LERNER. We don't know, perhaps.

Mr. YATES. The sealer should help that.

Mr. LERNER. The sealer could help that. We have had unusually cold weather this year, which may account for it.

Mr. YATES. Are the leaks identified there so they don't break out all over the place?

Mr. LERNER. Yes.

Mr. YATES. I assume they are going to seal those first.

Mr. LERNER. Yes, they will be working on them Tuesday.

Mr. YATES. All right. You are going to work on the plaza surfacing to apply a more durable material. What is more durable than the material we have?

Mr. PEYTON. The material is a cast-in-place concrete with exposed aggregate surface. Over the years the aggregate has come

out of the concrete and the surface was probably treated with chemicals such as calcium chloride to avoid the hazards of slippery conditions.

Mr. YATES. What will you replace that with?

Mr. PEYTON. Well, we would like to have some recommenations from an architect who would first consider the aesthetic aspect. Another consideration that is the durability of substitute materials. We would certainly consider granite, possibly slate.

Mr. YATES. Was that used at the Air and Space Museum?

Mr. PEYTON. No.

Mr. YATES. What stone was that?

Mr. PEYTON. Tennessee marble.

Mr. RIPLEY. It is from the same quarry that the original marble for the National Gallery was acquired from and it is very thin instead of being thicker.

Mr. YATES. Is granite more expensive?

Mr. RIPLEY. Granite is less expensive.

Mr. YATES. Would it not be better to have that facade of granite?

Mr. RIPLEY. I think it is heavier.

Mr. YATES. What I am talking about is the walkway.

Mr. PEYTON. Well, in the case of the Hirshhorn——

Mr. YATES. No, Air and Space where they talked about the stones crumbling.

Mr. PEYTON. The plaza at the National Air and Space Museum is made up of precast concrete pavers and, again, with exposed aggregate.

Mr. YATES. Do you remember, Mr. Ripley, coming in and saying you were within bid.

Mr. RIPLEY. Yes.

Mr. YATES. It looks like you are going to be without bid right now.

I can say the Hirshhorn is in good shape, right?

Mr. PEYTON. With one exception, which is Mr. Lerner's concern about his plaza.

Mr. YATES. That is your concern, too.

CONCERNING MUSEUM OF AFRICAN ART RESTORATION

The Museum of African Art, how much did we invest in restoring those buildings?

Mr. ROBBINS. I have some good news to report.

Mr. YATES. Good.

Mr. ROBBINS. Yes, we had leaks long before we were in the Smithsonian but now this past year that we are part of the Smithsonian they are being dealt with.

Mr. YATES. No further leaks.

Mr. ROBBINS. One of our curators works in a basement office and was beginning to get arthritis from the seepage. This problem has been corrected and her arthritis is getting better now.

Mr. YATES. Good.

Mr. PEYTON. We have rerouted some of those downspouts.

Mr. YATES. To the lowest bidder?

Mr. PEYTON. These are being done in-house.

Mr. YATES. Do you have an inspector watching your in-house?

FIRE PROTECTION AT THE MUSEUM OF AMERICAN HISTORY

We learned about the back part of the Museum of American History a few minutes ago. [Reading from 1981 hearings.]

Although fundamentally sound, the building requires major upgradings of its fire detection and suppression systems and of its heating, ventilating and air conditioning systems.

Are those being done?

Mr. PEYTON. We have completed the necessary planning for the fire protection system and we have now to embark on the first phase of a multimillion dollar program.

Mr. YATES. Both of which would be $1,650,000 spread over all the years through 1986?

Mr. PEYTON. Possibly beyond that.

Mr. YATES. Possibly. In other words, you don't know whether that amount of money will be adequate?

Mr. PEYTON. That is correct because of inflation.

Mr. YATES. You talk about a fire protection master plan that is under development. Is fire a real concern there? I know fire is a concern in every building, but is it a special concern there?

Mr. RIPLEY. You will recall the famous fire we had shortly after the building was completed when that extraordinary sort of electrical system failure created 1,600 degrees of heat and in a few minutes the walls and the marble crumbled and the carpets all crisped up and there was buckling in the steel doors and there was $775,000 worth of repairs as I remember so ever since then we have been pretty scared about the possibility of another kind of flash fire of this sort.

Mr. YATES. Is this the kind of thing you can go back to the architect or contractor on for a fire that occurred?

Mr. Jameson wants to say something.

Mr. JAMESON. Not if you wish to, Mr. Ripley.

Mr. RIPLEY. No, John. You go ahead.

Mr. JAMESON. As I recall, there was substantial opposition at the time the building was being constructed in the Sixties. There was a lot of judgment among curators about fire suppression systems, including sprinklers, and that building was not adequately protected.

Mr. YATES. Do you mean in opposition to fire suppression systems?

Mr. JAMESON. Yes, sir, because of the potential damage should the sprinkler go off accidentally or in relationship to a given fire. The building was not adequately equipped with sprinkler systems at the time and we have as part of our exhibit program in certain galleries installed sprinklers but this is a more major effort both to detect and suppress.

Mr. YATES. Well, Paul, do you want to comment on that?

Mr. PERROT. Mr. Chairman, there was considerable opposition, until about five or six years ago, to the use of sprinkler systems in museums and in libraries; however, it has been found statistically over the years, that the damage from water has been far less than by fire. For example, the fire a few years ago at the Museum of Modern Art would probably have been contained had a sprinkler system existed. Obviously damage by water might have occurred where the sprinklers went off, but the rest of the building would

have been spared. It is for this reason the museums are accepting, reluctantly, sprinkler systems. Of course, they would rather have Halon, but this product can only be used in small areas. It would be totally prohibitive to have a Halon system in large spaces. Also, the canisters can discharge accidentally, and then have to be entirely recharged at considerable expense. I believe, now, that it is generally accepted that water is preferable.

Mr. YATES. Mr. McDade.

FIRE DETECTION SYSTEMS

Mr. MCDADE. How is that made, with early detection systems?

Mr. PERROT. Most of our new construction and our older buildings will be equipped with smoke and heat detectors and there is an item in the budget for this.

Mr. MCDADE. They are designed to get at the fire that is in incipient stages. They are persistently designed that way. I don't know if statistically or otherwise they function that well.

Mr. PERROT. Statistically I believe they work extremely well. Also statistically, we found that the incidence of automatic sprinklers going off accidentally, that is without a fire, is so small as to be inconsequential.

Mr. MCDADE. Is there redundancy in the first two systems?

Mr. PERROT. There is indeed redundancy.

Mr. MCDADE. I should use the word "contradiction".

Mr. PERROT. No, because smoke detectors and the heat detectors are more sensitive and generally can catch the incidence of fire more rapidly. When the head goes off a sprinkler it means that the heat is sufficiently high to fuse the link.

Mr. MCDADE. If you have a system in a museum environment that responds to the superheat of the air and gases and incipient stage, is it specific when the alarm picks it up?

Mr. PERROT. Yes, depending upon its sophistication, the electronic equipment permits specific pinpointing of each detector.

Mr. MCDADE. Can you protect your property with heavy reliance on these early detection devices rather than with a sprinkler system.

Mr. PERROT. Both methods are being employed in museums around the country now for areas that are extremely sensitive. The tendency is to have either an inert or loaded system and heat and smoke detectors. Generally speaking, now the use of sprinklers is accepted. We would prefer to have sprinklers that have dual action, that is a dry system which only go into action after the smoke detectors and heat detectors have given the alarm.

Mr. MCDADE. Is that what you use?

Mr. PERROT. That is what we plan in a few buildings, Mr. Chairman, but the problem is that it is much more costly and therefore we have generally gone to a wet system.

Mr. MCDADE. There is general agreement?

Mr. PERROT. I think that is an accurate statement.

Mr. MCDADE. Thank you, sir.

Mr. YATES. Mr. Lawton, will you tell Mr. McDade what that old Chinese expression is also?

Mr. LAWTON. For one penny of money——

Mr. YATES. No, no, Mr. Lawton, give it the color it deserves. What is the Chinese expression?

Mr. LAWTON. I fen ch'ien i fen huo which means for one penny of money you get one penny of goods. You get what you pay for.

Mr. YATES. Let this be off the record.

[Discussion off the record.]

Mr. YATES. Put this on the record.

OBLIGATIONS OF CONTRACTORS

Mr. POWERS. It becomes arguable in repair cases where circumstances change where you don't know until you start taking the roof off or removing a wall or something exactly the conditions you are going to have.

Mr. MCDADE. Isn't the commercial practice, even if you award the low bid, that you get a warranty. It is not just a general contractual fitness for the proposal document but a bonded warranty that for a period of a year——

Mr. POWERS. I believe so. I don't have the facts for the committee.

Mr. YATES. Take a look at his file before he turns it over to the committee and take a look at Mr. Perrot's contract.

Mr. POWERS. In addition to what Mr. Lawton said about being low bidder, it is said that Washington Government contractors depend on making their money on change orders, they hope to raise the price and also argue that they are not responsible for any of the problems that arose. So I think we are not alone in the kinds of problems that we are discussing this morning.

Mr. MCDADE. It is not just the low bidder, it is supposed to be lowest responsible bidder.

Mr. POWERS. It is hard to say that a contractor in advance is irresponsible, and there is also pressure from the Small Business Administration to take smaller and perhaps less experienced firms, and you don't know until too late if you made a good choice or not.

Mr. MCDADE. What program is that with the Small Business Administration?

Mr. POWERS. Under the small business set asides you are required to allocate or offer to minority and small business firms a portion of your contracts.

Mr. MCDADE. For a major contract you ought to have some idea.

Mr. POWERS. Mr. Peyton was saying that we were making up the list of firms which are reputable.

Mr. YATES. Mr. Perrot wants to say something.

Mr. PERROT. There is a 10 year guarantee on the roofs that will be put on the storage components. How tight the guarantee is, and how it is specified, I don't know exactly. I will have to find out and the information will be provided for the record.

[The information follows:]

METCALF & ASSOCIATES,
March 16, 1981.

SMITHSONIAN INSTITUTION,
Washington, D.C.
Attention of Mr. Paul Perrot, Director, Museum Programs.

GENTLEMEN: The Museum Support Center roof system is designed as an insulated roof membrane assembly (IRMA) over concrete roof decks. The roofing specification section of the construction documents provides for the provision and installation of

the waterproof sheet membrane, membrane flashing, expansion joints, insulation, precast walkway and terrace slabs and related installation materials as required in connection with concrete roof decks. All roof membrane shall be covered with a mortar-faced, styrofoam RM, insulation board. Each insulation board is torque and grooved to provide a continuous insulation diaphram, which is anchored at the roof perimeter and at the perimeter of all openings or penetrations.

The construction documents require that the roofing subcontractor(s) provide certain warranties with respect to their work. The specification states that "The roof membrane and flashing shall be warranted for 10 years by the membrane manufacturer and the roof insulation (including mortar-faced insulation) shall be warranted for 10 years by the manufacturer of the roof insulation. In the event the roofs fail to perform, the warrantor(s), at his (their) own expense, shall cause to be made the repairs or modifications to the roof assembly to the extent necessary to enable the roof to perform as warranted."

As with any roofing assembly, the success of this roof will greatly depend on the careful and thorough supervision and inspection of its installation.

Sincerely,

PHILIP E. TOBEY.

Mr. YATES. Judge Powers is going to tell us about the time he protected the Smithsonian.

LEAKS AT THE NATIONAL MUSEUM OF AMERICAN HISTORY

Now we return to the Museum of American History. Mr. Kennedy, are you free from leaks?

Mr. KENNEDY. No, sir.

Mr. YATES. I notice that you are having a few problems but you are not getting a new roof until 1984, are you?

Mr. KENNEDY. There are two sets of problems with us and one of them is the terrace on the north east corner which has leaked twice. That floods the hall of Maritime Enterprise.

Mr. YATES. Was this the flood that launched a thousand ships?

Mr. KENNEDY. Yes.

Mr. YATES. And burned the top of the castle?

Mr. KENNEDY. That is right. We wish that the lady had been present.

That process is under litigation, as the Judge has reported. So that is being dealt with through legal channels; that is, the deficiencies of the first process of repair are in the hands of counsel and they are being dealt with as a consequence of our having that contractual capability because it happened essentially within the construction period.

Mr. YATES. Why didn't counsel automatically get your construction contract? I don't understand this. Do you automatically get construction contracts?

Mr. POWERS. No.

Mr. YATES. Why shouldn't you?

Mr. POWERS. There are thousands of them. We have a very competent contracting office.

Mr. YATES. I would beg to differ with you, Judge. I don't know about the thousands of contracts that you have and I hate to increase the already mammoth job you have of supervising the Smithsonian activity but poor Mr. Lawton and Mr. Perrot are now coming up with major jobs, Mr. Kennedy is now coming up with a new roof in two years. We find that the history of the Smithsonian repairs, as I get it from the story told to me, is that you find yourselves in disputes with contractors as a rule rather than the exception.

Mr. POWERS. We have hundreds and hundreds of contracts each year.

Mr. YATES. Do you want to establish a limit? All right. Suppose they don't send you contracts for $100 or $200 but suppose you have a $300,000 contract sent to you, or you may pick the size of the contract.

Mr. POWERS. My answer would be that the problems that we are going to furnish for the record were not specifically problems with the contract itself, the legal framework.

Mr. YATES. But it is though, at least temporarily; at least we don't know whether the contract provides for a warranty. As you say you have, your implicit warranty but Mr. Perrot says his contract provides for a 10 year warranty. Now why shouldn't Mr. Lawton be provided with a 10 year warranty? I would expect if there were no change orders in Mr. Lawton's contracts, I would think they went right ahead. Were I a regent again, I would bring this up to the Board of Regents saying that this is the responsibility I think that the Smithsonian has to assume. You can't come back to the committee and say, look, we have to repair Mr. Lawton's roof again or we have to do this because our relationship with the contractor was not taken care of in the first instance. There may be some contribution that you can make to the welfare of the Smithsonian in this respect and I would urge you, and you, Mr. Ripley, that you might want to talk to him about this.

Mr. Kennedy, I broke off our conversation while you were in full flight.

Mr. KENNEDY. No, sir.

Mr. YATES. Had you finished?

Mr. KENNEDY. I think so, sir, yes.

Mr. YATES. Can you wait for two years before they work on your roof? You are not going to get your money for the roof according to this until 1984. You are going to be a good soldier?

Mr. KENNEDY. Yes, sir.

Mr. YATES. I will ask your friend the contractor why he can't. Mr. Peyton, why are you waiting two years for that. Is it because of lack of funds?

Mr. PEYTON. No, sir. Based on our survey of the roof and the nature of the leaks that we have heard about, we have felt that we didn't have the internal capability to deal with the repairs.

Mr. YATES. If you have the leaks, I don't understand why they have not been taken care of.

Mr. PEYTON. I believe——

Mr. KENNEDY. Excuse me. Let me try to respond to that.

Mr. YATES. All right.

Mr. KENNEDY. We described one set of leaks.

Mr. YATES. The leaks from the terrace.

Mr. KENNEDY. Those are being fixed and those were serious and they caused us trouble and those are being dealt with. The roof problem, while it is there, is not a present danger to our collections or to our personnel, it can be dealt with.

Mr. YATES. You can wait two years then?

Mr. KENNEDY. Yes.

Mr. YATES. All right. Apparently you don't have any other construction problems.

Mr. KENNEDY. As you referred to earlier, we are dealing with fire protection and spending a lot of money on that.

Mr. YATES. There is a great deal of work to be done in a fire protection plan and you have heating, ventilation and air-conditioning improvements that are going to cost approximately $2,230,000 unless you take care of it.

Mr. KENNEDY. Yes, that will do it for the next five years.

Mr. YATES. All right.

RESTORATION AND RENOVATION AT THE NATURAL HISTORY BUILDING

The Museum of Natural History, Mr. Fiske.

Mr. FISKE. As far as I am aware, the roof is sound. Work is underway in the West Wing and the problem there is being taken care of.

Mr. YATES [reading from 1981 hearings]:

The most important requirement of the building is continuation of the phased installation of fire detection and suppression systems."

That work is going on?

Mr. FISKE. Yes, sir.

Mr. YATES. All right.

The fire protection program, which also includes related architectural modifications, will continue steadily over the next five years. In the utility systems category, heating, ventilating and air-conditioning improvements are required in order to achieve energy conservation, to control temperatures and humidity, and to improve air circulation. Some of the projects planned in this category include a study of existing conditions and design for improvements, repair of the main cooling tower, and replacement of the HVAC control system and air handlers.

Is that going on?

Mr. FISKE. Mr. Peyton, can you answer?

Mr. PEYTON. No.

Mr. YATES. How about transformers that have to be replaced, when will you do that?

Mr. PEYTON. Sometime in the next two to three years.

Mr. YATES. Is there any danger if you don't replace them in the next year or two? What can happen with a transformer?

Mr. PEYTON. Well, if it is overloaded, there is a potential for failure.

Mr. YATES. Failure or fire?

Mr. PEYTON. Explosion that could result in fire.

Mr. YATES. Is that possible in this building?

Mr. PEYTON. We don't think so and we think two or three years would be time enough for action on it.

Mr. YATES. Then you go on to say:

Projects needed to protect the building envelope, some of which would also improve energy efficiency, include repointing and recaulking.

Is that going on?

Mr. PEYTON. No, sir, it is not.

Mr. YATES. Should it be going on?

Mr. PEYTON. That is one of the items that we have deferred.

Mr. YATES. For a million dollars?

Mr. PEYTON. Seventy-five thousand dollars, deferred until next year.

Mr. YATES. Because of the shift of the million dollars?

Mr. PEYTON. Yes, sir.

Mr. YATES. Well, what will happen as a result of the deferral? Will there be leaks through the walls or the outer wall?

Mr. PEYTON. That is a potential problem, but it has not been a serious problem up to this point.

Mr. YATES. Has that occurred in the building? Have you had seepage through your walls?

Mr. FISKE. The one place that leakage has occurred is in the stairwell on the north side of the old main museum building.

Mr. YATES. And Mr. Peyton knows about it?

Mr. FISKE. I am sure he does, it is visible.

Mr. YATES. Has it been repaired yet?

Mr. FISKE. I am not aware it has been repaired.

Mr. YATES. Has it been repaired?

Mr. PEYTON. No.

Mr. YATES. Wait until next year?

Mr. PEYTON. I have not seen it, but the internal maintenance staff can correct that.

Mr. YATES. Is that your only problem?

Mr. FISKE. As far as I know, sir.

Mr. YATES. "Projects needed to protect the building envelope, some of which would also improve energy efficiency, include repointing and recaulking, replacement of window locks and gaskets, and reglazing and repair of windows."

What does it mean when it says, "Projects needed to protect the building envelope, some of which would also improve energy efficiency?" What are the others?

Mr. PEYTON. I think those are major ones and at the moment I cannot think of any others.

Mr. YATES. Do you want to take a look or have somebody look at his building?

Mr. PEYTON. Yes.

Mr. YATES. Somebody put that line in this report, and when it is in a report the committee has to take cognizance of it, which does not mean you should not put it in the report but you and I are trying to arrive at some means of taking care of the Smithsonian properties.

"These and other requirements are estimated to cost $6.3 million."

What is the cost you have in your justification for this building? I don't remember a $6.3 million figure.

This says you needed $6.3 million a year ago. What is your figure now, has it gone up or down?

Mr. PEYTON. By deferring the recaulking project one year we, will have to increase the amount of the item.

Mr. YATES. Well, what is the cost going to be?

Mr. PEYTON. I believe the number that is presently in that report is accurate enough.

Mr. YATES. What figure did you give us for the budget for this year for this building, the Museum of Natural History?

Mr. PEYTON. We had $75,000 for the caulking project.

Mr. YATES. Only that you withdraw?

Mr. PEYTON. Yes.

Mr. YATES. And nothing else?

Mr. PEYTON. We deferred only $75,000. That is right. For fiscal year 1982, we are now requesting a total of $1,080,000 for the Natural History Building.

PLANNED PROJECTS THROUGH 1986 FOR THE NATURAL HISTORY BUILDING

Mr. YATES. Well, that is all for this year. Now what do you propose to do through 1986 to this building?

Mr. PEYTON. We are planning to spend approximately $2.2 million on HVAC.

Mr. YATES. When?

Mr. PEYTON. Over the next five years.

Mr. YATES. All right, $2.2 million.

Mr. PEYTON. For fire protection we are contemplating spending $1.9 million.

Mr. YATES. That is $4 million plus.

Mr. PEYTON. For the facade, approximately $1.2 million. For a variety of other projects we plan to spend an additional $2.1 million.

Mr. YATES. Is Mr. Fiske's building a stepsister to all the buildings?

Mr. PEYTON. No, sir, it is not.

Mr. YATES. Can you update your figures for the committee, please?

Mr. PEYTON. Yes.

[The information follows:]

CONDITION REPORT FOR NATURAL HISTORY BUILDING

(Update of Condition Report in Fiscal Year 1981 Congressional Hearing Record)

The Natural History Building was completed in 1911, and identical east and west wins were added in 1963 and 1965. In 1975 an interior court was filled in at three levels to creat additional space primarily for public use, bringing the total building area to 1,000,000 net square feet.

The most important requirement of the building is continuation of the phased installation of fire detection and suppression systems. The fire protection program, which also includes related architectural modifications, will continue steadily over the next five years. In the utility systems category, heating, ventilating and air conditioning improvements are required in order to achieve energy conservation; to control temperatures and humidity; and to improve air circulation, supply, and exhaust systems. Some of the projects planned in this category include a study of existing conditions and design for improvements and necessary replacements (the study will be initiated in fiscal year 1981); repair of the main cooling tower; and replacement of the HVAC control system and air handlers. Electrical and plumbing renovations are required in the attics and tunnels to replace deteriorated equipment and to remove equipment that is no longer used, and transformers must be replaced. Projects needed to protect the building envelope and to improve energy efficiency include repointing and recaulking, replacing window locks and gaskets, and reglazing and repairing windows. Modifications of space for exhibition purposes are planned, as well as modifications to improve accessibility for the disabled in staff and public areas. An upgrading of space for the central Smithsonian library also is planned.

These and other requirements are estimated to cost $7.2 million from fiscal year 1982 through fiscal year 1986, although some of these major projects will continue beyond fiscal year 1986.

REPAIR PROJECTS AT THE NATIONAL AIR AND SPACE MUSEUM

Mr. YATES. Now we turn to the National Air and Space Museum. When was this building opened? This building was opened in 1976 and here we are five years later. [Reading from 1981 hearing:]

The building's facade and terrace require a major program of repairs and improvements primarily in order to eliminate water leaks and intrusions. Corrective facade work is expected to include recaulking, repair of some of the marble stone and flashing, reinsulation of ductwork, and waterproofing of coping. Leaks are evident at all drains on the terrace and the pavers have cracked, chipped and settled as a result of heavy pedestrian traffic and weathering. Renovation of the terrace is expected to include reconstructing the waterproof membrane, upgrading other subsurface materials and replacing the existing pavers with a more durable material.

That is the concrete, isn't it?

Mr. PEYTON. Yes, sir.

Mr. YATES [reading]:

The building's electrical transformers are currently operating at near capacity, and some reserve power is needed. Improved access for the disabled is required in restrooms and exhibit areas, and additional offices must be constructed to provide needed staff space.

These and other requirements are estimated to cost $4.4 million.

Are you still standing by that figure?

Mr. PEYTON. Yes, sir.

Mr. RIPLEY. I think the popularity of the building was somewhat expected but somewhat underestimated in terms of the deterioration that would result from millions of people on that terrace over the years. There has been a wear and tear factor that I think it is fair to say that one could not really have anticipated.

Mr. YATES. Mr. Ripley, is there a Director for Air and Space?

Mr. RIPLEY. Yes, Mr. Hinners.

Mr. YATES. Is Mr. Hinners here?

Mr. RIPLEY. No, he is not. He had a personal conflict and is not here today. He knew he had to be out of town.

Mr. YATES. He is a Director and not an Acting Director?

Mr. RIPLEY. Yes.

Mr. YATES. Does anybody know the condition of that building? Mr. Challinor nods.

Mr. CHALLINOR. I am impartial.

Mr. YATES. All right. Now be objective.

Mr. CHALLINOR. The very heavy traffic as you walk over the terrace has indeed cracked many of the tiles.

Mr. YATES. What about the roof?

Mr. CHALLINOR. The roof is not in as bad shape as that of the Freer.

Mr. YATES. You say it is or is not?

Mr. CHALLINOR. It is not in terribly bad shape. The roof is in good condition as has been reported.

LEAKS AT THE NATIONAL AIR AND SPACE MUSEUM

Mr. YATES. Does it leak?

Mr. CHALLINOR. I don't believe there are any leaks now anywhere in the roof.

Mr. YATES. Were there some?

Mr. CHALLINOR. I believe these have all been fixed.

Mr. YATES. At your expense or the contractor's?

Mr. CHALLINOR. This was done by an internal group but I can double check on that. The problem is with the hung marble which is about two inches thick and hung by steel pins. The grain in the marble is differential; in other words, some of the grain in those marble slabs is tighter than other portions and when we have one of those really hard, horizontal rains, the rain actually goes through those portions of the marble sheeting where the grain is not as dense as on the other parts. The water then trickles through inside between the marble and the insulation and that in turn causes problems in staining the inside walls.

Mr. YATES. On the inner walls?

Mr. CHALLINOR. On the inner walls. Occasionally this gets through the inner walls and you can see it from the inside. When you see it from the inside, then you have to track it back through the system and find out the slab that is leaking.

Mr. YATES. How often does this happen? I know with the horizontal rains but how often are the horizontal rains?

Mr. CHALLINOR. Horizontal rains probably occur only once or twice a year at the most. I mean that is a guess and it varies from year to year.

Mr. YATES. Would a sealant on the outside help?

Mr. CHALLINOR. A sealant on the outside would probably affect the aesthetics or the color of marble. We are somewhat in a bind. Do you take all those marble slabs off and make a seal on the inside or do you try to cope with this on a day-to-day basis by trying to isolate the worst spots? That is a question of strategy and what money is available to handle it.

Mr. YATES. Did the architect and the engineers originally contemplate the breathing problem the walls had with the air conditioning?

Mr. CHALLINOR. Probably not. I can't answer the question in honesty.

Mr. MURTHA. The water goes right though the marble?

Mr. CHALLINOR. A hard horizontal rain will actually penetrate the marble. Remember, it is only about this thick and it is porous. It will actually penetrate through that marble sheeting. The marble was chosen to match the marble in the National Gallery. That marble, however, is structural marble—great big thick ones—and carries the load. This marble sheeting is merely a veneer, it does not carry any load. The load is carried by the vertical steel beams to which in effect the marble is glued or attached.

Mr. YATES. What can you do to treat that problem?

Mr. CHALLINOR. I think the best you can do is attack it from the inside where the leaks are worse. I do not foresee that the problem will ever completely disappear without removing the whole facade which I think everybody agrees is not a practical solution.

Mr. RIPLEY. Also, I think the sealers when applied on the exterior tend to be moisture creating on the inside because of the differential in temperature winter and summer between the air conditioning system and the exterior climate, and that has been the situation in the Hirshhorn and I am sure it is endemic all over Washington with these kinds of construction methods.

Mr. YATES. Can you identify the slabs which have the grain that is particularly susceptible to horizontal rain?

Mr. CHALLINOR. Normally on a close inspection you can by putting a ladder up and looking closely see where the grain varies and probably identify a good number of them. Whether you could get them all or not I could not answer that question, an expert would have to answer that.

Mr. YATES. Who would be an expert on the Tennessee marble?

Mr. RIPLEY. They are probably all dead. They had to open up the quarry for the East Wing. The East Wing is also quarried from there and for this building.

Mr. YATES. Is the East Wing marble facade true?

Mr. RIPLEY. Yes.

Mr. YATES. Do they have the same problem?

Mr. RIPLEY. I don't know. I have not heard about it.

Mr. YATES. David.

Mr. CHALLINOR. You remember when the East Wing was being built, Mr. Chairman, there were concrete and brick walls and the marble veneer was laid over what I thought was a rather attractive finish already made with concrete beams with brick in between them. This is quite a different structure from the Air and Space Museum which I might point out costs only about a third of that building.

Mr. YATES. Well, what can we do about it?

Mr. PEYTON. Our consultant will recommend a technical solution and make cost estimates with his report.

Mr. YATES. Does he know anything about Tennessee marble?

Mr. PEYTON. Yes, sir.

Mr. YATES. All right. How long will you take?

Mr. PEYTON. It will take a year, because we want to subject the building to a total weather cycle in winter and summer. The A/E has been engaged in testing and studying the building for approximately four or five months.

Mr. YATES. We have discussed the Renwick.

Radiation Biology Laboratory.

An amount of $50,000 is required to begin relocation planning, including a study of the Laboratory's long-range requirements and an exploration of alternative sites.

We can pass that, there has been no need to fix up that one.

REPAIR PROJECTS AT OTHER SMITHSONIAN BUILDINGS

How about the Astrophysical Observatory at Mt. Hopkins, Arizona, we have been worried about that?

Mr. RIPLEY. Do you want to speak on that, Dave?

Mr. CHALLINOR. We are now renting a converted schoolhouse near the base of the mountain. We have been told that the school board may want to sell that schoolhouse and what we are looking for now is a site to which our headquarters can move when current lease expires, I believe in 1985. We are now working on potential sites to which we can move and that is our main concern. We want to do our homework well ahead of time in case we cannot keep our headquarters building.

Mr. YATES. What about the castle itself? What needs to be done with the castle itself, anything?

Mr. PEYTON. We will soon award a contract to repair some of the slates that are missing and to do some other repair work.

Mr. YATES. Apparently that roof is in good shape.

Mr. PEYTON. No, sir. Slates are presently missing.

Mr. YATES. How many slates are missing?

Mr. PEYTON. I cannot answer the question.

Mr. YATES. Do you have water coming in?

Mr. PEYTON. Yes.

Mr. YATES. Is there nothing that can be done on a temporary basis other than putting the pails there? Can you put some kind of cover on the roof?

Mr. PEYTON. The gutter is stopped up, the flashing needs to be recaulked, and it requires sending repairmen to the site and having them do that kind of work.

Mr. YATES. The last time you wanted $2.6 million for the Tropical Research Institute. Do you still want that or is that going full blast at Barro Colorado Island?

Mr. CHALLINOR. We are now looking for money to build a dormitory there which is not in this budget. The National Science Foundation was asked but has turned it down.

Mr. YATES. So you are going to keep looking?

Mr. CHALLINOR. We will keep looking.

Mr. YATES. What about the Silver Hill buildings?

Mr. PEYTON. The principal work that has been required for the Silver Hill buildings has been the roofing work. That has been described and is generally well in hand. We also have buildings occupied by the Museum of American History that they are seeking to upgrade on a selective basis; to improve their capability to store and preserve artifacts for that particular museum.

Mr. YATES. At the 1980 hearings you said you wanted $2 million for the Freer. Has that gone by the board now?

Mr. PEYTON. We have awarded the first contract for a new heating, ventilation and air conditioning system, and there are some follow-on phases.

Mr. YATES. But that is not going to cost $2 million?

Mr. PEYTON. No, sir, it will not.

Mr. YATES. Maybe that was for the connection.

Mr. PEYTON. No, sir.

Mr. YATES. Here I am with Mr. Blitzer talking about $2 million.

Mr. PEYTON. We are planning on spending money in the Freer as the Quadrangle project moves forward, but the connection money is included in the Quadrangle project.

Mr. YATES. So that has gone by the board temporarily.

In 1980 Mr. Lawton said [reading]: "Skylight repairs are necessary to eliminate interior limestone stained by leaking water must be replaced." Has that limestone been replaced?

Mr. PEYTON. No, sir, it has not.

Mr. YATES. Will it be?

Mr. PEYTON. On a deferred basis, yes.

Mr. YATES. Has Mr. Lawton asked for the replacement of that and you turned your back to him?

Mr. PEYTON. I believe it is a matter of priority, sir, replacing the stained limestone.

Mr. YATES. How many of your limestones have been stained, Mr. Lawton?

Mr. LAWTON. It is the area immediately outside the auditorium, Mr. Chairman. I would guess it would be in the neighborhood of 10 limestone sheets.

Mr. YATES. How apparent is this?

Mr. LAWTON. You are quite aware of it when you walk in and you see the rivulets that have run down and left stains.

Mr. YATES. I think I will come over and take a look at it. Has better lighting in public areas. been installed?

Mr. PEYTON. That is in progress now. We have a request for the current year to continue replacing the lighting fixtures that are located in the halls and corridors.

NATIONAL AIR AND SPACE MUSEUM TERRACE

Mr. YATES. Let's go back to Mr. Challinor again. The National Air and Space Museum, apparently in 1980 you were a little more concerned than now. This reads.

Many blocks of stone cladding on the building are allowing the intrusion of moisture through seams of softer stone strata which have been dissolved by the action of wind and rain.

Is that bad?

Mr. PEYTON. No, sir, I don't believe it is what I would call critical.

Mr. YATES. If the softer stone strata had been dissolved, should it not be replaced?

Mr. PEYTON. Not in this instance. The stone in the facade does not function to hold the building up.

Mr. YATES. Are there places where the softer stone strata have been dissolved which are not potholed?

Mr. PEYTON. Not in that sense.

Mr. YATES. Nobody sees them?

Mr. PEYTON. I believe that probably out of a thousand people who might look at it perhaps one might notice it.

Mr. YATES. That one does not happen to be a part of the Smithsonian, right?

Mr. PEYTON. I don't understand that, sir.

Mr. YATES. "The terrace paving block at street level is cracking and disintegrating." Now that is terrace paving block. Is this the concrete?

Mr. PEYTON. Yes, precast concrete squares.

Mr. YATES. Then you say, 'Its repair is critical to prevent moisture from penetrating the waterproof seal and eroding the steel framing below." In view of your statement that its repair is critical, what has been done to repair it?

Mr. PEYTON. We have worked out a way to make some temporary repairs ourselves in what appear to be the most critical spots; so, in fact, some of the cracked pavers have been removed and replaced.

Mr. YATES. How much of this exists? How many of the terrace paving blocks have been cracked and disintegrated?

Mr. PEYTON. I could only guess at the number.

Mr. YATES. What area? All along an area?

Mr. PEYTON. Three principal locations.

Mr. YATES. It must be at the entrance.

Mr. PEYTON. One location is on the east end of the building, which served as the access for the major equipment that was loaded into the building when the building was first occupied.

Mr. YATES. That broke some of it?

Mr. PEYTON. Yes. The other areas are at the two main entrances on both the north and south side of the building.

Mr. YATES. How far toward the street does this condition exist from the doors to the steps?

Mr. PEYTON. On a random basis it occupies the major portion of that area.

Mr. YATES. It is rather a significant area, isn't it?

Mr. PEYTON. Yes, it is. In terms of percentage of the square footage of the entire terrace, it is probably 10 or 15 percent.

SMITHSONIAN INSTITUTION BUILDING

Mr. YATES. Now we talked a minute ago about the Smithsonian castle itself. This just says, "Presently, the building lacks adequate smoke and fire detection devices." Is that still true?

Mr. PEYTON. Yes, sir, it is.

Mr. YATES. "Power transformers must be replaced and the old units carefully disposed of in conformance with environmental restrictions."

Is this being done?

Mr. PEYTON. It is yet to be done. The transformers contain a liquid material.

Mr. YATES. How do you dispose of that?

Mr. PEYTON. The prescribed method is to put it in a special incinerator to burn.

Mr. YATES. The usual method was to throw them in the lakes or streams.

Mr. PEYTON. That used to be true.

Mr. YATES. I think we have come to the end of this chapter; at any rate we come to the end of the interrogating part of this chapter. We lose track of all this from year to year but I assume that we won't from now on because we are interested in putting the Smithsonian back into the condition it should be.

NATIONAL SYSTEMATICS LABORATORY

I want to ask Mr. Challinor a question. Somebody called my attention to the National Systematics Laboratory that NOAA has within its jurisdiction. Is this going to come in?

Mr. CHALLINOR. We understand that this does not appear in the Department of Commerce budget for 1982, it will be terminated.

Mr. YATES. Is this a laboratory that ought to come in?

Mr. CHALLINOR. It is a laboratory consisting of nine people and a budget of about $300,000 that has worked at the Smithsonian. We have furnished them space for the last several decades.

Mr. YATES. Do you mean within the Smithsonian?

Mr. CHALLINOR. Within the Smithsonian.

Mr. YATES. Within which building?

Mr. CHALLINOR. The Museum of Natural History. It is a laboratory where people are experts in telling one kind of fish from

another and they have worked for NOAA as a part of the Bureau of Commercial Fisheries.

Mr. YATES. How important is the work?

Mr. CHALLINOR. It is very important for the kind of work we are doing. It complements it exactly. They concentrate primarily on commercially valuable fish whereas those at the Museum of Natural History concentrate on all known species of fish.

Mr. YATES. Would you recommend that this laboratory be continued?

Mr. CHALLINOR. Well, it is very useful for our purposes and we feel that the kind of work they are doing is very important.

Mr. YATES. If the funds were provided in the Smithsonian budget, would it be helpful to your work?

Mr. CHALLINOR. As long as it was not competing with our existing programs, yes, sir, Mr. Chairman.

Mr. YATES. Does it necessarily have to compete with your existing program?

Mr. CHALLINOR. If we were told to take it, it would, yes.

Mr. YATES. All right.

Mr. RIPLEY. It is not an overlapping activity though, is it?

Mr. CHALLINOR. It complements what we are doing.

Mr. RIPLEY. It is a very complementary activity.

Mr. YATES. At this point I think you need some complimenting.

Mr. RIPLEY. One of the terrible problems in all this business of knowing about what kinds of animals there are that are subject to queries by the public or by Government agencies is knowing who is going to be able to identify them. You cannot identify them and you cannot decide whether the pesticide is any good, you cannot decide whether the program of environmental control is any good with insects as well as with fish very notably. It is an area in which our Government is largely interested in the fish, I think.

MEDICAL ENTOMOLOGY PROJECT

Mr. YATES. Mr. Challinor, on page 25 of the justification one of your contracts relates to supporting a medical entomology project that conducts basic biosystematic research on the effects of arthropods, such as mosquitoes, which are of military medical significance overseas. Can you tell us about the importance of that project?

Mr. CHALLINOR. That project, Mr. Chairman, has been going on under a contract with the Army Medical Service for 20 or more years. We have in the Natural History Museum a large collection of insects, including mosquitoes, and particularly in 1960 when troops were going into Southeast Asia and were being bitten by mosquitoes and thereby becoming infected with new strains of malaria, it was very important for the Army to understand the taxonomy of mosquitoes, or how one mosquito differs from another.

This particular project is under contract with the Army Medical Service and a team of scientists or taxonomists and illustrators have spent the last 20 years trying to distinguish these mosquitoes and their life cycles, how they look and how to tell a noxious mosquito from an unharmful one, where they live and what diseases they might carry. They work at the Museum of Natural

History because there we have the collections and the apparatus to allow people to study them.

Mr. YATES. How do you study what diseases they might carry? You are not set up for that, are you?

Mr. CHALLINOR. No. We are set up to identify the different kinds of mosquitoes.

Mr. YATES. Right.

Mr. CHALLINOR. Also, where they live and what their life cycles are. When somebody is bitten by a mosquito while climbing at the top of a tall tree, we can often isolate the kinds of mosquitoes that live in these tree tops as opposed to the ones that live in the cities or on the shores of lakes. We advise the Army or anybody else for this is not restricted research and the information is open to everybody.

Mr. YATES. Do you work with the Institute of Contagious Diseases in Atlanta in connection with this?

Mr. CHALLINOR. Not directly. The results that we produce from our research are sent down there to help the medical experts develop antitoxins or antibodies to these mosquitoe-born diseases. That is not our job. Our job is to identify the mosquitoes.

IDENTIFICATION OF SPECIMENS FOR THE BUREAU OF LAND MANAGEMENT

Mr. YATES. Now you have a BLM project, too. You work with BLM in connection with the outer continental shelf biologic sampling program.

Mr. CHALLINOR. The Bureau of Land Management, as you know, is responsible in large measure for leasing federally owned land offshore and in the process of surveying these lands for possible lease they accumulate a great many marine samples, particularly from marine invertebrates. These are animals that live on the floor of the sea. They accumulated this collection and now need a lot of help to find out the names of these animals. We are advising the BLM what these animals are.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

Mr. YATES. Then we turn to your Astrophysical Observatory. Last year you told us about the "big-bang" theory. There was an announcement within the last two weeks of a report which scientists felt substantiated the theory and that the bang occurred perhaps 17 billion years ago, plus or minus a billion years. Has that work been completed?

Mr. CHALLINOR. No. This will go on for many more years, Mr. Chairman. It also will continue when the large space telescope is launched in the shuttle, and God willing it will happen relatively soon. That is an ongoing project.

Mr. YATES. We are working with NASA on that.

Mr. CHALLINOR. Yes. The bulk of the funding for this bureau comes from NASA under contracts. You will see on page A–26 at the top there is a total of 367 people working there at a total of $21.2 million of which $13 million is Federal grants and contract money.

Mr. YATES. Now what about the multimirror telescope.

Mr. CHALLINOR. That is exceeding our expectations considerably. Seventy percent of its time is now devoted to scientific observation, the balance of 30 percent is spent working on engineering and clearing up the bugs that are inevitable in a new system. The resolution is now down to half an arc second which means that you could spot on the moon, were you to use it for such purpose, a building the size of the Pentagon which is roughly a half a mile across.

Mr. YATES. Your justification says modern astronomy results in part from its diversified approach to research and so forth. Are you the leader in this field?

Mr. CHALLINOR. We believe we are and particularly in x-ray astronomy where most of the experiments that have been conducted by satellites in space have been designed by people from the Smithsonian. That is what we call our high energy program.

Mr. YATES. High energy astrophysics?

Mr. CHALLINOR. Yes.

Mr. YATES. On page A-27 you also describe your atomic and molecular physics, optical and infrared astronomy, planetary sciences and radio/geoastronomy. How do you keep track of all these things?

Mr. CHALLINOR. You run fast.

Mr. YATES. If you don't run, you are in trouble, right?

Mr. CHALLINOR. Yes.

Mr. YATES. Solar and stellar physics and theoretical astrophysics. Who are the others in the field?

Mr. CHALLINOR. The other leading institutions doing this kind of work are——

Mr. YATES. Is Harvard one?

Mr. CHALLINOR. This is a cooperative venture with Harvard. I would say Princeton and Cal-Tech in California where the Jet Propulsion Laboratories are located. There are two or three others but I would say Princeton and Cal-Tech are two and MIT would be our other major competitor.

Mr. YATES. Are there foreign operators?

Mr. CHALLINOR. There is the European Space Agency which is a consortium of European research institutes. I would say that the universities in Europe are not up to the same level as our universities. They conduct research in quite a different fashion; instead of going through universities they generally have special government financed research institutions.

Mr. YATES. Can you break down your requested increase of $139,000? There is no breakdown in the justification for it. You can do that for the record.

Mr. CHALLINOR. You are looking at what page, Mr. Chairman?

Mr. YATES. Well, I am looking at——

Mr. CHALLINOR. We are asking for $366,000 total under the amended request.

Mr. YATES. I was referring to the Carter OMB report but I guess that is obsolete now, isn't it?

On page 26 of the justification, the proposed adjustment of $515 thousand has been reduced. We just had the reduced figure without the breakdown.

Mr. CHALLINOR. The reduced figure comes to $366,000.

Mr. YATES. Would you review your justification and supply for the record how you will allocate that sum?

Mr. CHALLINOR. I will, Mr. Chairman.

[The information follows:]

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

ALLOCATION OF REQUESTED INCREASE

The requested increase of $366,000 will be allocated as follows:

Necessary pay	$51,000
Inflation	157,000
Langley-Abbot program	50,000
X-ray laboratory and test facility	61,000
Vehicle maintenance	30,000
Safety and fire protection training materials	9,000
Multiple mirror telescope tours and vehicle maintenance	8,000
Total	366,000

MULTIPLE MIRROR TELESCOPE

Mr. YATES. How important is it that your MMT tours continue?

Mr. CHALLINOR. This is important for us because of public relations with the local community. As you know, southern Arizona and particularly the area around Tucson has an ever growing population and as they drive by the mountain they can see the telescope on top and we are bombarded with requests from citizens to go up. Citizens have paid for the bulk of this telescope and we feel we have an obligation to let them come up and see it.

Mr. YATES. Which citizens have paid for the bulk of it, the citizens in Tucson?

Mr. CHALLINOR. All of us, including the people who live in Tucson and environs.

What we are seeking here, Mr. Chairman, is a bus to take the citizens and a driver up to the top of the mountain. The road is not really safe for private cars, it is unpaved and it is about 18 miles from the road head to the top of the mountain.

Mr. YATES. Well, if you don't fix the road, then you don't have the tours, do you?

Mr. CHALLINOR. You have tourists going up anyway and we worry about them getting stuck and then we have to take a lot of time going down to save them.

Mr. YATES. What is the status of your proposal for NASA tracking?

Mr. CHALLINOR. The NASA tracking contracts should be put out for bid this summer, probably in August. They propose to combine all their satellite tracking operations. The Smithsonian has had a large portion of this but not all the tracking. We anticipate submitting a proposal to NASA when this request for proposals comes in around August. It would be almost another year before that is acted on and for us to know whether or not we would be the successful applicants.

Mr. YATES. How much money do you get from NASA?

Mr. CHALLINOR. As is shown here on page A–26 where it says in the last column on the right $14.6 million, that is primarily all NASA contracts.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Mr. YATES. You were telling us about killer bees last year. Are you still worried about killer bees?

Mr. CHALLINOR. We are still working on that project.

Mr. YATES. Are you working to stop them from moving north?

Mr. CHALLINOR. I understand that they are moving quickly and we are studying whether or not the jungle barrier that exists in eastern Panama from about 50 miles east of Panama City to the Colombian border will serve effectively to keep them from coming into Central and then into North America, I don't know. They are now anticipated to be about a year away of getting to western Colombia.

Mr. YATES. You want a program increase of $128,000. How are you going to allocate this increase? Do you want to put that in the record, David?

Mr. CHALLINOR. Mr. Chairman, we are requesting a program increase of $113,000.

Mr. YATES. That is right. It is below the Carter increase. Put the breakdown in the record.

[The information follows:]

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

BREAKDOWN OF REQUESTED INCREASE

The breakdown of the $113,000 requested program increase follows:

Publication support	$37,000
Buildings and facilities management	26,000
Vehicle, boat, and marine equipment replacement	50,000
Total	113,000

TROPICAL RESEARCH

Mr. YATES. Who coordinates the government deforestation study?

Mr. CHALLINOR. That is being done by a committee that is called together by the Department of State but consists of members from various government agencies, including obviously the Department of Agriculture's Forest Service and those other agencies which are concerned. AID is another group coordinating its work with the State Department since deforestation is a big international problem.

Mr. YATES. In the statement you say unfortunately the tropics are little understood having received little attention from scientists in spite of the fact that human population is growing at a faster rate in this region than anywhere else. This growth was threatened before they have been studied adequately and funds must be derived to protect this heritage of tropical diversity.

What do you mean by that?

Mr. CHALLINOR. Well, those countries that can afford to do basic research mostly are located in the north temperate zone. Those countries that are located in the tropics have not really been able to afford the luxury of sending scientists out to do basic research such as trying to name the trees. The tropics are changing faster than any other part of the world merely because more people live there and in more crowded conditions. What we are searching for

now are mechanisms to help train tropical scientists to work with people from north temperate climates to understand what plants and animal still are there before they are lost, before the forest is chopped down.

RADIATION BIOLOGY LABORATORY

Mr. YATES. Are you still going to spend the money for the spectrophotometer?

Mr. CHALLINOR. As is explained here, Mr. Chairman, on the bottom of page A–41, we received $50,000 in fiscal 1981 for the spectrophotometer. We explain at the bottom of that page and the top of the next page the next piece of equipment we plan to buy in 1982.

Mr. YATES. Let's come back at one instead of one thirty. I will then turn to the Air and Space Museum and maybe we can finish up a little early.

AFTERNOON SESSION

Mr. YATES. The hearing will come to order.

NATIONAL AIR AND SPACE MUSEUM

There is a new budget, the so-called "Reagan Budget". I want to ask whether it provides enough funds for carrying on the operations of the Air and Space Museum as it is currently operated.

Mr. CHALLINOR. Yes, we can operate. I want to emphasize that in order to stay within the new Reagan budget we had to give up six positions. These six positions were all vacant at the time, but gave up six positions and their salaries from our base.

Mr. YATES. What positions were they?

Mr. CHALLINOR. Those were positions I furnished for the record yesterday. I have a long list here. I refer you to this sheet which was submitted for the record yesterday.

Mr. YATES. How many of your exhibits in the Air and Space Museum require payment for admission?

Mr. CHALLINOR. There is no admission charge except for the two movies and the spacearium show. One movie is called "The Living Planet" and the other "To Fly". All the rest of the museum is free of charge unless you come by automobile, for which you are charged to park.

FILMS AT THE AIR AND SPACE MUSEUM

Mr. YATES. How much did the film cost you?

Mr. CHALLINOR. One dollar for adults and 50 cents for children.

Mr. YATES. No; I asked how much you paid for the film.

Mr. CHALLINOR. The first film cost $750,000. The second film cost $1.2 million. The third film, for which we are negotiating at this time, we estimate will cost just under $2 million.

Mr. YATES. I thought the film was paid for by a corporation.

Mr. CHALLINOR. Yes. The first film was paid for by Conoco. The second film was paid for by Johnson's Wax. We are negotiating on the third film. I am not sure we have quite completed negotiations

to see whether Conoco will come through and donate the third film.

Mr. YATES. What happens to those films? Do they belong to you or to the corporation?

Mr. CHALLINOR. The films belong to the corporations who grant us one year's exclusive use. Beyond the first year, the corporations may grant permission for the showing of the films in non-commercial instances, deleting the Smithsonian's name.

Mr. YATES. What do you do with them? Do you keep them on file? Do you allow others throughout the country to see them?

Mr. CHALLINOR. Right now we are showing the two 70 millimeter films, both the first and second one; 16 millimeter copies of these films have been made and are available to other organizations from the sponsoring corporation. Obviously they are not as spectacular as the big one.

Mr. YATES. "To Fly" was the first one. "The Living Planet" was the second one. What will the third one be?

Mr. CHALLINOR. It will deal more with airplanes than the second one. I am not even sure whether we have actually picked a title for it as yet.

Mr. YATES. Why do you need this if you have "To Fly"?

Mr. CHALLINOR. We find there was a whole cadre of people who come back and see these over and over again. We feel every two or three years we ought to add a new film. That will be about the rate at which we will change them.

We do not anticipate ever to stop showing the original films. We will just give the audience a wider choice of films, particularly with aviation, as you are aware, where advances are proceeding at such a rapid pace, that we must keep the films up to date.

Mr. YATES. I assume the film explains to the public how an airplane stays in the air?

Mr. CHALLINOR. Yes, sir.

Mr. YATES. Next is the Chesapeake Bay Center for Environmental Studies.

INCIDENTS OF THEFT AND VANDALISM

Before I get to that, do you have any problem with theft or vandalism at the Air and Space Museum?

Mr. CHALLINOR. It has been very minimal. We get an occasional airplane scratched and things like that. Because the objects are pretty big there is not too much opportunity to steal things.

Mr. RIPLEY. Museum records show that when a museum is tremendously crowded the incidence of theft or pilfering and vandalism is cut down considerably.

Mr. YATES. Really?

Mr. RIPLEY. Yes. I think this has been demonstrated in European and other museums; that is, when museums are crowded there is less possibility of this kind of problem.

Mr. YATES. Whatever happened to the snuff box that you lost?

Mr. RIPLEY. We still do not know. It has not turned up. It was such a specialty item that chances of its showing up in the trade, I would say, are very limited.

Mr. YATES. What are the chances of recovering possession of it? What was the result of the Georgia O'Keeffe case?

Mr. POWERS. There were three decisions. The first two went for O'Keeffe and the last one found, on the basic legal issue, for the owner who was a dealer and who had gotten the paintings from several other people.

It was sent back for further trial on some of the issues and the case was settled by the parties.

Mr. YATES. What is the status of the law? Is it unsettled?

Mr. POWERS. The judge's decision went a long way toward improving the law for the benefit of those who receive stolen property. It is a complicated matter.

Mr. YATES. There should be a reasonable statute of limitations, should there not?

Mr. POWERS. In this case, O'Keeffe had knowledge of the theft from the time it occurred. They had notice of it and did nothing about it for 30 years. We would not be bound by the statute of limitations until the day we discovered where the property is.

Mr. YATES. Just as you do on repairs?

Mr. POWERS. Yes.

PHASED PROGRAM OF REPAIRS AND RESTORATION

Mr. RIPLEY. I think we left the question of repairs as of this morning a little up in the air. I do not feel we really had an opportunity to remind this committee and to point out the degree to which over the years we have been developing the record on our concern about renovation.

You will see from the record, I am sure, that we began supporting the concept that we needed to have a phased program of repairs and restoration for these buildings at least three, if not four, years ago.

We have within our five-year prospectus an outline of nearly $52 million phased over the years. In last year's budget, that is the budget of 1981, we had $500,000 removed from the budget in conference. The Senate removed it and your committee agreed.

This year there has been a further excision. However, we carried forward to 1986 with a phased program, and, in spite of the fact that here and there we might have a leak, we can amply demonstrate on the record that we have not been neglecting our buildings.

I am aware that in Washington in general, and with other agencies and with major bureaus, there is a question of concern about construction problems and the followup. I am aware, also, that we have amply demonstrated over the years that we are the prudent conservators of very old buildings, in many cases historic buildings, and we are doing our very best.

I would hate to see anything lie on this record to imply that we have a pressing need at this time for things that we have been letting go, trying to put out brush fires which are building up, and things of that sort.

Please allow us to maintain our tradition of prudent care and integrity in the maintenance of the collections and the buildings in which they are housed.

Mr. YATES. The record will show what your record of prudence, care and diligence is. I read to you from reports of the Smithsonian

itself made to this committee in the hearings of two years ago, in 1979 when we first started.

This morning, when we discussed Renwick, I must say I was somewhat surprised that over the period of two to three years, two years we will say, the Renwick work had not yet begun.

Mr. RIPLEY. I think the Renwick work has been going on. We brought up the subject before this committee ourselves a number of years ago, emphasing our concern and understanding that this is a continuing and long-term program.

Mr. YATES. The record will speak for itself. I must say in all candor, however, that I am not impressed by the degree of care regarding followups, for example, when the Freer Gallery has a new roof put on and it still leaks. In that situation there is something wrong either with the contracting or with the inspections or with the followup. That is a brand new roof.

Mr. RIPLEY. I am perfectly willing to admit we have these kinds of foul-ups in followups. However, I think our record will stand, and I will stand by it myself personally.

Mr. YATES. I am not asking you to stand by it personally. I am asking you to correct it. You want the same kind of Smithsonian that I want. I am trying to push you.

If you tell my committee that you need money to do these things I will try to get you the money to do these things and to put those buildings in shape.

Mr. RIPLEY. We have amply demonstrated our budget needs. We have them in the prospectus. We lost a half million dollars last year. We were able to make do without it. Nothing broke down. Nothing burned up in the process. We believe we are on track, Mr. Chairman.

Mr. YATES. We will leave the record at that. However, I would still insist upon the followups on repairs that we talked about this morning.

Mr. RIPLEY. I could not agree more. Let us follow up on the repairs. Let us be even more prudent than we have attempted to be in the past.

Mr. YATES. All right.

CHESAPEAKE BAY CENTER

Chesapeake Bay research is next. Would you place in the record the material showing how the $849,000 was allocated between the upland ecology, watershed studies, estuarine ecology, and education and public information programs?

Mr. CHALLINOR. Yes, we will.

[The information follows:]

Chesapeake Bay Center for Environmental Studies—Allocation of fiscal year 1981 base

Administration	$167,000
Facilities management and protection	218,000
Education and public information	113,000
Environmental research:	
Upland ecology	[1] 137,000

Watershed studies	[1] 92,000
Estuarine ecology	[1] 122,000
Total	849,000

[1] Includes prorated share of research staff salaries (upland ecology $125,000, watershed studies $42,000, estuarine ecology $114,000) and research support.

CHESAPEAKE BAY CENTER REQUESTED INCREASE

Mr. YATES. How do you propose to use the $50,000 for watershed monitoring in 1981?

Mr. CHALLINOR. May I refer to Mr. Sullivan, the Director of the Bureau, to answer that?

Mr. YATES. Yes.

Mr. SULLIVAN. Mr. Chairman, we have reduced the number of monitoring stations from 15 to 3 because of our receiving only $50,000 in this current year. That money has been used to employ, on a temporary basis, a person who served to collect samples from the three monitoring stations and a person to analyze nutrients in the laboratory and related laboratory costs.

Mr. YATES. What about the replacements for the next fiscal year? What vehicles are you replacing among sedans, trucks, tractors, and so on?

Mr. SULLIVAN. We are replacing a 1972 Ford pickup truck and making repairs to a research vessel and acquiring a new Boston Whaler.

NATIONAL AQUARIUM

Mr. YATES. Let's go to the National Zoo, page A-54. You have several new animals.

Mr. REED. Yes, our guest Chia-Chia, the London Panda, is in the news but we have 2,499 other animals of many different species.

Mr. YATES. Mr. Ripley described yesterday a proposed venture into aquatic animals.

Mr. REED. Yes.

Mr. YATES. There is a story in this morning's paper about the funds being cut off for the National Aquarium. Did you read it?

Mr. REED. Yes.

Mr. YATES. I think the amount is $200,000, actually it is $286,000. Are you familiar with the Aquarium?

Mr. REED. Yes, sir. I have been for many years.

Mr. YATES. I have not been there myself for many years. I do not remember what it looks like. Should it be maintained and continued?

Mr. REED. In my opinion it should not be maintained in its present condition and in its present physical location. The construction we will be asking for is for the Aquatic Vertebrate House, an exhibit which will be an ecological exhibit of fresh and salt water ecosystems and the animals, plants and other living creatures associated with water.

There will be smaller tanks for fish, invertebrates and reptiles which relate to the theme we are putting forward. We are not thinking of a traditional aquarium. We think we will have a very exciting and interesting exhibit.

Mr. YATES. Are you taking over the National Aquarium?

Mr. REED. No.

Mr. YATES. What should we do with the National Aquarium, if anything? What can you do with it? Can you keep it where it was in the Department of Commerce?

Mr. REED. I would not want to keep it in the basement of the Commerce building. I think that is a bad location for it.

Mr. YATES. Nobody ever sees it there, do they?

Mr. REED. Not as many people as there are tourists in Washington. I think eventually the National Aquarium's function here in the city of Washington will be met by the exhibit that we are planning, but not with the traditional series of fish tanks that they have had in the National Aquarium for so many years.

A NEW PHILOSOPHY IN KEEPING MARINE ANIMALS

Mr. RIPLEY. I gave you a brief outline on yesterday of the coral reef exhibit in the Museum of Natural History. I think I emphasized that point, that is, that there is a new philosophy about keeping animals in marine condition which is not current in old-fashioned aquariums.

We find this in the Shedd aquariums and others as well. What we are trying to do is to make a breakthrough and sort of an adjustment in the atmosphere of both the air, water, and the animals themselves which would allow them to live for long periods of time.

Aquariums tend normally to have a turnover which we cannot afford today scientifically speaking, a turnover of animals because they die in these tanks. What we want to do is to have a self-perpetuating mechanism where animals will live, flourish, and perhaps even breed, as well as the plants.

This is a different objective, and it is in that sense difficult to call it even an aquarium. It is a kind of ecological environment where animals are supposed to flourish and continue to exist, the same kind of thing the zoo has been trying to do with its delicate animals.

Now in these days, when you cannot afford to buy 10 more reptiles, 10 more fish, or whatever it is, the way the zoos used to be in the old days in this country, changes are required.

Mr. REED. That is true.

Mr. RIPLEY. It is really not our bag, so to speak, that the Smithsonian is in the aquarium business as aquariums are defined in the old style.

Mr. YATES. Do you yet know the kinds of fish you will have?

Mr. RIPLEY. We have plans for it.

Mr. YATES. I want to get an example of the types of fish you propose to keep.

Mr. RIPLEY. Fresh-water fish.

Mr. REED. We plan to show three ecological zones—tropical arctic, and temperate—both fresh and salt water. There will be seven major ecological exhibits with water including fish, mammals, birds, and where possible reptiles. There will be at least forty smaller supporting exhibits showing aquatic life forms relevant to the seven major exhibits but which cannot be exhibited in the main exhibits for reasons of size or sociability.

Mr. YATES. Will you have manatees?

Mr. REED. Yes, in the tropical freshwater ecosystem exhibit, demonstrating the lower forms of aquatic animal life.

Mr. YATES. How will you do it? Will you have a series of ponds?

Mr. REED. A series of tanks. If I may show you the sketches, Mr. Chairman.

PLANS FOR THE AQUATIC VERTEBRATE EXHIBIT

This is a plan of the building. There will be an introduction of the corals, sea anemone, sponges, and very small invertebrate animals. We will explain the zoological relationship of these living animals to aquatic life.

The visitor will come into this area and see a South American riverbank with vegetation in the background trees, plants, material of this type. This will show in the background here.

In the water there will be manatees and compatible fish such as the arapaima and some turtles.

In this next area there will be marmosets and various kinds of birds in this land area. There you will see a slice of life in a tropical river ecosystem.

Mr. YATES. Talking about a slice of life, where will you put the piranhas?

Mr. REED. This series of tanks here shows those animals that cannot live in a social group with other types. Piranhas are only social with other piranhas. They cannot live with other fish or with man. They would be in a tank here. The archer fish of Southeast Asia would be in this tank, demonstrating a tropical, freshwater Asiatic fish. There are a number of other tropical fish that would not be in the major group but would be over here in this supporting group.

Mr. YATES. "Over here" refers to what?

Mr. REED. The river bank scene, the ecological scene of the river bank.

Mr. YATES. All right.

Mr. REED. On this side there would be the supporting cages where we have poison arrow frogs, snakes, spiders, and so forth, which are also part of the ecological scene but which cannot be well demonstrated in such a large thematic exhibit.

On the other side we show a tropical salt-water scene. You get underwater viewing and on this side you have underwater viewing for the manatee, fish, and animals living in the river scene. Up these stairs you get surface level viewing of the fresh and saltwater eco-exhibits.

Passing the next area of cold aquatic life, we see a freshwater northern stream, a trout stream with associated plants, birds, and small mammals. I would hope to have the dolly varden trout, because it is a beautiful, striking animal with a large graceful dorsal fin.

On the other side there would be a seabird cliff. These birds are very exciting because of their locomotion underwater. They actually fly underwater. They are very interesting to watch as they fly underwater.

Passing the next area of cold aquatic life as we surface up the circular ramp to the second level cold water exhibit, we come to the large penguin exhibit.

We have not had penguins in the National Zoo since 1961.

Mr. YATES. Is this open air?

Mr. REED. No, this is a glass-fronted fresh and saltwater exhibit. You will be on a standing level looking directly at the water as if you were at the edge of a boat or a pier.

However, in the center area it must be glass-fronted because of environmental control.

Mr. YATES. It is glassed?

Mr. REED. Yes, glass-fronted.

Mr. YATES. But no building?

Mr. REED. All of these exhibits are in a building.

Mr. YATES. This is all in a building?

Mr. REED. Yes.

Mr. YATES. I had a misconception. I thought it would be all outdoors as it is in nature. I thought that was Mr. Ripley's description.

Mr. REED. All of these animals require closed conditions because of their environment.

Mr. YATES. Then it is an aquarium with different presentations.

Mr. REED. This is a major educational exhibit depicting the three major aquatic ecosystems with thematic biological demonstrations for the interest and education of the people.

Mr. YATES. I will tell you what I thought it was. I thought it was an exhibit of marine animals and land animals where you do not have artificial barriers such as fences. I thought that for all intents and purposes you would be seeing animals in the field and barred only by a space between the spectator and the animal.

Mr. REED. That would be very nice but impossible in the Washington, D.C. climate.

Mr. YATES. That is what I thought you intended to do for the marine animals. That is not true, however. You intend to build a building. Rather than having the usual tanks, such as the Shedd Aquarium where all kinds of fish swim in tanks, you will have a special kind of tank.

Mr. REED. Special kind of exhibit.

Mr. YATES. A special kind of tank, or a non-tank?

Mr. REED. That is right. In the tropical area there would be no barriers.

In other areas you would have to have glass because of the environmental control.

At this end, where we have sea otters, again they would be glass-fronted primarily to protect them from the public. They are such cute, playful animals people might throw things in to them.

This is another freshwater pond which would be open-fronted. Therefore, we are trying to achieve a combination of open and glass-fronted exhibits.

COST OF THE AQUATIC HABITAT EXHIBIT

Mr. YATES. How much will this building cost?

Mr. REED. We are anticipating and asking for $6 million for the first phase, and with refinement of the plans and design we anticipate the second phase will be an equal amount. It will be $12 million over a two-year period.

Mr. YATES. What will the operating expenses be?

Mr. REED. We anticipate we will need about 27 employees. This includes mechanics for servicing the equipment, the keepers handling the animals, curators, janitorial people to take care of it, as well as an additional security man. We would consider requiring about 27 people.

It would be a $1.5 million one-time cost and then about $.5 million. So after the first year we would expect the expenses to level off to $1.0 million a year for Salaries and Expenses and maintenance/utility costs.

This is very early on in the studies, Mr. Chairman. We do not have all the mechanical details in place as yet. This, then, is a very rough estimate because of only 15 percent completion on design concept.

Mr. YATES. This is a major investment, then, is it not?

Mr. REED. Yes, it will be a very interesting and exciting project. This is the riverbank scene. People here are looking underwater with the turtles, and manatees doing their thing. Then we have the upper deck and the standing level from which they can be seen.

Mr. YATES. We have in this aquarium, the one which is now in existence, something that will be lost because you cannot get annual operating costs of $280,000. [Reading:]

The Aquarium has had influential friends. The late legendary FBI director, J. Edgar Hoover, used to house his outdoor goldfish inside the Aquarium over the winter. And just a few months ago, one of Senator Strom Thurmond's children celebrated a birthday by taking friends to the Aquarium after cake and ice cream.

Senator Strom Thurmond's office said yesterday he sadly recognized the need for some budget cutting, including that of the National Aquarium.

So the Caribbean eel, the piranha, the lobsters and file fish, the trout and the lemon shark will have to find calm waters elsewhere. Some may actually end up at Baltimore's new $21.3 million national aquarium, built by the city with about $2 million in Federal funds, when it opens in July.

But it will cost up to $4.50 to see the fish there.

I believe there is a national aquarium in Baltimore.

Mr. REED. I believe legislation, passed by Congress last year, did not give it the title of "The."

Mr. YATES. It says "The National Aquarium" here.

Mr. REED. If you will talk with Mr. William P. Braker, Director of the Shedd Aquarium in Chicago, you will find this has been a bone of contention among the aquarists. The organization in Baltimore likes to call itself 'The," but it is actually a National Aquarium in Baltimore.

Mr. YATES. Does that same description carry over to The National Symphony? Is it a national symphony?

Mr. REED. This I don't know.

Mr. YATES. Apparently the reporter, whoever he or she was, so referred to it. We have an aquarium in being. Should we build another one in your shop?

Mr. REED. We are building an entirely different concept of aquatic exhibit. The aquarium in the Commerce building would never be able to exhibit these large aquatic animals. They never would be able to show the sea otter, the manatee, the penguins, and other animals which are traditionally within the purview of a zoo.

Mr. YATES. How do you think Senator Thurmond will react to this? He said he would not put up $280,000 for the present Aquarium even though it was a place of celebration for his children.

Mr. REED. I would hope Senator Thurmond would feel equally good toward us. He has been out many times with his children.

Mr. YATES. The initial cost is $12 million in two phases?

Mr. REED. Yes.

Mr. YATES. What are the operating costs? What is the total?

Mr. REED. I don't think I gave the total. It would be a one time $1.5 million cost and then about one-half million. After the first year, we would expect the expenses to level off to $1 million a year for Salaries & Expenses and maintenance/utility costs.

Mr. YATES. Another $2.5 million for operating expenses?

Mr. REED. $2.5 million for the first year and then about one million. At the present time and based on less than 15 percent of our design completed. This is what we are thinking. We hope it will be less than that but we do not know.

AQUARIUM AT THE DEPARTMENT OF COMMERCE

Mr. MURTHA. Do we know whether this Aquarium will close before October 1st? Are they phasing it out?

Mr. YATES. There is not enough money for 1981, I take it. That is part of the Fish and Wildlife Service. It will be permitted to operate until September 30th.

Mr. MURTHA. Would it not be better to keep this one open and skip the other aquarium for a couple years? If they start phasing out it may be too late for us to do anything.

Mr. REED. What we are building in this facility is not an aquaria like the one we have in the basement of the Commerce building or the traditional aquariums they have had elsewhere. This is an ecological exhibit of tropical animals which live in water. We have to have a building because the weather here in Washington is too severe for them.

Mr. MURTHA. I understand what you are saying. If we already have an aquarium that people can visit at the present time, and with budget constraints in other areas, it seems logical we should look closely at spending more money in operating expenses plus capital expenditures for this proposed aquatic exhibit.

Mr. REED. I am sure you should look at it, and I hope you will look at it and realize what this really is. What we now have in Washington is a lower class old fashioned aquarium. It is something which should have been upgraded many, many years ago. There was no space and no opportunity. And apparently no interest in the Interior Department in public education in the type of aquarium in which we are now interested.

Mr. MURTHA. If they do not realize the advantages of keeping the present one open, it may be too late to save it if we decide not to fund the other one.

Do we fund them both?

Mr. YATES. Fund both of what?

Mr. MURTHA. This aquarium and the projected one?

Mr. YATES. They are asking us to fund the new one. Fish and Wildlife came in and departed without having finished their presentation.

NATIONAL ZOOLOGICAL PARK MASTER PLAN

This is interesting because Mr. Reed has a master plan that will require expenditure of an additional $20 million to complete four remaining projects within the master plan, of which the aquatic habitat exhibit for $6 million is one.

Mr. REED. That was the first phase.

Mr. YATES. Your justification, Mr. Reed, states that the amount over a two-year period is expected to be $9,300,000. That will be increased to $12 million, I take it?

Mr. REED. With the new design and increased cost of construction. We have a design now, at least the beginning of a plan we have been working on since the last appropriation. This shows we will have a proper and good exhibition for the education and scientific studies. This is what we need for that.

Mr. YATES. When will the Great Ape House be open to the public?

Mr. REED. We are anticipating that the building will be open the week before Easter. We will be ready for our spring visitors. Our season really gets heavy at about Easter week. It is a beautiful building. We hope you will come out to see it.

Mr. YATES. Mr. Challinor spoke about fighting for the Federal dollar for the new project. Why would you not phase this out and do the things that have to be done to put your buildings in shape more quickly rather than undertaking a new construction of this kind?

Mr. RIPLEY. Referring to the zoo?

Mr. YATES. This is the zoo. You have $6 million for this year and $6 million next year, after which you will undertake an additional $2.5 million a year in operating expenses.

Mr. RIPLEY. That is a very fair question, Mr. Chairman.

Mr. YATES. Yes, and what would the answer be?

Mr. RIPLEY. The answer would be to decide what the master plan for the zoo really consists of and to what extent we should adhere to it.

As I recall, this is part of the master plan. If you think we ought to abandon or tailor the master plan, we will be perfectly happy to go along with that.

RESTORATION AND RENOVATION AT THE ZOO

Mr. YATES. Let us talk about your other expenditures for the year. You have $6 million for the aquatic facility. You have a half million dollars for renovation, repairs and improvements.

Mr. REED. Yes.

Mr. YATES. You need that to put your zoo in presentable condition and have it operating properly.

Mr. REED. Yes.

Mr. YATES. Tell me about the question of cleanliness. We had a question about that last year. You said it is difficult because of the numbers of people you have, and I can understand that.

I have not had any more complaints, have you, about the condition of your grounds?

Mr. REED. No, I have not yet. The season will start soon, however. One never knows what one will have. There will be some

reductions in personnel, and we hope to be able to make that up with contract work for some of the cleaning, the lawn work, and so forth.

I think the zoo should be in better shape this year. We have had a number of trees planted within the past year. We are looking ahead to a good year.

Mr. YATES. Is $500,000 enough to take care of your program of renovation, repair and preventive maintenance for this next fiscal year?

Mr. REED. That is the amount for which we are programming and planning.

Mr. YATES. How much did you ask Mr. Ripley for for that purpose?

Mr. REED. During the last few years we have tried to maintain it somewhere between $500,000 and $650,000.

Mr. YATES. That is inadequate? Are you falling behind?

Mr. REED. We have had proper renovation programs since 1967. While we can always use more we are able to stay pretty well on top of things.

Mr. YATES. Should you have more?

Mr. REED. Yes, I could use more.

Mr. YATES. I know this is the amount you have had year in and year out. You are falling behind because of the inflation factor?

Mr. REED. The inflation factor is killing us off. We could use more money.

Mr. YATES. How much more do you need to keep the zoo going properly?

Mr. REED. This is on renovation and repair?

Mr. YATES. And improvements.

Mr. REED. I will ask Mr. Calise.

Mr. YATES. We are at the Washington Zoo itself now.

Mr. CALISE. When we started at $400,000 we raised it to $450,000 and wanted $500,000. We think $600 to $650 thousand would take care of our repairs for the roofs, boilers and compressors as they wear out.

Mr. YATES. What roofs need repairing?

Mr. CALISE. Right now none because we are taking care of them.

Mr. YATES. When do the roofs need to be repaired?

Mr. CALISE. Repaired?

Mr. YATES. Yes. What is the condition of your buildings? Are there leaks in your buildings?

Mr. CALISE. The Elephant House roof is being replaced because it is leaking. We are replacing it with 1981 funds.

Mr. YATES. How much are you spending for that?

Mr. CALISE. About $100,000.

Mr. YATES. Is that enough to take care of the roof?

Mr. CALISE. Yes, sir.

Mr. YATES. How do you know?

Mr. CALISE. I inspected it.

Mr. YATES. Are you a roof inspector?

Mr. CALISE. Yes, sir.

Mr. YATES. Mr. Peyton, how about that?

Mr. PEYTON. Marvelous.

Mr. YATES. Are you an engineer or an architect?

Mr. CALISE. I am an engineer.

Mr. REED. He has had long experience in the Navy. As much as I like the Smithsonian I would not share him with the Smithsonian. We need him at the zoo.

Mr. YATES. How about your other buildings? How about the walls?

Mr. CALISE. No problem with walls. We have a problem with heating, air conditioning, but we are taking corrective measures in a five-year program.

Mr. YATES. You are in good shape on then?

Mr. CALISE. If we can continue at the $600,000 level with the R & R which we asked for.

Mr. YATES. This says $500,000.

Mr. CALISE. We are going to $600,000 for 1983, 1984 and—

Mr. YATES. Is $500,000 enough for 1982?

Mr. CALISE. I have every project already proposed to be designed.

Mr. YATES. Do you go out for bid or do you have in-house help?

Mr. CALISE. We go out to bid.

Mr. YATES. Who inspects the contractors as you do the work?

Mr. CALISE. I have four inspectors in my office of construction management. I keep on top of it.

Mr. YATES. When was the last time one of your roofs was put into shape?

Mr. CALISE. I would say three years ago.

Mr. YATES. Has that roof leaked?

Mr. CALISE. No, sir.

Mr. YATES. Did you inspect it?

Mr. CALISE. These inspectors did.

Mr. YATES. There have been no leaks as a result?

Mr. CALISE. That is right.

Mr. YATES. How big a roof is it?

Mr. CALISE. We are talking about 10,000 square feet.

Mr. YATES. That is a small roof, then.

Mr. CALISE. We don't have big buildings.

Mr. YATES. There is no area for leaks to develop?

Mr. CALISE. Unfortunately there are some.

CONSERVATION AND RESEARCH CENTER

Mr. YATES. Next is funding for Front Royal, $650,000. That is for renovation, repairs and improvements. They will accomplish work necessary for continuing critical animal breeding programs. You show $650,000 for the construction of a delicate animal facility. What is a delicate animal?

Mr. REED. One that cannot take the weather at Front Royal or Washington. They are delicate if they have to have inside quarters.

Mr. YATES. Tropical animals?

Mr. REED. Tropical animals, yes. They are either from the southern part of the United States or tropical places throughout the world.

Mr. YATES. Can you give me an example?

Mr. REED. The golden marmoset is the most exciting and successful of our delicate animals.

Mr. YATES. $650,000 is enough for that purpose?

Mr. REED. For this year under the plans we have developed.

Mr. YATES. How do you propose to build your delicate animal facility? Are you going out for bid on that, too?

Mr. REED. Yes.

Mr. YATES. Are the plans prepared for that yet?

Mr. REED. Plans have been prepared.

Mr. YATES. This is for continuing construction?

Mr. REED. Yes.

Mr. YATES. When will you be finished?

Mr. REED. With this one?

Mr. YATES. Yes. When will the delicate animals be brought into the building?

Mr. REED. We figure two years, late calendar 1982.

Mr. YATES. You will have small animals and birds such as the giant armadillos, flying lemurs and the myna. I have never known of one to speak.

Mr. Ripley, have you heard them speak?

Mr. RIPLEY. No. They don't chirp back at you.

Mr. YATES. Is not a myna bird a talking bird?

Mr. RIPLEY. The big hill myna is capable of learning quite a few words.

Mr. YATES. How many birds besides the myna and the parrot talk?

Mr. RIPLEY. About four species of parrots are really quite good talkers as such. The hill myna is another. That is practically all of them. Some make sort of an interesting sound and calls which they mimic, as starlings do sitting on people's chimneys and as mocking-birds do. However, there are very few talkers.

Mr. YATES. Road resurfacing for $100,000, and miscellaneous renovations and repairs for $200,000. Are those padded?

Mr. REED. No, sir.

Mr. YATES. Is that more than you need for the purpose?

Mr. REED. It certainly is not more than we need, particularly for Front Royal. However, we will have a master plan coming up where we will have better knowledge. It is not padded.

Mr. YATES. Does Chia-Chia still have jet-lag?

Mr. REED. Yes, and he is trying to fit into our time schedule.

COOPERATIVE BREEDING ARRANGEMENTS

Mr. YATES. The Front Royal establishment has been successful for breeding purposes. What do you do with the animals which are bred? Do you sell them to other zoos?

Mr. REED. Most of the animals we have at Front Royal we are working in a cooperative breeding arrangement with other zoos, so we are still changing animals within a breeding program. With the lesser panda and the golden marmoset we are sending feed stock to other zoos to establish breeding groups there. We are hoping to be able to return some of the deer, such as the elds deer, to Thailand for reintroduction into the wild.

PURCHASE AND SALE OF ANIMALS

Mr. YATES. Several years ago the question of pirated animals appeared in the press.

Mr. REED. Yes, sir.

Mr. YATES. Is that still a problem?

Mr. REED. As I understand, it is a serious problem as to illegal trade in parrots, and perhaps some other animals. Apparently the parrot trade is a good trade. The price of parrots has gone sky high, up around $5,000 to $6,000 now.

Mr. RIPLEY. More than that, $12,000 to $15,000.

Mr. REED. For a single animal.

Mr. YATES. Should you be part of the acquisition program? Do you buy animals?

Mr. REED. Yes, we buy animals.

Mr. YATES. How much money is in this budget for animal purchase?

Mr. REED. We have had about $25,000 for animal purchase.

Mr. YATES. Is that an annual amount?

Mr. REED. Yes.

Mr. YATES. Have you used it every year?

Mr. REED. Yes, sir.

Mr. YATES. What did you buy last year?

Mr. REED. Do you want the complete list?

Mr. YATES. Give me some examples of what you bought last year. Are you interested in any tigers from Mr. Challinor's shop?

Mr. REED. No. We have all the tigers we need, although we are loaning animals. Animal purchases from the Federal appropriations included prairie dogs, mandrill, fishers, North American porcupines, argus pheasant, Argentine shovellor, emerald tree boa, red-footed tortoise, and rhino iguana.

Mr. YATES. Prairie dogs? Is that not the subject of a predator eradication program out west?

Mr. REED. Unfortunately there are places where they are still trying to eradicate the prairie dog from the west.

Mr. YATES. Are these the same kinds of animals you are buying?

Mr. REED. These are the animals we bought. The animals we bought were zoo-raised, captive-born animals. They are not wild. We are attempting not to take any animals from the wilds. Seventy percent of the animals exhibited at our park were captive born.

PREDATOR CONTROL PROGRAM

Mr. YATES. What do you think of the predator control program out west? Have you studied it at all?

Mr. REED. I have not studied it in the past few years. Before I came to the Smithsonian Institution I was with the State of Oregon. I was intimately acquainted with the predator control program at the time they introduced 1080. I personally thought it was a disaster in that it so thoroughly killed the animals.

There is a need for predators in the wild. The coyote keeps down rabbits. Rabbits eat grass, so rabbits are in competition with the sheepmen and cattlemen.

In the ecology of our country there is a place for these predators to keep nature in balance. Obviously the mountain lion takes the old and young deer thus keeping the deer population in balance.

You might say that he is in competition with the hunters, but the predators selectively remove the aged unhealthy animals from the population that the hunter doesn't want so in my opinion, I

think most conservationists would agree, that there is a place for the predators.

The coyotes have gotten out of hand because they are doing so well with garbage cans and chicken farms, so it may be necessary to control them in selected areas such as the suburbs of Los Angeles and Phoenix, Arizona.

Mr. YATES. Sheep herders are complaining about the coyotes.

Mr. REED. Sir, I have had experience working with with sheepherders. They will blame their losses on everything under the sky except their own mismanagement. When a sheep dies and the carcass is eaten by coyotes or eagles the animals are often wrongly blamed for the death.

If you really checked into the actual number of proven kills by predators you would find it is minor. I will probably have the American Sheep Association down on my neck tomorrow for saying that.

Mr. YATES. I think you will, too.

Mr. REED. I am sure I will.

Mr. YATES. Rather your neck than ours. However, we have that problem.

Mr. REED. Yes.

Mr. YATES. Witnesses have appeared before us and complained about the method of trapping.

Mr. REED. That is right.

Mr. YATES. The steel trap, the steel leghold trap.

Mr. REED. That is right.

Mr. YATES. Would you also like to register a no vote on that or are these necessary?

Mr. REED. There are more humane methods of trapping animals that produce death quickly. The leghold trap is a slow and painful death for an animal, and sometimes he is not killed until the trapper comes and bashes him on the head. In the meantime he suffers.

You will often see an animal which chewed off its leg to get his freedom. That is pretty grisly.

Mr. YATES. Shall I ask about the seal program, too? You see these pictures of seals being killed. Would you rather not comment on that?

Mr. REED. I think it is very gross and a degradation of the human to sink so low as to be so terribly brutal and cruel in handling these animals.

Mr. YATES. The Canadians contend that this is the management device they use for keeping down numbers.

Mr. REED. Do they need to keep numbers down? Then there is the argument of the fishermen who say the seals are taking their fish.

Admittedly a properly-placed blow on the head delivered by a man in prime physical strength is a very quick and rather humane death. However, after you have been bashing animals all day long even the strongest man gets tired and there are some terrible mistakes.

PANDA BREEDING PROGRAM

Mr. MURTHA. I would like to ask about the pandas and the expense involved in our recent relationship with England in bringing the panda to the zoo. How much did that cost us? How did we share costs?

Mr. REED. We are sharing with the British the expenses of transportation of the animal to and from. They will be shared by the London Zoological Society and us. While the animal is here as our guest, we will pay all expenses.

Mr. MURTHA. How about the results?

Mr. REED. This will be shared for the benefit of the breeding program between the two organizations. It is the London Zoo and the Washington Zoo which will use the offspring in the best manner for the panda breeding programs of the two zoos.

I know that is a kind of ambiguous answer, but the problem is that we do not yet have a breeding, do not have a baby, have not yet raised a baby, and won't until it is four years old. In five years, if we are lucky and if everything goes as I predict, we will have the question arise as to what we do with the baby.

Mr. MURTHA. You will keep the offspring here, then?

Mr. REED. No. It may go to London. If it is more useful for the breeding program of the Giant Panda, then it would go to London. Of course, if we have a baby here it will obviously have to stay during infancy with its mother in the Washington Zoo. One so sweet and cuddly has to stay with its mother. Exhibition-wise we will have the best show. Then we will decide where it is best for the species of animal to be regardless of how we feel about public exhibition and public sentiment.

Mr. MURTHA. All it cost us was the plane fare over and back?

Mr. REED. We will share the transportation between the two zoos. Half will be ours. I do hope that one of the American flag carriers will assist us with this little problem.

Mr. RIPLEY. We might even get twins. Don't overlook that possibility.

Mr. REED. That would be nice. There have been but both have not lived.

Mr. RIPLEY. They had two in Peking. Only one survived.

Mr. REED. Twins have never survived.

Mr. MURTHA. That would increase the number of people coming to the zoo.

Mr. REED. Yes, it will.

THE CENTER FOR THE STUDY OF MAN

Mr. YATES. The Center for the Study of Man is next. There was a furor several years ago about the amount of money that the office put into the National Anthropological Film Center. Has that been resolved? Margaret Mead died.

Mr. RIPLEY. Yes.

Mr. YATES. What happened after she died?

Mr. RIPLEY. The furor disappeared.

Mr. YATES. You are asking for $68,000 to index and catalog this Center.

Mr. RIPLEY. Yes.

Mr. YATES. Is that adequate?

Mr. CHALLINOR. That should be adequate for the purpose, yes.

OUTREACH PROGRAM AT THE HIRSHHORN MUSEUM

Mr. YATES. What is the outreach program of the Department of Education of the Hirshhorn?.

Mr. BLITZER. I will ask Mr. Lerner to comment on that.

Mr. YATES. Sure.

Mr. Lerner, you show $25,000 for the Hirshhorn Museum to increase support for the outreach program.

Mr. LERNER. As you know, sharing equal importance with the museum's exhibitions, research and publications programs is the museum's education mission. Inside the museum and off-site the Department of Education organizes a great variety of activities ranging from scholarly lectures to film programs for children. The Education Department conducts various extensions, or outreach programs, the prime aim being to attract and build new audiences to better understand what they see when they visit the museum. Such programs have been developed specifically for elementary school tour groups, talented and gifted children, and a variety of other groups, including senior citizens in nursing homes and other facilities.

All these programs have been immensely successful. The demand for them increases and is already, in spite of active volunteer help, outdistancing the Department's ability to respond.

The staff creates programs, manages them, makes many of the presentations, and recruits, trains and supervises volunteers.

To assist in these endeavors in which the museum places major emphasis, $25,000 is requested to increase support of the museum's Department of Education and in particular the outreach program. Funds provide for the services of two art history instructors who will be hired on contract as well as to provide related and badly needed supplies.

Mr. YATES. Two art history instructors for $25,000?

Mr. LERNER. They will not be working full-time.

Mr. YATES. Will you hire them or contract?

Mr. LERNER. Contract. We cannot hire them.

Mr. YATES. Thank you, Mr. Lerner.

SECURITY AT THE NATIONAL MUSEUM OF AMERICAN ART

Let me turn to the National Museum of American Art. You want $25,000 to purchase alarms and safety devices for high-value objects in cases.

Mr. RIPLEY. That is where the snuff box was.

Mr. YATES. How do you say "better late than never" in Chinese?

Do you have alarms now in your cases?

Mr. BLITZER. I will have to give the committee a private report about that. I would rather not go on the record with that.

Mr. YATES. Do you have them?

Mr. BLITZER. Yes. But we have zero dollars for that purpose in this museum's base.

Mr. YATES. For the record, every museum has that. If anybody were going to try to pilfer something the alarm would go off?

Mr. BLITZER. Yes.

Mr. YATES. Off the record.

[Discussion off the record.]

Mr. YATES. You want $25,000 to implement your alarm system for your cases. Is that adequate for the entire institution's purposes?

Mr. BLITZER. No.

Mr. YATES. This is just for you?

Mr. BLITZER. Just for that one Museum of American Art.

Mr. YATES. Has anybody considered whether you need more than $25,000 for the whole enterprise?

Mr. BLITZER. We are in the process of developing a phased program which we hope to present to you.

DISPOSITION OF EXCESS COLLECTIONS

Mr. YATES. I have been talking to the Deputy Secretary on the subject of exchanges. He indicated that you have numbers of stamp collections, more than you need because there are duplicates of various kinds.

The question was asked whether or not this would offer the opportunity for bartering or selling at auction.

I asked the judge yesterday whether you had that authority. The judge really was not very precise in his opinion.

Were you precise, Judge? Did you say they could be sold or exchanged?

Mr. POWERS. What was the question, sir?

Mr. YATES. The question of stamps. I imagine it depends on the terms of the grant, bequest or will.

Mr. POWERS. In general, I think the answer is yes. However, we are still studying the question. Some of the stamps we have are not postage stamps. They are treasury revenue stamps which are out of date. They are no longer in use. We received a surplus a few years ago of vast quantities of these which no longer would be used.

There are people who collect everything. There are stamp collectors who collect these kinds of stamps. We have been studying the problem now for some six months. One part of it deals with the practicality of this.

Mr. YATES. Deals with what?

Mr. POWERS. The practicality of it. If you try to sell thousands of a particular kind of stamp in a small market, they will not realize very much.

What I am working on is the extent to which we are free to sell them. I think we contemplate consulting with Treasury about that to be sure they do not have any objections.

Mr. HUGHES. The point I wanted to make, Mr. Chairman, is that there are opportunities. Some come about as a consequence of inventory and clear identification of duplicates in stamps which may be hardly distinguishably different. Exchange is always a possibility to improve the collection, which we would like to do.

However, there is an additional opportunity if we can work out both the law and the practicalities of the market situation to dispose of them for money, which then can be used for purposes such as safeguarding the rest of the collection if that is the option available.

Mr. YATES. If the judge lets you do it I think it is a good idea.

Mr. POWERS. There is one case where the question of duplicates is very clear. Most of these are duplicates.

Mr. YATES. Presumably if the stamp has value you will continue to hold it unless there were duplicates. If it has no value, nobody else wants to buy it. There is a question of saving space involved, then.

Mr. HUGHES. Saving space but also the security problem is substantial for small items like stamps. Wise judgment would dictate that it is better to dispose of them and get the proceeds than to protect them forever.

Mr. POWERS. It is helpful to have your concurrence.

Mr. YATES. It is a good idea if you have so many of a particular quality. I think it is the better part of husbandry to dispose of them.

Mr. RIPLEY. Would that include antlers?

Mr. YATES. Is there a market for antlers?

Mr. RIPLEY. There may be in Hong Kong.

Mr. YATES. That is point one. Point two is that if by some chance you can say they belonged to Teddy Roosevelt that might create a market for them.

Mr. RIPLEY. One of my headaches is the numbers of antlers.

Mr. YATES. What about rhinoceros?

Mr. RIPLEY. Not many of those.

Mr. YATES. Off the record.

[Discussion off the record.]

Mr. RIPLEY. There are dagger handles made in certain parts of the Middle East. They are considered a status symbol.

THE JOSEPH HENRY PAPERS

Mr. YATES. The next item is the Joseph Henry papers. When will they be completed?

Mr. BLITZER. They will be ended toward the end of the century.

Mr. YATES. How about the Ripley papers?

Mr. RIPLEY. Never, I hope.

Mr. BLITZER. For the Henry Papers under the Reagan budget we are asking for no increase here, since a new position was involved.

ADDITIONAL CONCERNS OF THE HISTORY AND ART ACTIVITY

Mr. YATES. Do you have any particular problems with your museums that you have not told us about here?

Mr. BLITZER. Several problems are reflected in the funds we are asking, for care of the collections, exhibitions and the like. They appear throughout the justifications.

If I might say one unsolicited word. Having sat through the morning, I really feel moved to say that for a year and a half or so, although the kinds or problems you discussed here are certainly real problems, Mr. Peyton has greatly improved our ability to deal with them.

Mr. YATES. I empathize with him. He has a difficult job. It is difficult to keep track of these huge establishments such as the Smithsonian. I agree that it is a very difficult job. However, it is a job which has to be done.

If I pushed him a little bit, I hope he did not take umbrage. It is because I am interested in the same goals he and you are.

Mr. BLITZER. I do not think you pushed him unreasonably at all. These are real problems. I think he has helped us with the solution.

Mr. YATES. We are glad to have that for the record.

NATIONAL MUSEUM OF AMERICAN HISTORY

Now we come to the rare collection of violi da gamba.

Mr. KENNEDY. This is the same kind of instrument as the violin or the viola.

Mr. YATES. What does "da gamba" mean?

Mr. BLITZER. Of the legs.

Mr. YATES. How is it different from the violoncello?

Mr. KENNEDY. It is smaller. You hold it between your knees.

Mr. YATES. How did you get a collection? You have not only violi da gamba but many other rare musical instruments. Is that right?

Mr. KENNEDY. Yes, sir.

Mr. YATES. Does not the Smithsonian also have a collection of Stradivari and some of the others?

Mr. KENNEDY. We have very fine string instruments.

Mr. YATES. I have seen publicity on these, so I have no hesitancy in putting this on the record.

Mr. KENNEDY. Yes, sir.

Mr. YATES. You usually put them out for use, do you not?

Mr. KENNEDY. We try to.

Mr. YATES. I know the Library of Congress does, too.

Mr. KENNEDY. We do.

Mr. YATES. This helps keep them in shape, I am told.

Mr. KENNEDY. It keeps two things happening.

Mr. YATES. Like an automobile. You have to use it occasionally?

Mr. KENNEDY. You have to use them in order to convey to the public how they are used because they are not like the modern instruments. It is good for the public to hear them.

Mr. YATES [reading]:

> During the next year, staff members will be engaged in the following broadly conceived social history studies: coppersmithing and glassmaking, as they are transformed by new machines and new forms of business organization; the emergence of the textile industry in American through an intensive study of the country's first textile mill village.

It sounds good.

PHOTOGRAPHIC EXHIBITS

You want an increase of $220,000 for enhancement of the museum's publications program. When will you have a photographic exhibition?

Mr. KENNEDY. We have two up now. In the third floor galleries we are installing a fresh one, "Images of 19th Century Women." The preceding photographic show had "Images of American West," showing how photographers saw chunks of the west, and the way technology of the photographer created a different set of images. You wound up seeing the same physical object in a wholly different way.

Mr. YATES. If memory serves me correctly, you have an extensive collection of stock in print.

Mr. KENNEDY. Yes. We have a substantial representation.

Mr. YATES. Which of the other famous photographers do you have besides Steiden? You have Paul Stand?

Mr. KENNEDY. I don't know that collection. As a matter of fact, I do not think we know it as well as we should.

One of the processes of inventorying is not only to identify in physical terms but to identify the capabilities of the museum for better shows. We are working our way through not only those which are printed but the glass plates and other kinds of plates we have not yet printed out. There is some money in the budget for that as well.

We really do not fully know the riches we have in photography because we have not really been fully exploiting that collection.

Mr. YATES. Is that true of other assets of other objects held by the organization?

Mr. KENNEDY. Sure. That is what the curators are for, and that is what the fresh looks are for.

Mr. BLITZER. I think we reported to you in the past an enterprise we are engaged in now funded with trust funds, creating initially finder's guides for collections throughout the Smithsonian. One having to do with prints and drawings is in manuscript at the Smithsonian Press and will be out this spring or summer. Two others deal with decorative art collections and with photographs. These will not be inventories but they will direct, they will consist of finder's guides to direct people to resources they might not otherwise expect.

For example, Air and Space Museum has photographic collections, the Museum of Man has important photographic collections. The Archives of American Art has them. This will help tell people where the collections are.

CONSERVATION EQUIPMENT

Mr. YATES. For fiscal 1982 you want $15,000 for the purchase of ultraviolet infrared examination equipment. You then say that you also want a vacuum hot table for paintings and painted objects.

Mr. KENNEDY. Yes.

Mr. YATES. What is that for?

Mr. KENNEDY. That is for the conservation laboratory. The conservation processes we have are like that described to you earlier today.

We have painted objects, many of them objects of great value, which will decompose unless we tend to them properly. That is what that money is for.

MAINTENANCE OF WINDOW FRAMES ON SMITHSONIAN BUILDINGS

Mr. YATES. Speaking of decomposition, might I ask Mr. Peyton another question? You made reference to funds which were needed to replace window sash because of failure of maintenance. I think it might have been on the castle.

Mr. PEYTON. Arts and Industries building.

Mr. YATES. How many of your other buildings are in that same condition? How many are suffering? How many of the window frames are suffering as a result of inadequate maintenance?

Mr. PEYTON. Renwick is the only other one I know of. We intend to do that in conjunction with the stone work.

Mr. YATES. That will be up to date, then?

Mr. PEYTON. Yes.

Mr. YATES. Would you say the necessity for maintaining the window frames and the other wooden work against the elements will be up to date as a result of this budget?

Mr. PEYTON. No, sir. It will be up to date as a result of the five-year prospectus funding plan.

Mr. YATES. Will any of that be lost because of elements in the next year or two or three because you will not have taken care of it this year?

Mr. PEYTON. The wooden frames in the windows in both the Arts and Industries Building and the Renwick is probably the original wood and it dates back 80 or more years. Some of that wood is beyond saving at this point.

Mr. YATES. The point I would like to make is that I would hope you would ask us for money to help you prevent the wood from disintegrating so that it would have to be replaced, if indeed it can be saved.

Mr. PEYTON. With the exception of those two buildings we are adequately funded.

SCHOLARLY JOURNAL

Mr. YATES. You are going to provide the scholarly community with the opportunity to carry on a journal called Technology—and—Culture. Are you assuming any expenses in connection with that?

Mr. KENNEDY. No, sir. We will be using our own staff with the cooperation of one curator from the Air and Space Museum, a historian of technology. This seems to us to be the scholarly journal dealing with that body of activity which many of our curators work on anyway. Net no additional dollars.

STEAM TENDER

Mr. YATES. You have a new stationary steam tender. Does it work?

Mr. KENNEDY. Yes.

Mr. YATES. Without restoration?

Mr. KENNEDY. No. It required some restoration but it now works just fine.

Mr. YATES. Do you take it out occasionally?

Mr. KENNEDY. We are about to take out not that one but another one next spring. We are hoping to show you how nice a moving exhibit is which really moves.

Mr. YATES. You will tie it in with Amtrak?

Mr. KENNEDY. Yes.

Mr. YATES. How do you propose to do that?

Mr. KENNEDY. We would prefer to do that off the record, Mr. Chairman.

[Discussion off the record.]

SOLUTIONS TO ASBESTOS CONTAMINATION

Mr. YATES. At page 68 you say you want to correct contamination. Is that an asbestos problem?

Mr. KENNEDY. Yes.

Mr. YATES. What will you do about it?

Mr. KENNEDY. That has been occupying the attention of both the medical and construction experts for a couple years around here. I am not an expert on asbestos.

Mr. YATES. Mr. Peyton?

Mr. PEYTON. There are several solutions which can be applied to correct this problem. We try to apply the most economical and the most effective method. One is to encapsulate the asbestos in place. Commercial compounds are available that seal the asbestos. However, it is very important to ensure that the asbestos firmly adheres to the original surface before sealing it. If the asbestos is loose, sealing it is not effective.

Mr. YATES. We have that problem in a number of schools back in my district.

Mr. PEYTON. Another solution is to remove the asbestos completely, down to literally the last fiber. There are companies that specialize in this type of removal. They wear protective clothing. They have special vacuums and special tools which enable them to get into the overhead spaces.

I think that the basic start for these companies has been the school program.

The third technique we have employed—and we have used this at Silver Hill—is to leave the asbestos in place, take advantage of the insulating effect of the asbestos, which is the reason it was put there to begin with, add additional asbestos over the top; cover that with sheetrock or some type of hard board, which is either screwed or nailed in place; and cover the joints with a sealing strip.

Mr. YATES. In how many buildings does this present a problem?

Mr. PEYTON. We have identified asbestos insulation and pipe-covering material in seven or eight of our large major buildings. At the Silver Hill facility asbestos is openly exposed in seven or eight buildings that essentially are unfinished except for that insulation.

Mr. YATES. Do you keep employees away from these buildings?

Mr. PEYTON. In each case where we have discovered asbestos we have had the material examined to determine the actual asbestos content. There are certain OSHA standards regarding this.

We have also conducted tests to capture free air that is in the space to see whether there are asbestos particles. The machine that does this simulates human breathing. The collectors can be attached to workers who move around in the space.

In every instance so far, the test results from these collectors have indicated that our people are in less than the threshold limit of exposure.

We have had some tests very near the threshold limit, so this is obviously a concern to us.

We have posted signs in these areas, indicating exactly what the problem is. We have made available plastic suits which are recommended by NIOSH. These protective suits are uncomfortable to

wear because they seal the body, and people moving around naturally perspire, and it can be very uncomfortable.

We have also purchased special vacuum cleaners to be used in these areas to gather up any dust that may include some of these particles.

We also maintain a log of people who go into the spaces and have a medical surveillance program where we periodically x-ray those individuals to check up on them.

Mr. YATES. Have there been any claims filed by employees?

Mr. PEYTON. No, sir. Establishing a medical history of this is a long-term program.

Mr. YATES. Do you have to worry about this in any of your exhibition halls?

Mr. PEYTON. No, sir.

PHOTOGRAPHIC COLLECTIONS AT NATIONAL MUSEUM OF AMERICAN HISTORY

Mr. YATES. At page A-70 you say your photographic exhibitions are in great demand. Is this for your SITE program? What does that mean?

Mr. KENNEDY. At the bottom of the paragraph?

Mr. YATES. Yes.

Mr. KENNEDY. That is part of what I tried to refer to earlier. We have very extensive photographic collections which were assembled primarily for the purpose of examining the history of the technology of the photographic process. They were not assembled so much for the purpose of showing them as objects as you would in an art museum context, but they are interesting technologically, historically and aesthetically. You want to get a fresh cut at that. You also want to be sure they don't fall apart. Some of them which happen to be on glass plates. There are tens of thousands of these. We are just getting a handle on how to care for them properly, and to microfilm those which will of necessity fall apart, because you cannot maintain the original chemical substance.

Mr. YATES. Do you collect color photographs, too?

Mr. KENNEDY. There are some, but primarily these tend to be older.

STORAGE FACILITIES

Mr. YATES. Mr. Peyton, when the museum support center is open and operating, will you abandon the facilities which have the asbestos material in them?

Mr. PEYTON. No, sir. I do not believe that is the plan. The Smithsonian collection grows as time goes on. I think all of our facilities in that category will be used.

However, we do have as part of our R&R program an annual increment of approximately $250,000 for an ongoing program to apply one of the remedies I previously described.

Mr. YATES. That should take care of it?

Mr. PEYTON. Over time, yes.

Mr. YATES. As you apply the remedy it is supposed to take care of that situation?

Mr. PEYTON. That is correct, sir.

NATIONAL MUSEUM OF AMERICAN ART

Mr. YATES. How about the National Museum of American Art? The name was changed.

Mr. BLITZER. As the Chief Justice said, "You are changing the pleadings to fit the facts." This is a more apt description of what that museum is. It is a National Museum of American Art. The old name has a strange history. National Collection of Fine Arts was coined by someone. We have never been happy about it.

EXHIBITIONS AT RENWICK

Mr. YATES. Page A–76 is next. How do you go about getting those beautiful collections of craft at the Renwick? Who does that for you?

Mr. BLITZER. Largely Lloyd Herman, the director of the Renwick.

Mr. YATES. Those exhibits on the first floor near your book store are spectacular, both the ceramics and the glass collection.

Mr. BLITZER. Thank you.

Mr. YATES. Do you buy any of those?

Mr. BLITZER. We are having discussions about whether we should not have a more active program of acquiring American handicrafts. The Renwick was established as a museum without a collection, supposed to be just a showcase. We are having conversations between Cooper Hewitt, Renwick and American History. The line between fine arts and craft is fuzzier and fuzzier.

Mr. YATES. Some of those old Indian pots are just beautiful. How about Maria Martinez? Her pots are just magnificent.

Mr. BLITZER. Yes.

Mr. YATES. I suppose you, as the authority on this, would classify that as a craft rather than an art?

Mr. BLITZER. We are trying to sort it out and not get too bothered by distinctions and be sure the Smithsonian collects them.

Mr. YATES. To what conclusion have you come?

Mr. BLITZER. Basically if it is European, Cooper-Hewitt should collect it. If it is American and made primarily for use, the Museum of American History should collect it. If it is made primarily to be looked at rather than used, the Museum of American Art should collect it.

Mr. YATES. Should it be collected?

Mr. BLITZER. We feel so, yes.

Mr. YATES. A Maria Martinez pot costs about $25,000, does it not?

Mr. BLITZER. Yes, sir.

Mr. YATES. You are going to have the art of Appalachia, shown on page A–76. What art does Appalachia have? Are you talking about the mountains?

Mr. BLITZER. The text says it will be largely paintings, drawings, sculptures and prints. One of the fascinating things about this museum is that it is continually answering questions like that that none of us really knows anything about. They have done these regional shows. They have done the Northwest, California——

Mr. YATES. They have done the West.

Mr. BLITZER. They are working their way around the country.

Mr. YATES. Out of deference to Senator Byrd they have moved to Appalachia?

Mr. BLITZER. Bad timing.

Mr. YATES. Will that be a juried exhibition?

Mr. BLITZER. Yes.

Mr. YATES. How do you select the juries?

Mr. BLITZER. I don't know how they are selected. As you see, this will travel throughout the Appalachian region.

NATIONAL PORTRAIT GALLERY

Mr. YATES. Can you tell whether your visitations to the National Portrait Gallery have increased?

Mr. BLITZER. The Washington portraits came late in fiscal year 1980——

Mr. YATES. How about attendance?

Mr. BLITZER. It went up 16 percent in fiscal 1981 since October.

Mr. YATES. That portrait gallery is beautiful.

Mr. BLITZER. I wish Mr. Sadik were here to hear it.

Mr. YATES. Next we have a controversial item. July 1981 will mark the opening of "Champions of American Sport," a colorful tribute to 100 of the greatest men and women athletes in our nation's history.

Who selects the 100?

Mr. BLITZER. The staff of the National Portrait Gallery.

Mr. YATES. How many of them were athletes?

Mr. BLITZER. That is an interesting question. The way the Gallery is organized that would normally be the province of historian, Dr. Pachter, who is not himself terribly expert. It has been assigned to other members of the staff.

I was rather hurt I was left out. I think it will be done carefully.

Mr. YATES. How do you do it? I suppose you refer to 100 of the greatest.

Mr. BLITZER. That is carefully written.

Mr. YATES. That is taking on a challenge, though. Who decides Jim Thorpe and Babe Didrikson? Were there others? Jackie Robinson?

Mr. BLITZER. We will know when the show opens. For the earlier period I will have to admit some of the choices will depend on our ability to find portraits of people. That is not a problem with recent figures.

Mr. MURTHA. Photographs or portraits?

Mr. BLITZER. Photographs as portraits.

Mr. RIPLEY. Likenesses in some form. Jess Willard is included among the sculptures.

TRAVEL FOR ARCHIVES OF AMERICAN ART

Mr. YATES. Archives of American Art. Have you missed any collections because you have not been able to travel in recent years?

Mr. BLITZER. May I ask Mr. Woolfenden, the director of the Archives, to speak on this?

Mr. YATES. Have you missed collections as a result of not being able to travel in recent years?

Mr. WOOLFENDEN. Yes. We will miss more this year.

Mr. YATES. Tell us which ones you missed.

Mr. WOOLFENDEN. We have not done much in Chicago. We should be down there more getting things in that area. Our man is in Detroit.

Mr. YATES. Our finest Chicago collection moved to New York without you?

Mr. WOOLFENDEN. We want only papers. We have a chance right now at a big Ohio project funded by the Putnam Foundation. We need transportation to do that.

Mr. YATES. I think the committee can provide you a return trip from Washington to Ohio, but not much farther.

Mr. WOOLFENDEN. And moving our man from San Francisco to the Pacific Northwest where there are many papers we need.

One of our problems, I think, is the definition of travel. If an area director is going out to pick up something and bring it back with him, it sounds as though he was going out to Laguna Beach or something.

Mr. YATES. I am sure he does.

Mr. WOOLFENDEN. Even transportation gets to be a problem for us.

Mr. YATES. You have not told us about any that you have lost as a result of inability to travel. What have you lost?

Mr. WOOLFENDEN. We have not really lost them. They are out there. We have a whole list of things we would like to get, desired collections. There is an enormous collection of Frederick Church papers up in New York State, probably the finest collection of 19th Century American artist papers not under lock and key.

Mr. YATES. Say you go up there to look at these Church papers. What do you hope will happen?

Mr. WOOLFENDEN. In that case we would take a camera up and film them at Olana. Then we would have the microfilm to make available to the five area offices.

The papers of Mark Tobey are in Seattle, again we need to take a camera up there and microfilm those.

Mr. YATES. Why don't you have one of the members from Oregon do that?

Mr. WOOLFENDEN. That is a really good idea. Put them on our committee.

Mr. YATES. You have one on this committee. Mr. AuCoin would be glad to do it.

Mr. WOOLFENDEN. He is not here today. I was keeping an eye on him.

Mr. YATES. Would you do the Lorado Taft papers in Chicago?

Mr. WOOLFENDEN. Sure. There are papers every place. One of our great problems is identifying where they are. You need somebody in the field to dig them out. That is one of the reasons we are in business. We don't know enough about where American artists' papers are. We don't know what really happened in Chicago.

Mr. YATES. Why not advertise rather than travel?

Mr. WOOLFENDEN. You get all the wrong things. It is the Sunday painter who wants to give you his papers. To get the really good things you have to go after them.

Mr. YATES. Why not advertise for the kinds of good papers you want, if you want the Church papers, for example? What other artists do you want?

Mr. WOOLFENDEN. We are working with the DeKoonings now, with Lee Krasner. We keep going back out to East Hampton to get the New York school people who were there.

A man in Boston travels around New England looking for things.

Mr. YATES. Have you gotten any as a result of going to these conferences?

Mr. WOOLFENDEN. Yes, lots.

Mr. YATES. Where do you put them?

Mr. WOOLFENDEN. We take them all down here and place them in the Washington Center.

One fascinating thing with DeKooning papers is that we have been getting his income tax reports which are a tremendous record of the history of American art. We begin to see what the market was when DeKooning was recognized.

Mr. YATES. When did that take place, about 1951?

Mr. WOOLFENDEN. About that. We have Franz Kline's papers. They are full of pawn papers. Suddenly he drives an elegant European car.

That is another problem. You never know what you may want. What may be the thing that tips off the scholar and gives him a line on what he needs to know.

Mr. YATES. Where will you have five regional centers?

Mr. WOOLFENDEN. We have them now one in Boston, one in New York, Washington, Detroit, San Francisco, and we are being courted right now by Los Angeles partially through the Getty Foundation. I am going out the end of next week to see whether we can do something there.

We will make it clear to them there is no Federal money available.

Mr. YATES. Thank you, Mr. Woolfenden.

VISITOR INFORMATION CENTER

You want $22,000 for the Assistant Secretary for Public Service part-time positions. What happens if you do not get the increase?

Mr. RIPLEY. Mr. MacDonnell is here.

Mr. MACDONNELL. Might I open by saying Mr. Euell has asked me to extend his personal regrets that he could not make it.

Mr. YATES. I hope he gets well quickly.

Mr. MACDONNELL. We expect him back at least on a part-time basis next week.

Mr. YATES. When was he operated?

Mr. MACDONNELL. January.

Mr. YATES. You want another $22,000 for Public Affairs.

Mr. MACDONNELL. Public Service. Public Affairs is another office in the Institution.

Mr. YATES. What happens if you do not get the money?

Mr. MACDONNELL. The reason for that request is that the Visitor Information Center, which uses mostly volunteers, hundreds of volunteers, mans all our information desks. I am sure you know the summertime is our peak period. At that time we would like to be able to hire five part-time employees who would assist us with

the increased work load due to the large influx of people who come in during that time.

Mr. YATES. Thank you, sir.

Mr. YATES. Do you have cultural exchanges with the Soviet Union? This has nothing to do with Public Service.

CULTURAL EXCHANGES WITH COMMUNIST COUNTRIES

Mr. Ripley, do you have cultural exchanges with the Soviet Union?

Mr. RIPLEY. No.

Mr. YATES. Do you have cultural exchanges with any of the Communist countries?

Mr. RIPLEY. We have proposed having an exchange exhibits program. Perhaps Paul Perrot can help me out with this. We proposed one with Rumania, sending an exhibition to Rumania and receiving one in exchange in the area of art. That would be cultural.

We have had a request from Bulgaria which we have not yet honored.

Mr. YATES. This does not relate to classified material of any kind, does it?

Mr. RIPLEY. None whatsoever.

DIVISION OF PERFORMING ARTS

Mr. YATES. You have a Division of Performing Arts, requesting an increase of $36,000.

Mr. RIPLEY. Mr. Morris, who is in charge of the Division of Performing Arts, is here.

Mr. YATES. And very talented.

Mr. Morris, how does what you do differ from what the National Endowment for the Arts does?

Mr. MORRIS. We produce programs.

Mr. YATES. You don't get any of their money?

Mr. MORRIS. No, sir. Our gross expenses for this year, sir, are $4.2 million.

Mr. YATES. What do you spend it for?

Mr. MORRIS. The majority is for the purchase of recordings, which are then resold.

Mr. YATES. Does that come out of your department?

Mr. MORRIS. Yes, recordings are included.

Mr. YATES. Do you sell any?

Mr. MORRIS. A few, about 110,000 this year.

Mr. YATES. When will you get a one million gold record?

Mr. MORRIS. We have a gold and a platinum record for the Smithsonian collection of classic jazz, and for Treasury of Bach we will earn a gold this year.

Mr. YATES. What happens to all the money you make as a result?

Mr. MORRIS. We recycle it into our own programs.

Mr. YATES. How much comes in?

Mr. MORRIS. Total income of $4.5 million this year.

Mr. YATES. What is your net, then?

Mr. MORRIS. My gross expenses after that are $4.16 million.

Mr. YATES. You operate at a profit, then?

Mr. MORRIS. Yes, sir, I am operating at a profit, a surplus of about $350,000.

Mr. YATES. That is why Mr. Ripley keeps you, because you operate at a profit. Is that right?

Mr. MACDONNELL. I might interject, and I think it is safe to say this for Mr. Ripley, he keeps this program because it does so well and advances the mission of the Smithsonian so well.

Mr. YATES. Diffusion of music among men.

Mr. RIPLEY. Increase and diffusion.

Mr. YATES. Records cover more than music?

Mr. MORRIS. Some aspects of theater and, to a small degree, some dance programs.

Mr. YATES. Have you passed the Reagan barriers? How much money is in this for you?

Mr. MACDONNELL. A total of $36,000 which we are requesting this year, for two term positions.

Mr. YATES. You came out pretty well. You are a good hurdler. Sounds as though you are doing very well.

Smithsonian Chamber Players. That is a new one to me.

Mr. MORRIS. This group has been in operation five or six years making use of the musical instruments in the Museum of American History such as the violi da gamba you talked to Mr. Kennedy about.

They also record performances on those instruments so there is a permanent documentation of how they sound and the way the performance practices are employed.

JAZZ RESEARCH PROGRAMS

Mr. YATES. You have a jazz research program, have you not?

Mr. MORRIS. Yes.

Mr. YATES. There is a lovely young lady in the music department of the National Endowment for the Arts who also is interested in developing a jazz program. Do you remember her name?

Mr. MORRIS. Aida Chapman?

Mr. YATES. Yes. Are you working together? Should you both be spending money for this?

Mr. MORRIS. Mr. Kennedy and I have had conversations, both of us, with Miss Chapman and others at the Endowment. Their goals are potentially compatible with ours.

Roger, would you like to speak to that?

Mr. KENNEDY. There is no overlapage because at the moment all we are doing is seeing what each of us can do best, that is, what Jim can do and what kind of space we might provide which complements what the Endowment can do or cannot do, depending on how much money they get.

The conversations are not proceeding very actively. At the moment we know that Mr. Morris can produce and we know we have a barn to occupy with performing activity. However, we don't know exactly what it is they will be able to do.

Mr. YATES. What is it that she wants to do?

Mr. KENNEDY. Those conversations just about got to the point where we were going to ask that question ourselves when it was suggested to us that they would have to find out whether they had

any money to do whatever they wanted to do before they thought they wanted to talk to us anymore.

Mr. MORRIS. According to the position paper developed by the jazz panel of the Endowment, their goal is to establish a permanent presence for jazz.

Mr. YATES. What do you mean by "a permanent presence"?

Mr. MORRIS. That is the conversation we never got around to. We feel that issuing 20-plus archival recordings of jazz, publishing several books on the subject, working on a book of jazz scores, a group of other publication projects down the line, and developing a repertory jazz ensemble was an appropriate presence. They may be looking for something else.

Mr. KENNEDY. All of us feel that American music belongs in Washington on a regular sustained basis presented in a dignified way so that the public has access to all the major branches of American music. We are for that.

We have certain facilities which we are trying to use in the best way we can to do that. We raise privately a lot of the money for special musical programs, some of which some people here have seen.

Our traditional programs in our museum started with the instrument and worked out from the instrument to the performer.

Jim's operations tend to start with the musical form and work back toward the instrument.

Mr. MORRIS. That is right.

Mr. KENNEDY. What we work out with the NEA will, I should think, depend very much upon whether there is a place to which Americans can go not only to hear music but see the artifacts associated with the making of that music. You can think of a lot of examples such as Louie Armstrong's trumpet. That is about as far as we have gotten with these discussions.

Our object is to present to the public, in a place where they can kind of expect it, those artifacts which are associated with the making of American music and American music being actually made with those artifacts, which is part of Jim's shop.

Mr. YATES. Are you talking about a national museum?

Mr. KENNEDY. Space in the National Museum of American History of which music is part.

FOLKLIFE PERFORMANCES

Mr. YATES. Is there duplication between your performance programs and those of the Library of Congress? They have a Folklife festival and so do you.

Mr. MORRIS. We do not duplicate.

Mr. RIPLEY. I suggest, Mr. Chairman, that the creation of that Folklife Center which is seated in the Library of Congress led to the differentiation quite clearly between responsibilities which were to be performed by the Smithsonian and those assigned to others in this triumvirate.

Mr. YATES. Which triumvirate?

Mr. RIPLEY. The one forming the Trustees of the American Folklife Center. It was set up under legislation, put forward and finally adopted in Congress. This was to be vested in the Library of Congress. They in effect preserve documents. We in effect conduct

performances, either through the performing arts, a festival, or encouraging them, and the NEA has the third part of the triumvirate, that is, paying for other performances throughout the country.

Mr. YATES. If you have performances, why are they performing? I see them performing Folklife folk music on the plaza of Congress periodically.

Mr. RIPLEY. I hope this is not somehow or other some kind of competitive or overlapping activity.

Mr. YATES. That is why I asked the question. I have the impression it is in the nature of an overlapping activity.

Mr. RIPLEY. Perhaps Ralph Rinzler can answer that. He usually sits in for me at these meetings. I was part of the initiation.

Mr. RINZLER. We have recently signed an agreement coordinated by the Federal Council on the Arts and Humanities outlining the specific role of the endowments, the Smithsonian and Library of Congress.

While the Library does do symbolic performances four times a year, five times a year, in the warm weather months, the Smithsonian does living exhibitions including the annual festival. The Library concerts come out of research which either they or others do. In fact we help them with concerts sometimes by providing background research information. The Library also gives us results of its field research for use in the presentation of exhibits like the one currently in the Museum of History and Technology, the Museum of American History now, called Buckaroo.

The Smithsonian carries on research in the field which leads to performances which are much more heavily documented with photo exhibits and scholarly articles than the more entertainment-oriented performances which take place in a casual atmosphere such as the steps of the Capitol.

Mr. YATES. Thank you, Mr. Morris.

SMITHSONIAN ANNUAL REPORT

Now we have the Smithsonian Institution Press. What is the total cost of paying for The Smithsonian Year?

Mr. RIPLEY. That is the annual report to the Congress.

Mr. YATES. The little red book, or the big red book.

Mr. MACDONNELL. It is a little one and a big one. Total cost is expected to be about $75,000 in fiscal year 1982.

Mr. YATES. That is a report required by legislation?

Mr. RIPLEY. Required under the statute.

OFFICE OF HORTICULTURE

Mr. YATES. How expensive is the operation of your Horticulture Department?

Mr. PERROT. Approximately a million dollars a year.

Mr. YATES. Is that not increasing all the time?

Mr. PERROT. We envisage horticulture as more than the maintenance of grounds and plantings. The discipline of horticulture requires understanding of the history of plant usage, particularly when they are used for the enhancement of exhibits in the build-

ings. Research in the history of floral arrangements can assist our curatorial staff to better interpret a given period in history.

Costs are going up, especially the costs of supplies.

Mr. YATES. I am sure they are. Does SITES pay for itself?

SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

Mr. PERROT. SITES receives a subsidy from the Trust Funds of the Institution in addition to the Federal appropriation and in addition to the income from rental fees which we try to keep at a minimum. Federal funds are used to underwrite part of the shipping expenses and the basic staff. This is supplemented by trust fund appropriation.

Mr. YATES. Does it pay for itself?

Mr. PERROT. We are running at a slight deficit, which is compensated by the trust fund side for the time being. We are requesting an increase in the coming year to make up principally for the increased costs of transportation as well as improve the educational value of these exhibits. This is now more necessary than ever before inasmuch as museums, undoubtedly, will be feeling the "pinch" increasingly in carrying out their activities.

Mr. YATES. Who prepares this book?

Mr. RIPLEY. Have you met our new director, Ms. Loar?

Mr. YATES. Yes. Are these beautiful catalogs called "Update" sold? Do you distribute them?

Mr. PERROT. These catalogs are sent to a rather large mailing list, museums and related organizations, so they may attain a better understanding of the offerings of SITES.

Ms. Loar can provide additional information.

Mr. YATES. We would love to hear from her.

Ms. LOAR. They are sent to over 6,000 museums, galleries and other institutions and organizations. There is no charge for it. Update is our annual catalog of exhibitions which are available to American museums as well as museums abroad.

Mr. YATES. How extensive is the Ratner Collection of Antiquities? Does anybody know?

Ms. LOAR. In terms of what we circulated or total collection?

Mr. YATES. It states here number of pieces 176 objects. How do you travel these delicate things?

Ms. LOAR. We have developed very complete specifications for crating and packing which are now used extensively in the museum field across the country. These specifications have set a standard for the profession. We also do it with great care and delicacy.

Mr. YATES. I would think so. I can see why the fee is high, $3,000 for this exhibit. How much breakage do you have?

Ms. LOAR. We have had very few claims. As a matter of fact, our porcelain and glass shows are the most successful in terms of no claims.

Mr. YATES. This is a beautiful magazine.

Thank you, Ms. Loar.

MUSEUM SUPPORT CENTER CONSTRUCTION

How is your building coming along, support and inventory?

Mr. PERROT. Ground has been broken.
Mr. YATES. Not formally yet?
Mr. PERROT. No.
Mr. YATES. Will you have a formal groundbreaking?
Mr. PERROT. No, only a cornerstone ceremony. The date has not yet been set but we hope it will be within the next few months. We will inform you and members of the committee in plenty of time so that you might be present. Everything is proceeding on schedule, thanks to you.

COLLECTIONS INVENTORY

I expect this building will be ready by the end of calendar 1982 and occupancy early in 1983. We have every indication now, thanks to your revised contribution, that it will be within the budget which has been allotted.

Concerning inventory, we are moving ahead on schedule with a target date of 1983 for all but two of the major museums, the Museum of Natural History and some aspects of American History. The inventory will continue beyond that date for those, two, but we will have a definite statement to make about the collections we own, all of the important pieces will have been accounted for, and the reconciliation of records will then proceed in subsequent years. We are on schedule.

May I add, in relation to the collections management of the Institution that our museums have been asked to develop a statement concerning their acquisitions policies, the reasons for these policies, the kinds of review that take place in the acquisition of objects, the disposition of objects, who is responsible for what, and this is now in effect. A final document, bringing together all of these policies, will be ready for publication no later than October of this year. Policies are now in effect and are being refined to be sure that nothing has been omitted.

Mr. YATES. Have any losses been discovered through the inventorying process? As far as the committee knows at the present time the only losses suffered by the Smithsonian recently from these collections were the snuff box, a silver sugar bowl which Mr. Blitzer had lost was there a silver—sugar bowl you lost?
Mr. BLITZER. Yes.
Mr. YATES. Those have not yet been recovered?
Mr. BLITZER. No.
Mr. YATES. Mr. Kennedy mentioned George Washington's sword.
Mr. KENNEDY. Commodore Biddle's, I think.
Mr. YATES. There were four objects you lost?
Mr. KENNEDY. Two medals, two swords, and some gold toothpicks.
Mr. YATES. Have there been any other losses suffered by the Smithsonian that the committee does not know about?
Mr. RIPLEY. We lost a silver pen which had been used at the signing of a treaty sometime back by John Hay as Secretary of State.
Mr. YATES. Those are the only losses out of the 75 million objects?
Mr. RIPLEY. Yes.
Mr. YATES. Is that right?

Mr. RIPLEY. As far as we know.

Mr. YATES. Nothing more has come out of the inventory?

Mr. PERROT. Nothing has come from the inventory.

Mr. YATES. If you take inventory for the first time you don't know what is missing, do you?

Mr. PERROT. I think our curators are astute and dedicated enough to keep track of the most important objects in the collections.

Mr. YATES. Once inventories are in place, then the problems begin.

Anything else you want to tell us about your program, Paul, that we should know?

Mr. PERROT. No. You will have noted that some positions have been reduced in conservation. These positions are reduced for 1982. We hope to restore them in 1983. They will be critical to execute satisfactorily, the conservation work we intend to perform at the Support Center.

We believe the deferral for a year will not be hurtful but anything beyond that would definitely be so, so we will return next year, sir, requesting these positions.

MUSEUM SUPPORT CENTER EQUIPMENT

Mr. YATES. What about the equipment of the Support Center?

Mr. PERROT. The equipment phase of the Support Center is on schedule. We have let a contract for the development of the detailed plans. We expect to have, shortly, specifications for the prototype. We have in the budget funds to start acquiring material and start building the system which will be ready to start being plugged into the building as soon as it is completed, toward the middle of 1982 probably. It is essential that we keep on track with the budget since we do not want to be phasing into a building with no equipment to put into it.

Mr. YATES. That often happens in government. EDA keeps building Indian clinics and then does not provide for staffing them.

Mr. PERROT. We have millions of "patients" waiting to be transferred to proper facilities, Mr. Chairman. We will be pushing.

Mr. YATES. You refer in your justifications to working drawings and sketches for the building. Who does the planning for the racks, cabinets, storage facilities on the inside? Do you have a staff doing that or do you let it out on contract? Does GSA do it?

Mr. PERROT. We are doing it in all of those ways. We have an internal staff working out all of the specifications. We have a contract with the FMC Corporation, through GSA. They will design the system which will include air circulation, security and fire extinguishing systems.

This is being worked out in intimate association with key members of my staff.

Mr. YATES. How advanced are those drawings and specifications for the interior?

Mr. PERROT. The specifications are progressing. Drawings are still at the conceptual stage.

Mr. YATES. Can you order? The committee appropriated $2,711,000 last year for the purpose of providing you with funds to

carry on the equipping of the museum support center. You are requesting $4,495,000 for next year.

Do you need all that money in view of the fact you are still drawing specifications?

Mr. PERROT. We expect to let a contract this year. There is economy in order of magnitude, in addition to the fact that earlier parts of the system will cost much more than those parts which will be acquired over future years. Therefore, we have calculated that this money is essential if we are not only to proceed with the design and construction but have enough equipment ready to put into the building by the time it is completed.

As you know, we have a rather strict time table for the removal of collections from the Museum of Natural History, establishment of the conservation program, and anthropoligical laboratory policy as well as for the Museum of American History.

ENERGY SAVING DEVICES FOR MUSEUM SUPPORT CENTER

Mr. YATES. Will there be windows in this facility?

Mr. PERROT. Virtually no windows in the storage areas. There will be in the laboratories and office spaces. These windows will be sealed.

Mr. YATES. Will you be using energy-saving devices in this facility to relieve you of the prospective cost of air conditioning and heating?

Mr. PERROT. We will have massive air conditioning needs but the building is being designed to effect energy savings to the maximum extent possible. That is one of the reasons the storage components will be "non-people" areas and will not be easily accessible. However, there will be especially heavy insulation in the roof and walls.

SECURITY AT THE MUSEUM SUPPORT CENTER

Mr. YATES. How about security? How will you secure this facility? The site plan I have here shows rather large installations. Are these trees?

Mr. PERROT. Yes. There will be perimeter security and there will be overall security within the buildings. There will be zoning. There will be areas accessible only through special keys or special codes, punched codes. We expect to have absolute human control and mechanical control on everything that goes into that building at all stages. We expect compliance to be very strict to be sure not only that unauthorized people do not get in, but unauthorized insects also. Everything will be fumigated.

Mr. YATES. I take it the inventory will be completed before the materials have to be moved?

Mr. PERROT. Not an item will be moved to that building prior to having been inventoried. It will be reinventoried when it comes in and located through a master system.

ADDITIONAL EQUIPMENT AND OPERATING COSTS

Mr. YATES. Do you yet know what the total cost for equipment for the support center will be?

Mr. PERROT. We estimate through 1986 that approximately $17 million will be required. This will include the storage system, conservation equipment, and laboratory equipment.

Mr. YATES. Will you have further requirements beyond that?

Mr. PERROT. We will then continue to fill in those parts of the building which will not have been filled, which will be approximately 35 percent of the space, divided among four bays and three stories. The system will advance three floors at a time, not floor by floor.

Mr. YATES. Does each facility require its own custodial and maintenance equipment?

Mr. PERROT. I believe so, Mr. Chairman. Some services are provided centrally but most custodial services are provided by each museum. My colleague from History and Art reminds me that the National Museum of American Art and the National Portrait Gallery share their custodial staffs.

Mr. YATES. Thank you, Paul.

Mr. PERROT. Thank you, Mr. Chairman.

MICROFILM PROGRAM

Mr. YATES. How long do you intend your microfilm program to last? Does this go indefinitely into the future? I refer to your papers.

Mr. BLITZER. Indefinitely.

Mr. YATES. I imagine that would be true because you will be acquiring additional papers over the years.

Mr. BLITZER. They will be produced over the years.

Mr. YATES. What will you do for storage?

Mr. BLITZER. There isn't that much of a problem with microfilm.

Mr. YATES. I know it is small. Mr. Blitzer is very ambitious.

Mr. WOOLFENDEN. Papers are more of a problem than the microfilm.

Mr. YATES. Where are you going to put them?

Mr. WOOLFENDEN. The negative is here in Washington.

Mr. YATES. Where will you put the papers?

Mr. WOOLFENDEN. Here.

Mr. YATES. They will all be here?

Mr. WOOLFENDEN. Yes.

Mr. RIPLEY. Eventually we hope the International Trade Commission will move out of the adjacent building to the American Art and Portrait Gallery building.

Mr. YATES. What is that?

Mr. RIPLEY. Across the street there is a building which is adjacent to us and which has an underground tunnel connecting it. We hope desperately that GSA will see fit one day to find a few thousand square feet of space for the International Trade Commission among the 3 million square feet they say they need for burgeoning offices. Maybe there will be less need for such offices and we can take over that space. It is right next door.

FOLKLIFE EXHIBITION AT THE RENWICK

Mr. YATES. How long will the Folklife exhibition at the Renwick be in place?

Mr. BLITZER. We will open about a year from now, the first half. The second half will open in the summer of 1982 and will go on altogether roughly a year.

Mr. YATES. A whole year?

Mr. BLITZER. Yes. The whole building for the whole year if funds are available.

Mr. YATES. Did the Reagan budget people approve it for a whole year?

Mr. BLITZER. Yes.

Mr. YATES. How did you escape the cut when the arts and humanities were hit so hard?

No response.

Mr. RIPLEY. We do think we had quite a good cut in the process, Mr. Chairman.

Mr. YATES. You have?

Mr. RIPLEY. We mentioned yesterday close to $37 million or more.

Mr. YATES. You mean the $24 million?

Mr. RIPLEY. $26 million and 96 positions cut by the Reagan budget. There was a reduction of about $11 million in the earlier go-round.

Mr. YATES. I thought it was $24 million.

Mr. RIPLEY. About $11 million in the first go-round, and $26 million under the Reagan budget. It comes to about $37 million.

RESEARCH AWARDS PROGRAM

Mr. YATES. Have you lost any personnel as a result of not carrying on the Smithsonian Research Award Program?

Mr. CHALLINOR. No personnel are hired under the Smithsonian Research Award Program nor ever have been.

Mr. YATES. As I remember what you told us years ago——

Mr. CHALLINOR. If we didn't have the program we might lose some people. We lost a distinguished geologist to the University of Colorado. That is the first person who comes to mind.

Mr. RIPLEY. I think we have lost people, we can say unequivocally, because of less favorable grant possibilities. In other words, they cannot get funds outside. They are excluded from getting them directly from NSF. They cannot get them from foundations which are now cutting down very much on science grants. They are very good people and in high demand, so it gets to be a question of fishing or cutting bait.

Mr. YATES. Why can't you use private funds for your research?

Mr. RIPLEY. We do use some. We don't have enough.

Mr. YATES. How much do you use from your private grants?

Mr. RIPLEY. Several hundred thousand dollars, I think.

Mr. YATES. Can you tell us?

Mr. CHALLINOR. $500,000 now for another program called "Scholarly Studies," covering not only science but all the history and art and all the curators.

Mr. RIPLEY. Fluid research is another $200,000.

Mr. CHALLINOR. Up to $2,500 for each individual award.

Mr. YATES. In effect you have your grant program in place.

Mr. RIPLEY. Not enough. It is a fraction of what they could get if they were out in the field.

Mr. YATES. What does that mean? You don't give them very much money throughout the program?

Mr. CHALLINOR. They cannot compete for that much money which they would have available to them elsewhere. That is why we want to reintroduce the awards program.

Mr. YATES. Why not provide extra funds out of the trust fund?

Mr. CHALLINOR. We provide some.

Mr. YATES. That is what Mr. Ripley says.

Mr. CHALLINOR. We feel this is an equitable distribution for research support from both the Federal Government and trust funds.

Mr. RIPLEY. These people are already in place in these jobs because of the Federal bounty, and we feel they are entitled to apply for Federal research funds.

NATIVE AMERICAN PROGRAM

Mr. YATES. Who benefits from the increase of $300,000 here? I refer to the native American program.

Mr. PERROT. The Native American community will benefit from this program both through the training and workshops we intend to give in various parts of the country, through a series of exhibitions selected from our own collection, as well as through advice given to Native American museums on problems of conservation and other aspects of museum management.

There is also a small increment for the acquisition of contemporary Native American artifacts which will be circulated throughout those communities.

EQUAL OPPORTUNITY PROGRAM

Mr. YATES. How much is presently available for the Office of Equal Opportunity? You want $57,000.

Mr. YELLIN. That office has a base of $309,000 Federal dollars and $119,000 unrestricted trust fund dollars.

Mr. YATES. What has that office done that we can point to with pride? Anything specific?

Mr. JAMESON. Its principal role is to be of help to the Institution in terms of equal opportunity and affirmative action programs in terms of new hires to the Institution and programs for the existing staff.

One thing I would mention particularly which has started this year. We have had two incoming classes in a cooperative education program. We have had five students come on board in September, five additional students came on board this January, and we would expect to repeat that and approximate that level later this year. We are building to a total of some 20–30 students.

Mr. POWERS. This office is extremely helpful to our office. It has a network of consultants and advisors in the equal opportunity area.

The state of the law is not widely understood by employees. They don't know their rights. The consultants have done an excellent job in listening to people's complaints and advising them of what their rights are and in trying to conciliate whenever possible.

OFFICE OF PROTECTION SERVICES

Mr. YATES. What is the authorized security position number for the Office of Protective Services?

Mr. PEYTON. With recent cuts already discussed we will be expecting 555 permanent full-time positions in fiscal year 1982. Approximately 500 of these are guards.

Mr. YATES. Are all those positions filled?

Mr. PEYTON. Yes, sir.

Mr. YATES. What is the turnover in security positions? What is the turnover rate?

Mr. PEYTON. The annual turnover rate is approximately 23 percent.

Mr. YATES. What about the salaries that you pay by comparison to the guards at the National Gallery?

Mr. PEYTON. I don't know that. We can provide it.

Mr. RIPLEY. We are lower, I know.

Mr. YATES. Put that in the record.

[The information follows:]

COMPARISON OF SALARIES FOR SECURITY POSITIONS

The salaries for uniformed security positions at both the Smithsonian and the National Gallery of Art are the same. For both, the journeyman level is GS-4, and night-time and special security posts are staffed at the GS-5 level.

EQUAL OPPORTUNITY

Mr. HUGHES. A further comment on equal opportunity. While the overall employment picture of the Smithsonian is rather good, it reflects a heavy employment of minorities in the protective and custodial jobs.

Where we have had difficulty over the years is in professional positions, particularly scientific professional positions, and our network of employees within the Institution does not reach out adequately, and not historically, to the minority institutions and groups where we might find qualified minority employees, particularly in the professional and scientific grades.

The Office of Equal Opportunity has been of considerable help in gaining, slowly but somewhat, in the scientific and professional areas. Progress is slow because the base is not there, but that office has been helpful in identifying people who are out there.

SPECIAL FOREIGN CURRENCY PROGRAM

Mr. YATES. We asked you about the agreement with the Government of Pakistan on special foreign currency. What is the status of that agreement?

Mr. PERROT. The International campaign has produced approximately $1,400,000 in hard currency. The Government of Pakistan has committed twice that amount to start work. Work has started. It has been a slow process due to the political and economic difficulties in that country.

However, we are confident, if stability is maintained at the present level, that work will proceed and some of the emergency aspects of this project will go on.

The total project is scheduled to last four to five years.

Mr. YATES. Will you ask for additional money or would $1 million cover that?

Mr. PERROT. The plan is to ask for $1 million for each of four years, to a total of $4 million. The total project is estimated at between $13 and $14 million.

Mr. YATES. How much blocked currencies are available for Pakistan now?

Mr. PERROT. I cannot answer that now.

Mr. YATES. Supply it for the record.

[Material to be supplied follows:]

PAKISTANI RUPEES

As of December 31, 1980, there were $180.2 million equivalent in Pakistani rupees available for United States use.

Mr. YATES. How many Indian rupees are available?

Mr. PERROT. I will supply that as well.

[The information follows:]

INDIAN RUPEES

As of December 31, 1980, there were $706.7 million equivalent in Indian rupees available for United States use.

AMERICAN INSTITUTE OF INDIAN STUDIES

Mr. YATES. Is the goal of the reserve for the American Institute of Indian Studies still $4 million?

Mr. BLITZER. It is to accumulate enough rupees to operate for five years after the rupee no longer is an excess currency.

Mr. YATES. How much money is involved?

Mr. BLITZER. It could be as much as a total of $20 million. The more there is the longer they can hold on and try to seek American funding.

I might point out, Mr. Chairman, I had a copy of a letter that the president of the American Institute of Indian Studies had written, I think to this committee, where he pointed out that in a sense these are funds which already have been appropriated by the Congress. The issue now is one of allocation.

Mr. YATES. That letter may go into the record, Mr. Blitzer.

[The information follows:]

AMERICAN INSTITUTE OF INDIAN STUDIES,
Chicago, Ill., March 9, 1981.

Hon. SIDNEY YATES,
House of Representatives,
Washington, D.C.

DEAR MR. YATES: It has come to my attention only recently that on March 11 your Appropriations Sub-committee will be hearing the submission of the Smithsonian Institution. I therefore hasten, on behalf of the American Institute of Indian Studies, to send an overdue note of appreciation and petition. Our appreciation, of course is of the fact of your, and your Sub-committee's, understanding of the importance of the Smithsonian foreign currency program to the American Institute's endeavors in India—endeavors which have as their goal both scholarship and increased international understanding. And our petition is that the clarity of this understanding continue unclouded by general economic necessities. For, as you well know, U.S.-owned foreign currency has already been appropriated and paid for by the U.S. taxpayer, and is not an area in which economy is desirable or even possible, for the fund is being eroded by inflation in India. It might even be argued that true economy would suggest that the fund be allocated as rapidly as is reasonable.

I would urge that the best use of the dwindling fund is for American educational purposes, and that the American Institute provides a means by which its 35 constituent universities can improve themselves without dollar expenditures: it is through the Institute that faculty and students train themselves in various disciplines, including language. These individuals in turn train not only students and others at their own institutions, but through guest lecturing and through the public media inform a great number of other Americans about a nation and culture of increasing importance to the West.

Another aspect of the Institute's work has been brought home by an article in the March 9 issue of TIME magazine. Part of the 2nd paragraph on p. 15 reads: "Every day, around the globe, the hearts and minds of people like Deepak Kumar (a Delhi schoolboy)—as well as his parents and friends—are reached on a battle field in the East-West struggle where words are the chief weapons . . . Through a propaganda effort perhaps seven times as large as that of the U.S., and with more sophistication than ever before, (the Soviets) are doing just that." Through bi-national seminars, low-priced and high quality publications, and its Fellowship programs, which send over 100 American artists and scholars to India every year, the Institute is exposing India to the best of American thought and individuals who are concerned and committed, not for propaganda purposes, but to a genuine desire to understand. Although it is not their primary purpose, nor the primary purpose of the Institute, these, I would submit, are the best ambassadors we could have.

Our hope, sir, is that your sympathy with these ends will allow you to continue to support the Smithsonian's foreign currency request in both its aspects: for the upcoming fiscal year, and for the forward funded reserve, which will allow the Institute time, after the expiration of the fund, to find other sources to allow it to continue the work which, in our deeply held opinion, is greatly to the benefit of both nations.

For the Trustees of the American Institute of Indian Studies, I am
Yours sincerely,

EDWARD C. DIMOCK, Jr.
President.

Mr. BLITZER. These are rupees.

QUADRANGLE DEVELOPMENT

Mr. YATES. Let's turn to the quadrangle. Explain what the design situation is. I have read articles in the press which have been somewhat confusing. I read an article by Mr. Von Eckhardt in which he seemed to commend the design but said it is fine that the design is being changed.

Then I read an article later by the Planning Commission in which they said that the design is going to be changed.

Can you tell us what the situation is respecting design changes?

Mr. RIPLEY. I think the pros and cons that you read in the newspaper have to do with refinements or possible refinements of the basic surface design, nothing to do with the function of the proposal, a large part of which the most effective part of which is under the ground.

Nowadays there is a considerable number of committees which get into the discussion stage of any design involving public space in Washington, ranging from historic preservation committees right on through to sidewalk supervisors who want to get very much involved in the act.

The one question that has occurred to a number of people about the design is the placement of the two exterior buildings on the surface, their relative size and scale, and the way that they comport to the existing space. I think a great deal of this falls into the realm of aesthetics and is open, of course, to endless argument.

We think that the design in which we have been very open to criticism—which we have accepted in a very welcome way—is moving toward a highly acceptable solution of the critics.

Mr. YATES. We have not yet had an opportunity to ask the National Capital Planning Commission about the design. They will appear before us for their appropriation.

It is kind of interesting that The Washington Post of December 4th, under the headline "Underground Art Museums Opposed" has an article criticizing the design.

The Washington Post of January 9, 1981, under the headline "Underground Museums Approved" has the design approved by the top level people in the National Capital Planning Commission.

I think probably for those who want to read up on it these two articles should go into the record.

[The articles follow:]

UNDERGROUND ART MUSEUMS OPPOSED

(By Paul Hodge)

The Smithsonian Institution's plans to build two largely underground museums on the Mall—one for African art and another for Eastern art—have been opposed unanimously by the Joint Committee on Landmarks as "alien architectural elements" that would ruin the Mall's only historic buildings, the 1855 Smithsonian "Castle" and the 1881 Arts and Industries Building.

The criticism by the Joint Committee, the city's 13-member historic preservation advisory board, comes after two months of reviewing comment on the proposed museum designs from the Department of Interior, the Environmental Protection Agency, the Sierra Club, and the prestigious Committee of 100 on the Federal City. Most of the reaction was negative.

More than 90 percent of the space in the two museums would be underground, with two 2-story pavilions above ground in the four-acre quadrangle, or South Yard, behind the Smithsonian Castle. A Victorian garden and a 140-car parking lot for Smithsonian employes now occupy the quadrangle, which is surrounded by the Freer Gallery of Art, the Castle, the Arts and Industries Building and Independence Avenue.

The cost of the $50 million project would be split evenly between the federal government and the Smithsonian, through donations and funds raised by its museums and projects.

The Joint Committee has opposed the proposed pavilions, buried light wells, walls and underground parking lot ramps as disruptive and stylistically out of place beside the 19th century buildings.

Lawrence Taylor, spokesman for the Smithsonian, said this week that "there is a difference of opinion over the aesthetic effect" the two museums would have on the Castle and the Mall. But he said the Smithsonian is continuing to make changes in the museums' design and hopes that, despite the criticism, the plan will be approved at the January meeting of the National Capital Planning Commission.

The Smithsonian already has reduced the proposed length of the two pavilions and eliminated the light wells—large, glass-walled pits designed to admit light into the museums' underground levels.

NCPC, Washington's federal planning agency, which has veto power over the museum proposals, is advised by the Joint Committee on Landmarks and by Washington's major arbiter of building style and asethetics, the Fine Arts Commission.

Fine Arts already has given general approval to the concept of the two museums at its meeting last April, but also expressed reservations about the light wells, the size of the pavilions, and a garden that would replace the present Victorian garden and be planted on top of the underground museum building.

The Joint Committee, however, was scathing in its opposition to the two museums, and said in its November report to NCPC that "the Committee finds this proposal to be so adverse that it recommends reevaluation of the entire concept" of building in the quadrangle.

"It seems particularly inappropriate to remove the Museum of African Art from its present inadequate and cramped though historically rich quarters in the Frederick Douglass House on Capitol Hill to this anonymous and meaningless location in the garden of the Smithsonian Castle," the Joint Committee report said.

It urged as have several groups such as the Sierra Club and the Committee of 100—Washington's first planning agency founded in 1923—that a new Museum of African Art should go near the Gallery Place Metro stop, close to the National Portrait Gallery and the Smithsonian's newly named National Museum of Ameri-

can Art (formerly National Collection of Fine Arts). The District's new art center soon will open nearby in the old Lansburgs department store and many private art galleries are moving into the area.

"At this time neither American art nor African art is represented on the Mall," the Committee of 100 wrote in commenting on the project. "It is difficult to believe that the Museum of African Art can have a 'presence' on the Mall if it is located in a far corner of the quadrangle and is mostly underground."

The Interior Department has urged that the height of the pavilions be lowered, and the Environmental Protection Agency has objected to the extensive underground parking facility proposed for tourists and Smithsonian staff. The EPA contends that the 350-space parking lot would encourage visitors to drive to the Mall, already one of Washington's worst areas of air pollution, although the museum would be almost directly adjacent to Metro's Smithsonian station.

While the Joint Committee objected to the two-story pavilions and the walls surrounding them, "visually isolating the Smithsonian Building from the city," it praised the proposed elimination of the surface parking lot and the underground museum space for the Freer.

The Freer, which houses one of the world's great collections of Oriental art, would become the nucleus of the new center for Eastern Art. Japan already has promised a $1 million gift to help build the center. The Freer is now too small to house visiting exhibitions.

UNDERGROUND MUSEUMS APPROVED—SMITHSONIAN PROJECT WOULD HOUSE AFRICAN, EASTERN ART COLLECTIONS

(By Paul Hodge)

The National Capital Planning Commission yesterday approved construction of a $50 million underground complex on the edge of the Mall to house two new Smithsonian Institution museums—one for African art and one for Eastern art.

The subterranean building just south of the present Smithsonian castle on Independence Avenue SW would become the new home of the Museum of African Art currently housed in the Frederick Douglass house on Capitol Hill and in several adjacent town houses. The Eastern art portion of the complex would be an extension of the nearby Freer Gallery and hold various oriental collections.

Except for funding and approval of the exact design of the building, yesterday's planning commission action gives the Smithsonian the final governmental blessing needed to proceed with the project.

The Smithsonian already has pledges of $5 million from foreign nations and will ask Congress this spring for authorization and $25 million to build the museum. The Smithsonian expects to raise the remaining $20 million from private sources.

More than 95 percent of the new 460,000-square-foot museum will be built below ground with two small above-ground pavilions to serve as entrances. It also will house an underground public parking lot and office space for other Smithsonian activities.

The four-acre site, now a formal Victorian garden and an employee parking lot, is bordered by Independence Avenue and the Smithsonian's three most historic buildings—the original 1855 castle, the Arts and Industries Building, built in 1881, and the Freer Gallery of Art, built in 1923.

While approving the location of the new museum complex, the federal planning agency deferred for further study the controversy about whether the complex should temporarily or permanently house the African arts museum.

The NCPC staff, the Joint Committee on Landmarks and the city's prestigious Committee of 100 on the Federal City had strongly recommended against putting the African Museum underground near the Mall because, they argued, it would not give the museum sufficient prominence.

All urged the Smithsonian to consider a downtown location near the Gallery Place Metro subway station where the Smithsonian already has two major museums, the National Portrait Gallery and National Museum of American Art (formerly National Collection of Fine Arts) and where numerous private art galleries also are situated.

But Warren Robbins, who established the African Museum in 1964 and has been its director since the Smithsonian acquired his African collection in 1979, warned the planning commission yesterday that if it did not approve the proposed underground museum now, "We stand to lose it.

"You would be selling the museum down the river," he said, because two years of planning, gifts and collections pledged for it and the momentum to build the museum could be lost.

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Robbins and Smithsonian officials oppose a downtown site because, Robbins said, "it belongs on the Mall, symbolically and because there it could attract not just 100,000 visitors a year but 1 to 2 million."

Smithsonian Secretary S. Dillon Ripley and several nationally prominent architects also spoke for the project. Ripley said that, while the Smithsonian saw the underground building as an excellent site for the African museum, it might be moved to an even larger building in the future as the African collection grows.

"Remember that the castle once housed the entire museum and staff, some of whom lived there," Ripley said. "Other collections were once housed in freight cars on the Mall till the Arts and Industries Building was built, and what is now the National Air and Space Museum was housed in quonset huts."

The specific detailed design of the underground building and the pavilions and garden that will go above it still must be approved by the planning commission as well as the Fine Arts Commission and the Joint Committee on Landmarks. Officials say they expect no major obstacles.

Yesterday's planning commission vote called on the Smithsonian to give further study to reducing the size of the pavilions and two walls proposed to go along Independence Avenue, relocating the underground parking garage entrance and studying the problem of growing large trees on top of an underground building.

Commission members said they were concerned that the large pavilions and walls would act as barriers, blocking the view of the historic Smithsonian buildings from Independence Avenue.

THE SMITHSONIAN'S DESIGNS ON THE MALL—EXPANDED HORIZONS AND A QUEST FOR MORE SPACE

(By Wolf Von Eckardt)

Should the Smithsonian dig in?

The venerable institution's secretary, S. Dillon Ripley, would like to enlarge the Freer Gallery and put Africa on the Mall, so to speak.

Ripley and his architects propose to create half a million square feet of underground museum, administrative and parking space south of the Smithsonian Castle. Above it would be a quadrangle in the English college tradition.

"You will recall," says Ripley, "James Smithson wanted us to be 'a college of discoverers.'"

And, indeed, as sketched by the noted Japanese architect Junzo Yoshimura and refined by Boston architect Jean Paul Carlihan of Shepley Bulfinch Richardson and Abbott, the proposed garden court promises an almost intimate, academic air—a nice change of atmosphere from the grand vastness of the Mall.

The quadrangle would be formed by the castle to the north, the Arts and Industries Building to the east, the Freer Gallery to the west and two new, small buildings flanking an entrance from Independence Avenue to the south. Between them would be the original entrance gates James Renwick designed for the castle. The gap between castle and Freer would be closed by a small pavilion—"un pavilion de garde," Carlihan, who was trained at the Ecole des Beaux Arts in Paris, calls it.

Before the National Air and Space Museum was opened, this area was a messy dump of rockets, missiles and Quonset huts, Now, half of it is adorned by a lovely Victorian garden and the other half by a parking lot. The quadrangle idea would considerably enlarge the garden.

The new buildings are the symbolic iceberg tips, as it were, of a new Museum of African Art and a new Center for Eastern Art. In addition to exhibition space, three underground levels will also accommodate an education center, a rare-book library, sundry offices and 350 cars.

The Fine Arts Commission is generally happy with this $50 million idea. In other quarters, however, there is much muddled opposition.

Some quibble about the design, mostly because in their hearts they do not want to see anything built on the Mall. Others just do not want the Museum of African Art on the Mall. They want to see it downtown.

I, too, quibble a bit with the design, although I most emphatically want to see the scheme built.

In his first model, which is what the opponents saw, Carlihan brought light into the subterranean spaces with large, deep, glass-enclosed light wells. They would not have added much to the museums. (What provides relief from air and light-conditioned museum tedium is the sky and the real world, not the landscaped bottom of a pit.) And they would have badly chopped up the quadrangle grounds.

In the course of further study, Carlihan has replaced these holes with small skylights which, he says, provide just as much daylight below and can be screened by shrubbery.

The present proposal also attempts to give the architectural design of the Center for Eastern Art an Oriental, and the Museum of African Art an African flavor. It makes the place look like a second-class world's fair.

It works better for the East, because a pagoda is a strong form that you can modernize without confusing it altogether with a Chinese turnpike restaurant. It does not work at all for the African pavilion. An African adobe hut just cannot be blown up in reinforced concrete. It's just hokum.

It is going to be tough to find a form for these entrance pavilions—and that's what they are—that gets along with a romantic Romanesque castle (the Smithsonian), a High Victorian factory (Arts and Industry) and a bland, neo-neo-Classic temple (the Freer), and at the same time has some symbolic meaning.

As Le Corbusier said, "Creation is a patient search." Carlihan, I think, is willing to keep searching if only we are patient enough to let him. Many aspects of his design-particularly the ramp entrance to the parking garage—are sensitive and ingenious and warrant our confidence.

The agitation to place the Museum of African Art downtown—in some worthy old church or warehouse, I suppose—has a flimsy emotional appeal, emotional sympathy for the residents of a predominantly black city. But symbolically and practically, it makes no sense whatsoever.

The museum is the almost single-handed work of one man, Warren M. Robbins. He says building a new African museum on the Smithsonian Quadrangle "is a marvelous idea."

Where were all the people who now feel possessive about the museum when we were struggling to build it?" Robbins asks.

He built it in the old Frederick Douglass house on Capital Hill, taking over one adjacent townhouse after another. Now there are no more townhouses to expand into. Besides, the museum's scholarship and reputation reached the point, two years ago, where it became the logical nucleus for a national museum of African art.

As such, the place for it is in the monumental heart of the nation's capital, with our other national museums and alongside our enlarged museum of Asian Art. It is the only place which can properly symbolize the nation's recognition of Africa's culture as well as its newly independent nations.

As Robbins says, if the museum is located somewhere near the Gallery Place subway stop, as some people suggest, it will be visited only by people who seek it out, at best thousands. On the Mall, however, it will be visited by hundreds of thousands, people who had no intention of coming. "And those are the people we want," says Robbins, who remains the museum's director.

His chief problem is space. "We need about five times as much space as we have now," he says. "And we need it soon to accommodate several important collections that we have been promised on condition that we can properly display them.

"The Smithsonian is going to build suitable museum space for the Eastern art anyway," Robbins says. "And that will have to be next to the Freer on the quadrangle. It is only logical and economical to put us along with it.

All this talk of putting us downtown could scuttle the whole idea of a museum of African art."

So could the National Capital Planning Commission, which will consider the scheme next month. It has veto power. And it must realize that if it does not pass the present proposal in some form or another, there will be no Museum of African Art or Center of Eastern Art for another generation.

Although the Japanese and other foreign governments have already contributed funds, it will be hard enough to get money from the American government to build the Smithsonian Quadrangle.

It would seem impossible to get the money to build the museums anywhere else.

APPROVED DESIGN CONCEPT

Mr. RIPLEY. The design concept was approved by the Commission on January 8th. We have a great way to go, more going back to these commissions, Fine Arts Commission, National Capital Planning Commission, and so on. We feel confident, much more confident now that they have actually approved the concept.

Mr. YATES. I have finished my questions. Do you have any additional comments you wish to make or which any of your happy band wishes to make?

Mr. RIPLEY. As far as I am concerned I can merely say that I hope you have understood how grateful we are about getting the museum support center under way. This has been a tremendous achievement.

Mr. YATES. I know that.

Mr. RIPLEY. I emphasized that in my remarks.

Mr. YATES. The committee is very much aware of that and the importance of that institution for the wellbeing of the Smithsonian. That is why the committee took the action it did last year in providing the additional funds, so that the purposes of the Smithsonian would not be impaired or minimized as a result of inflationary cost increases.

Mr. RIPLEY. We are very happy about that. I can only say in regard to the roof problem which consumed most of this morning, Mr. Chairman, and which I feel is under way and in hand, we would like you to come down yourself. We will offer you a free lunch. Get up onto one of these roofs and see what it looks like.

Mr. YATES. I have seen some of the roofs.

Mr. RIPLEY. It is difficult to describe them in an overheated room, as it is here, and really have a feeling that you are anywhere near a roof.

Mr. YATES. Aren't you lucky? I sit in an overheated room day by day.

Mr. RIPLEY. That is why you should be luckier still and get a little breath of fresh air.

Mr. YATES. I appreciate the difficulties which are present with respect to the roof. I must say that I am impressed and shocked as well as appalled by the fact that something cannot be done to require contractors to build roofs which will do the job without some kind of deterioration occurring almost immediately or within a year of two or three, as has been happening to almost every Federal building where construction has taken place.

At any rate, that is all in the record. We will try our best to understand it more fully. I still have to worry about the National Visitor Center with the Secretary of Interior on the construction job.

Thank you very much for your presentations.

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

MONDAY, MARCH 16, 1981.

OFFICE OF WATER RESEARCH AND TECHNOLOGY

WITNESSES

GARY D. COBB, DIRECTOR, OFFICE OF WATER RESEARCH AND TECHNOLOGY
MANUEL MORRIS, DEPUTY DIRECTOR, OFFICE OF WATER RESEARCH AND TECHNOLOGY
WILFRED J. HAHN, ACTING ASSISTANT DIRECTOR, TECHNOLOGY DEVELOPMENT, OFFICE OF WATER RESEARCH AND TECHNOLOGY
RAYMOND A. JENSEN, ASSISTANT DIRECTOR, TECHNOLOGY AND INFORMATION TRANSFER, OFFICE OF WATER RESEARCH AND TECHNOLOGY
FRANK T. CARLSON, ASSISTANT DIRECTOR, RESEARCH, OFFICE OF WATER RESEARCH AND TECHNOLOGY
ROBERT B. BALDAUF, BUDGET OFFICER, OFFICE OF WATER RESEARCH AND TECHNOLOGY
STANLEY D. DOREMUS, CHIEF OF PROGRAM REVIEW, OFFICE OF BUDGET, OFFICE OF THE SECRETARY

Mr. YATES. The hearing will come to order on the proposed appropriations and nonappropriations for the Office of Water Research and Technology for fiscal year 1982 and decisions for 1981.

Appearing in support of that prospect are Mr. Gary Cobb, Director of OWRT; Mr. Manuel Morris, the Deputy Director; Mr. Robert Baldauf, Budget Officer; and Mr. Stanley Doremus, Chief of Program Review, Office of the Secretary.

Mr. Cobb, you have a statement and it is not a very long statement, probably the shortest one you have ever prepared, isn't it?

Mr. COBB. Yes, Mr. Chairman.

Mr. YATES. Is this a time for rejoicing or is this a time for sadness?

Mr. COBB. I think it is a very difficult time, Mr. Chairman. From my personal point of view, of course, it is kind of sad in the larger frame.

Mr. YATES. In the larger frame, who knows?

Your statement may be made a part of the record.

[The statement follows:]

STATEMENT BY GARY D. COBB, DIRECTOR, OFFICE OF WATER RESEARCH AND TECHNOLOGY, U.S. DEPARTMENT OF THE INTERIOR

Mr. Chairman and Members of the Committee, I appear today to respond to your inquiries on the administration's proposal concerning the Office of Water Research and Technology, but before I do, Mr. Chairman, I want to personally thank you for the interest you and members of this Committee have expressed and the support you have furnished over the years for water resources research and development.

Secretary Watt testified before you on March 6, informing you that all programs of the Office of Water Research and Technology will be phased out in the current fiscal year, fiscal year 1981. A rescission in the amount of $11.8 million is proposed. No funds will be requested for OWRT programs for fiscal year 1982. The

reimbursable international programs in desalting carried out through the U.S.-Saudi Arabia Joint Economic Commission and the U.S.-Israel Bilateral Agreement will be transferred to another bureau in the Department.

The State water resources research and technology Institute program, matching grants, and water resources research and development focused programs will be terminated in fiscal year 1981. The Secretary has stated: "In this era of fiscal austerity, many of the functions of the Office of Water Research and Technology should properly be the responsibility of States and private industry."

The saline water research and development program will also be terminated in fiscal year 1981. The Secretary has indicated that sufficient basic research in desalting has been completed.

The administration has identified funds appropriated for fiscal year 1981 which are in excess of those necessary to accomplish the immediate phase-out and termination of OWRT and its programs as follows:

[In thousands of dollars]

	Appropriated	Reduction	Net
I. Water Resources R. & D	15,090	−3,380	11,710
III. Saline Water R. & D	10,720	−7,470	3,250
IIII. Technology transfer and information dissemination	1,400	−950	450
IIV. General program support	3,275		3,275
Total	30,485	−11,800	18,685

I will be pleased to answer any questions, Mr. Chairman.

FISCAL YEAR 1981 RESCISSION

Mr. YATES. How much of your money had you distributed?

Mr. COBB. About $15 million, Mr. Chairman.

Mr. YATES. Out of what total?

Mr. COBB. Out of $30 million. Slightly in excess of $3 million would be left, if the rescission is approved, Mr. Chairman. That will be used in the phaseout.

Mr. YATES. What is the reason for the Administration's action, can you tell us?

Mr. COBB. Mr. Chairman, the Administration's position is specific with respect to the desalting program. We have completed basic research and it is now time for industry to pick up the responsibility for commercialization of the technology and for any additional or further research and development.

Mr. YATES. Is that true? Is industry ready to take it up?

Mr. COBB. It depends upon the specific technology involved and if I may, Mr. Chairman, I'd like to go into some detail.

Mr. YATES. I want you to.

DESALINATION TECHNOLOGY—DISTILLATION

Mr. COBB. With respect to distillation technology—a mature technology—that is, the multistage flash or MSF technology, industry has been and is prepared to pick it up; in fact, there has been a large activity in the Middle East, in the technology, as you know. Such research and development that is underway now with respect to this MSF technology, for the most part, is being financed by industry. We have had in our program some small efforts directed at very specific distillation issues, but for the most part, any devel-

opment and improvement in this technology is being carried out by industry.

There are, however, within the broad distillation technology, opportunities that have not yet been capitalized on. Basically, they involve coupling with powerplants or other sources of low-cost heat so that the technology could be more efficient.

MEMBRANE TECHNOLOGY

With respect to membrane technology, the technology for brackish water is commercial. Plants are not being sold every day, but certainly there are numbers of plants being sold. There is opportunity for improvement in the technology, to reduce costs, and to make the process overall, more efficient, but it is a technology that works.

With respect to seawater applications, membrane technology is not yet proven and much of our program has been directed to seawater development for that reason.

Mr. YATES. Then why isn't your research continued for seawater technology, and should it be? This has been one of the great yearning hopes of mankind, the ability to convert seawater into potable or usable water. Are you anywhere near that? Is your research sufficiently advanced to give you hope that perhaps you are moving in that direction?

Mr. COBB. The research is sufficiently advanced to indicate that membrane applications on seawater in the future could be very competitive. Ultimately, in my professional opinion I think the membrane industry will displace distillation technology, but we are not at that point yet.

Mr. YATES. How far away are we from that point, or don't we know?

Mr. COBB. In my judgment, Mr. Chairman, I think we are two-to-five years from having a proven technology for seawater application.

WHO IS CONDUCTING RESEARCH

Mr. YATES. Who is conducting sufficient research now?

Mr. COBB. The United States Government and industry in Japan.

Mr. YATES. Who is doing it?

Mr. COBB. The Office of Water Research and Technology.

Mr. YATES. You are the only one?

Mr. COBB. We are the only agency that is doing sufficient research on membrane technology to adapt it to seawater applications. There are military adaptations that we participate in but basically the military depends upon the technology advanced under our program.

Mr. YATES. Is there anybody in private industry engaged in this research?

Mr. COBB. We work, as you know, Mr. Chairman, with private industry and we do have cost-sharing under our program on the order of 20 percent of the cost of all of our saline water conversion research and development.

Mr. MURTHA. Who pays the 20 percent?

Mr. COBB. Industry, Mr. Murtha.

Mr. MURTHA. So with the seed money that is appropriated by this committee, industry then comes up with 20 percent?

Mr. COBB. On the average. It varies. It ranges all the way from very little or none, to as much as 50 percent depending upon the patent position that is being sought. If they want a stronger patent position, of course, we require that they cost share much more in the program.

Mr. YATES. Who do you have such contracts with?

Mr. COBB. We have, or have had contracts with nearly all of the companies in the business, including Dow, duPont, Universal Oil Products, Ionics, and others.

Mr. YATES. Are these the same companies that are progressing in the field of membrane technology for use in brackish waters?

Mr. COBB. Yes, Mr. Chairman, by and large that is true.

Mr. YATES. Does it appear in your judgment that these industries will continue research with their own capital in the field of conversion of seawater through membrane technology?

Mr. COBB. I think that there will be some progress but it will be greatly slowed down, Mr. Chairman, without the funds provided through the Office of Water Research and Technology. At this time, it is very difficult, because the industry is relatively small. My estimate is $200 or $300 million gross annual sales across the industry—not enough to be able to invest very much in long-range research and development.

WATER RESOURCES RESEARCH AT PENNSYLVANIA STATE

Mr. MURTHA. My understanding is that Penn State has a program where they put up four times the seed money, is that accurate?

Mr. COBB. I think you are making reference now to the other aspect of our program involving research and development, through the university community, in water resources. Yes, it is true that many of our water research centers have funding from other sources, substantially, or many times above the funding provided from our office.

Mr. MURTHA. Is there anybody else that does that kind of work?

Mr. COBB. In the government, there is presently about $330 million of applied research activity in water resources. The research activity of the other Federal agencies tends to be very mission-oriented, directed at the specific objectives and purposes of that agency. The Office of Water Research and Technology is the only agency that undertakes research with a comprehensive view of water management. We are not concerned about a specific aspect of management of the resource, but we are concerned in an overall manner about the resource, as we work, for example, on research related to the improvement of irrigation efficiency. We have a concern for agriculture, but we are not concerned with crop production. We are concerned with better utilization of water in order to save water. So, there is that difference, and in my view, the Office of Water Research and Technology is presently the only agency that sponsors research and development in this view of water management and in the resource itself.

IMPORTANCE OF RESEARCH ON SEAWATER

Mr. YATES. Well, how important is this research on seawater? Should this committee take it upon itself to provide funding to continue this kind of research and, if so, at what level? You have a knowledge of the industry, you have a knowledge of the needs of the country and the world because it is a worldwide problem, isn't it?

What is your view in answer to a question like that? Suppose you were sitting on this side of the table where Mr. Murtha and I are sitting at the present time and we had to pass on the question as to whether or not to approve the shutdown of your office and the termination of governmental assistance for the purpose. Would you do it?

I know it is a tough question because OMB has required you to sustain the OMB budget and you will do that but suppose there were somebody else coming in, suppose you were a private citizen coming in. Can you separate yourself from your official capacity long enough to give that kind of opinion?

Mr. COBB. Let me try to answer this way, Mr. Chairman.

Mr. YATES. All right.

Mr. COBB. It is very difficult. The Administration's proposal is based on reductions across government in research and development and many other programs coupled with it. As I understand it, certain tax proposals, if enacted, will provide industry with a greater capacity to take on some of the functions that previously had been carried out by government. Now in light of that, the argument can be made that industry will be able to pick up research and development that had been sponsored by the Federal Government and carry it forward, if the marketing dictates the need for the technology. That is the Administration's view as I understand it.

Mr. MURTHA. But will they pick it up? Our decision will be based on will they pick it up. We know there is going to be a water shortage, we know there are all kinds of problems and it sounds like this may be an area where we can not cut at the present time. Who is going to pick this up?

Mr. COBB. I don't think anyone really knows for certain whether or not industry will pick it up, or at what rate they will pick it up.

Mr. YATES. Or whether the States will do it?

Mr. COBB. I don't think anyone knows for certain.

Mr. MURTHA. Well, the States are not going to do it because they don't have the money, do they?

IMPACT OF PROGRAM TERMINATION

Mr. COBB. I cannot comment on that, because I don't really know.

Mr. MURTHA. What is your professional assessment of what would happen to this program if it is cut out here?

Mr. COBB. My professional assessment is that the research and development would go forward but at a greatly reduced rate and as a result we would not have the benefit of water management in this country, or the improvements that I know can be made in membrane technology, particularly, or even on the more long-

range freezing technology. Now, it is my view that desalting technology can have a major role in water management, not only for potable water supplies, but for major applications in coastal areas, and for more economic brackish water application.

We have seen this in the survey that we made for the demonstration program. I asked State water agency heads to advise us where this technology might be demonstrated to make some economic sense in light of other water supply alternatives. We had an amazing response; more than 37 sites were identified in the first round, and since then there have been an additional 17 sites and that is the basis of my edification. I know the demand is there.

Mr. MURTHA. You are actually saying then that if this is cut out there will be some research done but a much reduced level. That is what your assessment is.

Mr. COBB. That is my best professional assessment.

Mr. MURTHA. Because we have small communities in my area that have all kinds of water problems, we are just getting into the water problem. As a matter of fact, we have had trouble even in the Northeast attracting industry with the rainfall we receive because of various water problems in our area. It is not only the sewage and water problem but both of them coupled together.

FUTURE WATER USE

Mr. COBB. One other area where I think the technology will have significant application in the water use projections we discussed at our hearings last year which indicated that the total water demand in this country in the year 2000 will be about 1,200 billion gallons per day as opposed to 600 billion gallons we are using today.

Mr. YATES. So it is doubling.

Mr. COBB. This additional water has to come from somewhere because there are limited new conventional sources. We will have to make conjunctive use of surface-ground water, or more efficient use of existing supplies, or reduce the demand. The desalination technology, membrane and freezing, will have great potential for application in that area. That is an aspect of water management that we frequently overlook. In fact most of the desalting plants in use in this country at the present time are used by industry for some form of reuse or recycle.

Mr. MORRIS. We are starting with a base of about 350 billion to 400 billion gallons a day. That is the available supply, used once. That's the amount of water that is available for reuse. It's that amount that we are doubling, to meet today's demand of about 650 billion gallons.

Mr. YATES. That is the amount I understood you to say is available for us.

Mr. MORRIS. Yes.

Mr. YATES. What was this next figure?

Mr. MORRIS. The next figure is the actual demand that has to be met, which means that overall, the water has to be used twice. Some is used once and some is used perhaps nine or ten times but on the average twice. This enables us to satisfy the usage level of about 650 billion gallons. If the total supply is of the order of 350 billion, it has to be reused sufficiently to get up to the 1,200 billion that Mr. Cobb spoke about for the year 2000. The only new supplies

that we would have, would probably come from desalting and only a relatively small amount at that. So, we are going to have to get that additional water from reuse and recycling.

Mr. YATES. Well, if you had an economic desalting technology, you would have the problem licked, wouldn't you? In a sense you have the oceans of the world to supply you with water.

Mr. COBB. Again, in my opinion it is a matter of specific use and application. The economics depend upon the specific need and the nature of the alternatives available and so on. Desalting technology today, is expensive technology.

Mr. YATES. Because it is condensation primarily.

Mr. COBB. Primarily, in comparison with more conventional sources. On the other hand, when those sources are limited or simply are no longer available, then desalting becomes an economic technology.

MEMBRANE PROCESS FOR BRACKISH WATER

Mr. YATES. Is it possible to explain the difference between the membrane process for distillate, for brackish water, and for salt water? I gather the impression that industry has and you have moved forward to a point where now commercial development of the process for brackish water is available. The only thing that has to be done now is just go out and build the plants and you can do so. Is that correct, or is that an optimistic view?

Mr. MORRIS. That is an optimistic view. The problem you have with that is that desalting of seawater requires, under today's processes, higher pressures, and greater use of energy to accomplish a much smaller output than you get with brackish water, and greater pretreatment. If all of these things could be optimized with additional research and development, we could bring the cost down to make desalted seawater considerably more economical.

Mr. YATES. You indicated that Japan is going ahead with the desalting process. Did I understand you correctly?

Mr. COBB. Yes, Mr. Chairman, I did say that.

Mr. YATES. Now if Japan does it, then we can buy it from Japan, can't we, like we do with its Toyotas and Datsuns and television sets and everything else?

Mr. COBB. At the present time we have the superior membrane technology. That is evidenced, I think, through the dominant position that we have in the sale of membranes for plants, particularly in the Middle East. Even plants constructed by French, Japanese, or English firms, nearly always use American membranes. That lead exists, in my opinion, because of this program and because of the aggressive activity of U.S. industry in this area.

Mr. YATES. What do you mean? Can you explain to us how you use the membrane? Is this the key factor, the production of the membrane? Is the machinery the same for the membrane?

Mr. COBB. The membranes for brackish water and seawater as compared to distillation?

Mr. YATES. Is there a membrane for distillation, too?

Mr. COBB. No, Mr. Chairman.

Mr. YATES. That is just condensation and distillation.

Mr. COBB. Yes. Distillation: evaporation and condensation.

Mr. YATES. For brackish water you use a membrane. How is that membrane used, what is the nature of the process?

Mr. COBB. I would like to have Mr. Hahn reply, our Acting Assistant Director for Technology Development.

Mr. YATES. All right.

NATURE OF MEMBRANE PROCESS

Mr. HAHN. Mr. Chairman, the reverse osmosis process is a pressure operated membrane; you might refer to it as an ultrafilter. It has small enough pores to actually remove ionic constituents. Like any filter it has an efficiency associated with the amount of material to be removed. Now if you start with brackish water with a lesser amount of dissolved solids than seawater, then you don't have to have quite as efficient a membrane. If it removes 90 percent of the dissolved solids, then you probably have potable water.

Mr. YATES. How is it done? Is it the same way as I draw water out of the faucet in my sink? I have a little cap on the faucet with a screen and that keeps a number of the particles from coming through. Of course, the water is passed through all that later but in the meantime you have got some kind of particles that this little screen keeps out. Is that the way a membrane functions?

Mr. HAHN. Yes, just like a filter.

Mr. YATES. Then the water just goes through.

Mr. HAHN. Membranes are packaged in two different configurations. One is the spiral-wound membrane which takes flat sheets and wraps them around a spool. There are water passages between each of the sheets. By rolling up the sheets you can pack a great deal of surface area or "filter" into a small module. The other is a package of hollow fine fibers; each fiber is about the size of a hair. The pressurized saline water is on the outside of these fibers. They are hair-like and a whole bundle of them are put together and potted in plastic at each end. Then you cut through the plastic to form a tube-like bundle composed of these tiny hollow fibers, so that under pressure, the freshwater is squeezed through the walls of the fibers to the tiny interior holes and comes out through the end of the package. The pressure is applied to the outside of the fiber.

We are also investigating, in laboratories, hollow fine fibers that would put the saline water on the inside of these tiny fibers and drive the fresh water to the outside of the fiber. This packaging technique is extremely important for improving performance and economics.

We have under test at Roswell, New Mexico, and in the planning stage for seawater, a 12-inch diameter module that might be the size of this table or a little bit longer which can produce 60,000 gallons per day of desalted water. It is obvious that packaging is very important and is a significant part of technology development.

PRICE PER GALLON OF WATER

Mr. MURTHA. How is that price per gallon of water compared with ordinary water?

Mr. HAHN. Ordinary water out of a river, that is potable is free. It is very difficult to price ordinary water. In Maryland I pay $1.10 a thousand gallons to have water delivered to my house and I pay $1.50 a thousand gallons to have it taken away in the sewer system. So, my overall cost is about $2.60 per thousand and that includes treatment, delivery, removal and treatment for disposal. The price may or may not relate to actual costs, but with desalting we only quote the production cost of the water available for delivery at the fence line of the plant. In brackish water desalting, costs of $1.50 to $2 a thousand gallons are very possible.

Mr. MURTHA. So you have to add that on top of your distribution cost?

Mr. HAHN. You would add that on top of the distribution. That is the price you would use for comparing it to taking water from a surface source running it through filters, adding chlorine, coagulation, and other techniques and then supplying it to the customer from a distribution system. Costs for these processes vary.

Perhaps in brackish water the cost of desalting is not much more than twice the cost of conventional treatment for surface waters.

Mr. YATES. And it probably would continue to come down, would it not?

Mr. HAHN. We anticipate the cost coming down. The program is based on that assumption. We would not be involved in a research and development program that was not designed to reduce costs.

INDUSTRIAL RESEARCH

Mr. MURTHA. How would they cut all that money out, Mr. Chairman?

Mr. YATES. Industry is going to take up the brackish water procedures. How is industry going to take up the salt water procedure?

Mr. COBB. The seawater application?

Mr. YATES. Is there a difference between seawater and salt water?

Mr. COBB. I guess I would refer to seawater as salt water. Both are saline water. Again, I think that the improvements when left to industry for support will be slowed down. It will be a much longer period of time before we can achieve significant reductions in cost.

BENEFITS OF INSTITUTE R&D

Mr. MURTHA. It would seem so shortsighted, if what you say is true, that you are going to reduce the amount of money that is spent. For instance, here is a program that affected 123 communities with a very small outlay of a million dollars. In a seven or eight year period they figured they saved about $32 million to the people of the area that they served. Now it does not make any sense that you would want to cut out a program that is so effective. This is one of the Penn State research programs. You know nobody is going to take up the slack for the universities who are as strapped for dollars as everybody else is at this point.

Mr. COBB. Again, the idea is that States and industry will pick up the slack.

Mr. MURTHA. But you just said, Mr. Director, that they won't. You said many of these programs will not——

Mr. COBB. That is my personal and professional opinion. There will be a great slow down in the programs.

Mr. MURTHA. In the long run we will have to pay for it, that is what it amounts to, and if we don't do it today, at some point we are going to have to pay for this additional water some way.

Mr. COBB. The other side is that if the economics are there, the marketplace will drive the research and development at the right pace. That is the other side of the argument and that is the side Secretary Watt would probably be stating were he here today.

ELECTRODIALYSIS

Mr. MORRIS. If I may, sir, we talked about two basic types of memrane a few moments ago, We were talking only about reverse osmosis with the hollow fiber and the spiral-wound sheet. There is another membrane process called elecrodialysis which uses a pair of membranes and an electrical current to cause the salt ions in the water to separate so the salt goes in the direction of one membrane and the fresh water goes in the direction of the other membrane. Membrane technology is not limited to reverse osmosis alone but also includes electrodialysis.

One of the very recent developments which we are on the verge of establishing is coming from work that is being done in seawater electrodialysis treatment to produce good, fresh water from seawater. That work is now under test but I don't know how much we are going to find our if testing is terminated at this time.

Mr. YATES. That work is now in the process of testing?

Mr. MORRIS. Yes, or very soon will be.

Mr. YATES. To determine what?

Mr. MORRIS. The effectiveness of electrodialysis for seawater desalination.

Mr. YATES. How long does the test take?

Mr. MORRIS. I could ask Mr. Hahn.

Mr. HAHN. Mr. Chairman, we anticipated that the electrodialysis plant would be installed this summer and testing of approximately 12 months would be required to prove the process.

Mr. YATES. Under your program will this testing be done or will it be cancelled?

Mr. COBB. It will be cancelled, Mr. Chairman. We have, about $6 million of activity in the pipeline that will have to be closed out, some of which we will simply have to cancel. We will not be able, with the funds available to close out the program, to carry out the testing program for all the activity that we have in the pipeline.

Mr. YATES. Who is conducting that test? Is it in industry? Who is doing it?

Mr. COBB. The tests would be conducted at Wrightsville Beach working with industry and with our professional staff in Washington D.C.

Mr. YATES. When you say with industry, which companies, Mr. Cobb?

Mr. COBB. Ionics, Mr. Chairman.

Mr. YATES. Well, will they do it themselves?

Mr. COBB. I think we ought to ask Mr. Katz from Ionics, Mr. Chairman. We just don't know.

Mr. YATES. Would you call him up and ask him?

Mr. COBB. I will, Mr. Chairman.

Mr. YATES. Did you already?

Mr. COBB. No, I have not, Mr. Chairman.

Mr. YATES. Why haven't you?

Mr. COBB. I talked to Mr. Katz, Mr. Chairman, when I knew what our budgetary situation would be. We did not discuss this particular project.

Mr. YATES. Well, is Ionics a company devoted exclusively to water?

Mr. COBB. They are a company that produces electrodialysis technology.

Mr. YATES. For use in water?

Mr. COBB. Water treatment, yes, sir.

Mr. YATES. Were they in existence before you found them?

Mr. COBB. I don't know.

Mr. YATES. Or did they grow up as a result of your stimulating?

Mr. COBB. I have been in the program for too short a period to be able to answer that question. Mr. Hahn?

Mr. HAHN. No, Ionics existed prior to the early saline water days.

Mr. YATES. And probably will exist if your office closes?

Mr. HAHN. Will exist? Yes, sir.

Mr. YATES. What kind of research will they be doing, if your office closes, without Federal funds?

Mr. HAHN. Mr. Chairman, they are not primarily a research and development outfit. They have done research and brought along their own products, electrodialysis equipment, and they sell this equipment throughout the world.

Mr. COBB. But their primary activity is in commercial production.

Mr. YATES. Their equipment is what, Mr. Hahn?

Mr. HAHN. It is electrodialysis desalting equipment.

Mr. YATES. Desalting equipment.

Mr. HAHN. For brackish water, primarily.

Mr. YATES. For brackish water.

Mr. HAHN. Yes.

Mr. YATES. Why is it called desalting equipment then? That is the part I can't understand.

Mr. HAHN. Desalination equipment removes salts from water.

Mr. YATES. Desalination, okay.

Mr. COBB. Mr. Chairman, presently electrodialysis is generally applied to brackish waters that have less than 3,000 to 4,000 parts per million of salt. Mr. Chairman, seawater is 35,000 parts per million salt on the average.

Mr. YATES. So you are going to use Ionics only for the purpose of having them supervise the operation of their machines in connection with this test on seawater?

Mr. COBB. Yes.

Mr. YATES. If I understand what your experiment contemplates, isn't that what you are going to do?

Mr. COBB. Mr. Hahn, maybe we better go through it in more detail. We may be creating the wrong impression, Mr. Chairman.

Mr. YATES. Create the right one.

Mr. HAHN. Ionics had proposed to our office certain research on the membranes that are presently used for brackish water. By making them thinner and more electrically conductive, by using better spacers between the membranes to reduce the electrical resistance of the whole stack, and by operating at higher temperatures, they would be able to desalt seawater at costs not significantly higher than they can presently desalt highly saline brackish waters.

With these research and development improvements, the process would be applicable to seawater and could be projected to be of lower cost than MSF distillation and possibly competitive with what we anticipate reverse osmosis might be.

Mr. YATES. What is the cost of your experiment, $6 million?

Mr. COBB. No.

Mr. HAHN. No. This project from inception——

Mr. COBB. One million dollars, Mr. Chairman.

Mr. YATES. This is a $1 million project?

Mr. COBB. Yes.

Mr. YATES. What did you say about the $6 million?

Mr. COBB. We have presently $6 million of activity in some stage of development.

Mr. YATES. But for this, this will take six months to a year.

Mr. COBB. We need an additional $300,000 for this specific project, Mr. Chairman.

Mr. YATES. Additional to what?

Mr. COBB. We had programmed $350,000 for this test.

Mr. YATES. Why doesn't Ionics do it alone for that cost?

Mr. COBB. Again, I don't know.

Mr. YATES. Three hundred thousand dollars with what might be a miraculous result? Would you be willing to gamble on that?

Mr. COBB. I don't know. I don't know what their situation is. I don't know what their research and development budget is. Again, I think this is a question for Ionics.

Mr. YATES. Maybe we ought to bring Ionics in. How big a company is Ionics?

Mr. COBB. Annual sales of about $40 million.

Mr. YATES. That is not a very big company, is it?

Who else is in the field besides Ionics?

Mr. COBB. Dow, duPont——

Mr. YATES. Both of those are a little larger than Ionics?

Mr. COBB. Yes, they are larger. They produce the hollow fine fiber reverse osmosis membrane.

Also, Universal Oil Products.

Mr. YATES. Are they likely to take this up? We don't know that.

INVITATION TO INDUSTRY TO TESTIFY

Do each of those companies have water experts? I am sure they do, don't they? I think maybe we ought to invite them in to testify. Would they be willing to come in and testify?

Mr. COBB. I believe the industry would be very pleased to have the opportunity to appear.

Mr. YATES. Let's hold off a moment.

Can you get in touch with them and ask them to come in at three thirty next Monday?

Mr. COBB. Yes, Mr. Chairman.

Mr. YATES. If they want official invitations, we will be glad to write letters and talk to them on the phone.

Give our staff a list of the people you think ought to be invited—the one from Dow, the one from duPont, the one from Ionics, Celanese Corporation, and Universal Oil Products.

Mr. COBB. I am not sure how many should be represented. We will get as many as we can.

Mr. YATES. All right. They will tell us whether or not they think that you ought to be continued or whether or not they can take up the slack.

Mr. COBB. That will be three thirty next Monday.

Mr. YATES. Yes.

CLOSING DOWN

What else should I ask you today? It sounds like a wake.

In terms of national priorities you have indicated that your reverse osmosis program should be continued. As a matter of fact, all the membrane programs should be continued and the question is will they continue them on their own and if they continue them on their own what is the difference in terms of time when the research is probably going to be continued.

Assuming a zero base budget for the next fiscal year, what do you have to do in this fiscal year to close down shop?

Mr. COBB. If the $11.8 million rescission is approved, we will immediately have a reduction in the size of our staff from the present level of 67 full-time permanent on board in the domestic program and six in our international program to something on the order of 15 in the domestic program. We will continue to have six in the international program.

We would only enter into new work in contracts where absolutely essential to carry ongoing work through to some kind of logical conclusion, like tests that are underway. But we are limited in the phase-out funding and, therefore, there will be some work that will be terminated before we have the full benefit of the test and we have to terminate some work in progress. I have asked our professional staff to start looking at the criteria that would be used in setting priorities among projects for the most reasonable closed down program so as to salvage as much as we can in the way of research results.

Mr. YATES. Would you also provide for the record a list of the programs that are now in operation in terms of what you consider to be the most important rating, I suppose on the scale of 1 to 10, what the status of the program is, how much remains to be done

both in time and cost and which are likely to be taken over by the States or by industry.

We would like that, if possible, within the next two-or-three days so we can prepare to ask industry about these things.

Mr. COBB. With respect to the desalination research and development program? We can provide that.

Mr. YATES. That is the one that you are going to turn over to industry and also the one administration says nobody needs you any more for.

[The information follows:]

Priority Ranking, Status, and Time and Cost to Complete Most Important Desalination R&D Projects

Priority	Project	Contract Status Current Phase: Est. Comp. Date	% Compl.	Funding Status*	Requirements for Completion: Est. Comp. Date	($000) Pending Rescission	($000) New Appr.	Year	Industry Interest In Funding Completion
1	Quantum module: novel packaging of hollow fibers for high capacity RO	9/82	20	Funded	10/83	--	200	82	Would consider subject to availability of a test facility.
2	Seawater RO pilot plant with energy recovery	7/81	80	Funded	1/83	--	300	82	N/A
3	Parametric evaluation of seawater RO	1 yr.	0	*	--	275	--	--	No.
4	Pilot plant study of aliphatic membranes and polarity reversal ED	1/2 yr.	0	*	10/81	100	--	--	Would consider subject to availability of a test facility.
5	AFVC process pilot plant (freezing)	9/81	70	Funded	10/82	35	100	82	Would consider subject to availability of a test facility.
6	Indirect freezing pilot plant	12/81	70	Funded	10/82	--	300	82	Yes, but in absence of a seawater test facility, would test on "synthetic" seawater.
7	Eutectic freezing pilot plant	7/81	80	Funded	10/83	175	325	82	No known industry proprietary interest or company sponsor due to esoteric state of work.
8	Energy recovery - flow/work exchanger	10/81	50	Funded	4/83	--	175	82	No commercial sponsor.

Priority Ranking, Status, and Time and Cost to Complete Most Important Desalination R&D Projects

Priority	Project	Contract Status Current Phase: Est. Comp. Date	% Compl.	Funding Status*	Requirements for Completion: Est. Comp. Date	($000) Pending Rescission	($000) New Appr.	Year	Industry Interest In Funding Completion
9	New thin film composite RO hollow fiber membrane	2/82	40	Funded	5/83	--	500	82/83	Yes, but no funds available.
10	Ultrafiltration membrane seawater pretreatment	10/81	70	Funded	10/82	--	100	82	Unknown.
11	High temperature ED pilot plant for seawater	9/81	80	*	5/83	300	100	82	Yes, expect delay due to funding and search for suitable test facility.
12	Organic waste concentration and water recycle (freezing)	9/81	80	*	9/83	250	250	82	Doubtful, no proprietary interest.
13	Physical-chemical characterization of absorbents (freezing)	8/81	60	Funded	8/82	50	--	--	No.
14	RO thin film composite membranes	12/81	20	Funded	12/82	250	--	--	No. Risk too high.
15	Ultrafiltration membrane - seawater pretreatment	9/81	80	*	3/82	25	--	--	No.
16	Eutectic freezing slurry separation	7/81	80	Funded	7/82	100	--	--	No. Long range market.
17	New polymer investigation (polyarlether) for RO	4/81	30	*	4/84	300	--	--	No. Long range market.

Priority Ranking, Status, and Time and Cost to Complete Most Important Desalination R&D Projects

Priority	Project	Contract Status Current Phase: Est. Comp. Date	% Compl.	Funding Status*	Requirements for Completion: Est. Comp. Date	Pending Rescission	New Appr.	Year	Industry Interest In Funding Completion
18	New polymer investigation (bromophenylene oxide) for RO membranes	81	20	*	6/83	145	--	--	No. Long range market.
19	New polymer investigation (cycloaliphatic amides) for RO membranes	81	40	*	6/82	125	--	--	No. Long range market.
20	Investigation of boundary layer phenomena on RO membrane	81	50	*	6/82	115	---	---	No. Long range market.
	Total**					2,245	2,350		

1011

* Funding Status: Items noted as rescission indicate that completion of current work phases or contract awards have been deferred pending congressional action on rescission request.

Completion dates assume contracts would be awarded or continued in the absence of a rescission request.

** Total does not represent an integrated desalting program, but only the completion of priority projects. The funding and schedule assumes the continued operation of Wrightsville Beach Test Facility and Roswell Test Facility.

Mr. COBB. We also have, of course, our general research and development program which involves the university community and the focused research program.

Mr. YATES. That Mr. Murtha has talked about.

Mr. COBB. Yes, Mr. Chairman.

Mr. YATES. Well, here is a letter from Richard D. Heaton which may go in the record at this point.

[The letter follows:]

AWWA RESEARCH FOUNDATION,
AMERICAN WATER WORKS ASSOCIATION,
Denver, Colo., March 11, 1981.

Hon. SIDNEY R. YATES,
House of Representatives,
Rayburn House Office Building, Washington, D.C.

DEAR MR. YATES: As a representative of the water research field, I am greatly concerned with the Interior Department's decision to abolish the Office of Water Research and Technology (OWRT). Among all of the federal water agencies we have worked with, the OWRT has been the most refreshingly innovative, creative and professional. Their unique function cannot and should not be duplicated in another Interior department. Nor do they have a regulatory or redundant role.

I must take exception to Secretary Watt's printed statement that the OWRT does not properly focus on national concerns for development of water policy. What could be more appropriate than OWRT's important and present role in future water supply alternatives such as recycling, reuse, desalting, and conservation.

It appears that we already have an overabundance of federal policy and I express concern over Interior's plan to create a new Office of National Water Policy. Policy has never led to one additional drop of water. But research, technology transfer and development has. It seems incongruous to eliminate water research endeavors in light of pending water crises.

I support the President in budget cuts but ask that you seriously consider the OWRT, and not accept a 1981 recision or the planned 1982 elimination. But reinstate it to a full operating level and recommend budget increases.

Sincerely,

RICHARD D. HEATON.

NATIONAL WATER CONCERNS

Mr. YATES. In this letter Mr. Heaton says:

I must take exception to Secretary Watt's printed statement that OWRT does not properly focus on national concerns for development of water policy. What could be more appropriate than OWRT's important and present role in future water supply alternatives such as recycling, reuse, desalting and conservation.

It appears that we already have an overabundance of federal policy and I express concern over Interior's plan to create a new Office of National Water Policy. Policy has never led to one additional drop of water but research, technology transfer and development has. It seems incongruous to eliminate water research endeavors in light of pending water crises.

Then he winds up with the same paragraph that almost every letter I receive winds up with:

I support the President in budget cuts but ask that you seriously consider the OWRT and not accept a 1981 rescission or the planned 1982 elimination.

Does the American Water Works Association get any money from that?

Mr. COBB. Yes.

Mr. YATES. How much do they get?

Mr. COBB. About $25,000, $30,000 a year; a small amount.

Mr. YATES. I don't suppose the loss of that would make much difference in the operation, would it?

Mr. COBB. No, and, in fact, I recently attended a meeting of their Executive Committee. They are expanding their own programs to

the extent that they can, but I know that they have a strong interest in the Office of Water Research and Technology.

CLOSING DOWN OF TEST FACILITIES

Mr. YATES. What are you going to do with your facilities at Wrightsville Beach, North Carolina, and Roswell, New Mexico?

Mr. COBB. We plan to operate the facilities through the end of the current fiscal year. If the revised budget request for fiscal year 1982 is approved, there would be no funds; then, we would have to close down those facilities.

Mr. YATES. Would you mothball them or sell them?

Mr. COBB. I think they would be turned over to the GSA. In the case of the Wrightsville Beach test facility my hope is that somewhere within the Department of Defense there would be an interest in picking up the test facility for their work.

Mr. YATES. What is their work?

Mr. COBB. Let me just elaborate a bit. The Department of Defense has been using our research and development on membrane technology to provide the technology that they need for the rapid deployment force. Their R&D in this area has been in applying the technology that we have been creating to their military situation.

There is a defense aspect of our program, accordingly, and it would be my recommendation that if we are closed down, that at least our Wrightsville Beach test facility be picked up by the Department of Defense so they can continue to do the R&D they need.

Mr. YATES. The only agency of government that does have enough money to do it.

Mr. COBB. That has occurred to me, Mr. Chairman.

With respect to Roswell, our other test facility, it would simply be closed down and I suppose, become surplus or excess, at some point, unless there was an expression of interest on the part of the States or the university community in the Southwest to perhaps take over a part of the operation.

Mr. YATES. Where is the university community going to get its money?

Mr. COBB. Well, Mr. Chairman, that is another question.

OFFICE OF NATIONAL WATER POLICY

Mr. YATES. From the Office of National Water Policy? What is that office going to do?

Mr. COBB. I think I would ask Mr. Doremus to respond to that.

Mr. YATES. Mr. Doremus, what is the Office of National Water Policy going to do?

Mr. DOREMUS. I think beyond the references that the Secretary made in his statement before this committee, Mr. Chairman, it is not clear in detail what that office will do. Work is going forward to develop that.

Mr. YATES. It is kind of brackish.

Mr. DOREMUS. Yes, sir.

Mr. YATES. Will that office be staffed by people who were in OWRT?

Mr. DOREMUS. I don't think I can answer that question, Mr. Chairman.

Mr. YATES. What happens to the people who are now in OWRT? Are they going to be RIFed or are they going to be transferred?

Mr. COBB. Mr. Chairman, the Secretary has indicated, that through the adjustments he is making within the Department, that all affected people will be placed somewhere within the Department, particularly if there is a freeze on. He does not want to lose overall capability within the Department. However, as this procedure goes forward it is my personal view that there will be a potential for some of our people to be faced with a reduction in force, RIF, and to be removed from their Government jobs.

ISRAELI AND SAUDI ARABIAN PROGRAMS

Mr. YATES. How important are the programs you have in cooperation with the goverments of Israel and Saudi Arabia?

Mr. COBB. They are an important part of our program because they provide us with the opportunity to have an extended activity in distillation technology.

Mr. YATES. Are both of them engaged only in distillation?

Mr. COBB. Yes, at the present time, in distillation. In the Saudi Arabia program at some future date, there may be an opportunity to expand that program to include joint efforts in membrane technology, particularly with applications in that area on the more difficult seawater. The Arabian gulf is 45,000 parts per million salt and it is a more concentrated seawater than is usual for the ocean. So, it is a very, very difficult water to deal with but, at the present time, the program is directed at distillation technology.

Briefly, what we are doing in Israel is developing a low temperature technology that will be coupled with a power plant which can provide waste heat so that we have economies in the energy source. We are also examining the potential of a geothermal resource that we believe exists near Ashdod that can also provide the energy for this five million gallon per day plant. The plant is presently under construction and will be completed either in December 1981 or early 1982.

Mr. YATES. Well, do you have enough funds to do that?

Mr. COBB. It is a reimbursable program. It had $20 million appropriated to AID in 1970 and that money remains available for that purpose until expended. The Israeli government is putting in about $35 million as its share.

Mr. MORRIS. I had a phone call today about the program in Israel and the question asked was: just why does Israel need OWRT's or the Federal Government's participation in that program if the U.S.-side doesn't have the expertise to share with Israel. Another side of that question is the program with Saudi Arabia. That program, reimbursable entirely by the Saudis, also benefits the United States. By our participation it enables us to provide expertise and recommendations to the Saudi Government. Our rough estimate of the market share for U.S. services and sales, which is only a small part of the total Saudi desalting program, indicates something about a billion and a half to two billion dollars to U.S.

industry over the next 10 years. The Saudi's question may very well be that as the U.S. Government can no longer meet the terms of the joint agreement as it does not have expertise in desalting any longer, why do we, the Saudis, need a program with the United States.

Mr. YATES. Does any other country have it?

Mr. MORRIS. The Japanese have signed agreements with them, although those agreements appear to have been set on the back burner. The Japanese have tried to sell membranes but not with any success as yet. It is our feeling that if the U.S. departs from the program, the Saudis will look to others to give them support.

Mr. YATES. So to sum it up, the Israelis can get along without our help and the Saudis can't? The Saudis either have to look to us or to some other country.

Mr. MORRIS. Yes.

Mr. COBB. That is an accurate description.

Mr. YATES. I had the impression that Israel is engaged in the membrane process, too.

Mr. COBB. They are.

Mr. YATES. Is this on their own?

Mr. COBB. Yes, they have modest efforts—modest compared to what we have been involved in. I would say something less than $500,000.

WATER RESOURCES R&D INSTITUTES

Mr. YATES. Well, what happens with the Institutes? If we culminate an assistance with the Institutes, will they be able to get assistance from other sources?

Mr. COBB. Some of the Institutes will be able to get assistance from other sources. My own personal estimates are that about 40 of the 54 Institutes will go out of business without an OWRT.

Mr. YATES. Just by way of passing, which program do you think is better, an outright grant program or a matching grant program?

Mr. COBB. A matching grant, Mr. Chairman, because it adds discipline and that helps identify real priorities.

Mr. YATES. What happens if the Institutes do terminate their activity, is this a loss to the nation? How much good research is being done by the Institutes?

Mr. COBB. It will be a loss to the nation in those areas where the Institutes go out of business because they serve as focal points in their State for water research and put an emphasis on research activities that meet the greatest needs, and provide the greatest payoffs. Prior to this program, university research tended to follow the interests of the people in the university who happened to be there. There was not the strong leadership that an Institute provides by working with the State water agencies and the people. They bring together the State water agencies their needs, and the research capability within the university. They do a great deal of good work.

We have indicated examples of that work in the budget justifications, Mr. Chairman, and we have examples of it in our Annual Report. I understand, Mr. Chairman, that they are putting together for you and the Senate committee a listing of the most valuable research activity that each Institute has undertaken in the last

years. That is going to be fascinating. It will be quantitative; it will indicate payoffs and benefits.

MOST VALUABLE INSTITUTE RESEARCH

Mr. YATES. When will we get that?

Mr. COBB. It should be available soon. I don't know the exact schedule but I can find out and let you know, Mr. Chairman.

Mr. YATES. Can we have it by the end of the week so that we can have it before us on Monday?

Mr. COBB. I am not sure, Mr. Chairman.

Mr. MORRIS. Mr. Chairman, that is a program that is being developed by the Institute directors themselves.

Mr. YATES. I know.

Mr. COBB. We can pass along your interest, Mr. Chairman, and I am sure that will have some effect on the schedule.

NEW DESALINATION PLANTS

Mr. YATES. Have there been any new plants constructed in the last few years by industry for brackish water for communities or for the country?

Mr. COBB. Yes.

Mr. YATES. Where?

Mr. COBB. In Key West and Sanibel Island in Florida, a location in Texas, and the Virgin Islands. There is a very strong interest in Long Island, New York, to put in a brackish water desalination plant. These are for potable water supplies, but there have also been substantial industrial applications, as I mentioned earlier.

Mr. YATES. In your opinion will desalination plants be built in the areas where demonstrations were originally intended to be carried on?

Mr. COBB. Yes, Mr. Chairman, because the need is so great and there are no other alternatives. How they will be financed I don't know and what technology will be utilized I don't know. I would venture to say, it will probably not be the technology that we would have demonstrated.

STATUS OF YUMA DESALTING PLANT

Mr. YATES. What is the current status of the Yuma Desalting plant?

Mr. COBB. Mr. Chairman, I don't know. I will have to ask. I did see a press release that there were some problems.

Mr. YATES. Would you put that in the record?

Mr. COBB. Yes, Mr. Chairman.

[The information follows:]

CURRENT STATUS OF THE YUMA DESALTING PLANT

Water and Power Resources Service has responsibility for this plant which is not yet constructed. Manufacturers proof tests of reverse osmosis desalting modules have been, as of a March 4 announcement, at least temporarily halted, as the modules are not meeting contract requirements. It is understood that because of recent budget reductions, construction of the Yuma Plant will require an additional two years.

FUNDING BREAKOUT FOR DEMONSTRATION PLANTS

Mr. YATES. Would you put in the record a breakout of the $22,852,000 proposed originally for two saline water demonstration plants and include the amounts and so forth?

Mr. COBB. Yes.

[The information follows:]

TOTAL COST ESTIMATES FOR SALINE WATER DEMONSTRATION PROGRAM

The following chart shows the estimated total cost by broad components for Alamogordo, New Mexico, and Virginia Beach, Virginia. At the bottom of the chart is a schedule of year-by-year Federal funding. Federal participation was expected to be completed by the end of fiscal year 1987, if construction had begun in 1981.

2-4-81

Saline Water Demonstration Program ($000)
Estimated total costs of the plants 1 and 2

TOTAL COST SUMMARY	Alamogordo	Virginia Beach	Total
Design	916	1,040	1,956
Plant	9,158	10,403	19,561
Other Construction	1,968	2,231	4,199
Subtotal	12,042	13,674	25,716
Land	123	923	1,046
Total Construction	12,165	14,597	26,762
4 Years O&M	3,408	4,254	7,662
Total	15,573	18,851	34,424

LOCAL SHARE					
Land	123		923		
Design	200		300		
Construction	441		1,121		
O&M	1,572		4,254		
Total Local Cost	2,336	(15%)	6,598	(35%)	8,934

FEDERAL SHARE			
Design	716	740	
Construction	10,685	11,513	
O&M	1,836	--	
Total Federal Cost	13,237	12,253	25,490
Total Cost	15,573	18,851	34,424

Federal Funding Schedule

	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	Total
Alamogordo	420	500	5,000	5,720	662	489	314	132	13,237
Virginia Beach	420	500	5,000	6,333	--	--	--	--	12,253
Total Cost	840	1,000	10,000	12,053	662	489	314	132	25,490

Mr. YATES. Mr. AuCoin has some questions and I have some questions that you may answer for the record.

[The questions and answers follow:]

Questions submitted by the Honorable Les AuCoin

Mount St. Helens Research

Question: The FY '80 supplemental for OWRT included $2 million to look at ash-fall out problems related to Mount St. Helens. The purpose is to study adverse effects on the quality and quantity of surface and groundwater and water supply systems. I understand one-half of this money has been obligated and the remaining funds have been frozen. What kinds of studies have already taken place?

Answer: Of the eleven projects selected since the program began in September 1980, six have already been awarded and are underway. These six are obligated at $545,000 leaving an unobligated balance of $1,455,000 in FY 1980 funds.

Title of Research Project	Funding ($000)
Research Assessment and Coordination: the Mount St. Helens Eruption	136
Field Survey of Evidence of Mudflow Dynamics: Toutle and Cowlitz Rivers	14
Flow Properties of the Mount St. Helens Mudflow Material	18
The Influence of Volcanic Ash on the Homing Ability of Salmon	9
The Effect of Mount St. Helens Eruption on Salmon Populations and Habitat in the Toutle River	248
The effects of Suspended Volcanic Sediment on Salmon Survival and Passage in the Toutle, Cowlitz, and Columbia River	120
Total:	$545

Question: What remains to be finished?

Answer: $1,455,000 is available for the remaining studies, including the five selected but unfunded and others to be selected from proposals totalling over $9 million. They will be primarily on hydraulics of water movement and sediment transport.

Question: Will the research remain uncompleted if OWRT cannot use the remainder of their funds? If not, who will fund the research?

Answer: The Office of Water Research and Technology is using the remainder of the funds for Mount St. Helens in anticipation that all work will be completed.

Question: It was stated during the hearing that most of the 54 State Institutes will continue to operate even if federal funding is eliminated. What States will keep their Institutes open? Who will close?

Answer: Final decisions on closings will rest with Governors of the separate States and administrators of universities at which Institutes are located. Current estimates indicate that 13 Institutes are likely to remain open without funds from OWRT; another 14 may close in 1982; the remainder, 27, are expected to close shortly after September 1981. The State-by-State listing follows:

Remain Open Indefinitely	Close by End of 1982	Close by End of 1981	
Arizona	Alaska	Alabama	Nebraska
Arkansas	Delaware	Colorado	New Hampshire
California	Hawaii	Connecticut	New Jersey
Georgia	Kansas	District of Columbia	Oregon
Iowa	Massachusetts	Florida	Puerto Rico
Nevada	Mississippi	Guam	Rhode Island
New Mexico	Missouri	Idaho	South Carolina
New York	Montana	Illinois	Tennessee
North Carolina	North Dakota	Indiana	Vermont
Oklahoma	Ohio	Kentucky	Virgin Islands
Utah	Pennsylvania	Louisiana	West Virginia
Wisconsin	South Dakota	Maryland	Wyoming
Washington	Texas	Maine	
	Virginia	Michigan	
		Minnesota	

Question: How will the lack of federal money affect their research programs?

Answer: Funds provided by OWRT for the Annual Cooperative Program (ACP) allotment constitute the Federal share of the Institute's base program for research planning and startup. Results of projects with annual budgets less than $15,000 have drawn support from other agencies to extend the research with larger awards. The aggregate program of all Institutes of $40 million annual research is aided by the existence of OWRT base support. The OWRT ACP cost is $5.4 million. Without the ACP funds, new sources of funds will have to be found for many Institutes to continue research work. There are research projects in progress funded by the ACP program totalling $1.5 million which would be terminated.

ADDITIONAL COMMITTEE QUESTIONS

Status of Desalination as a Technology

Question: Please review for the Committee the status of desalination as a technology. How many plants and in what kinds of areas are there for desalting brackish or seawater?

Answer: The most recent comprehensive information on this subject is the OWRT Desalting Plants Inventory Report No. 6. This detailed inventory covers desalting plants worldwide in existence as of January 1977. At that time, total worldwide installed capacity was about one billion gallons per day in 1,500 land-based plants of 25,000 gpd or larger. While a third of the plants were in the United States, they represented about 10 percent of the total worldwide capacity. At that time, distillation plants, worldwide, accounted for over 75 percent of total capacity and about half of the total number of plants. The balances were almost entirely in membrane plants.

The past four years has seen a marked growth in the use of desalination with the trend being for membrane processes to supplement distillation, though distillation is still the process of choice for seawater desalting primarily in the Middle East, North Africa, and the Caribbean.

Within the United States, it is estimated that there has been a doubling of installed desalting plant capacity during the past four years. Almost all of these were brackish water plants employing membrane processes. In Florida, alone, there has been an increase in installed plant capacity from about 15 mgd in 1977 to approximately 30 mgd by 1981.

Question: Have there been many new plants constructed within the past few years?

Answer: Part of this question has been answered in the previous response. In recent years, the trend has been to construct plants of larger capacity than formerly, thus reflecting the growing acceptance of desalination as a water supply alternative. As an example, there were over 50 plants in Florida at the end of 1976 producing about 15 mgd of water. This number suggests an average plant capacity of 30,000 gpd. In 1979, only three new desalting plants were constructed, in Florida, but with an aggregate capacity of nine million gallons per day, or an average plant size of three million gallons per day.

Question: What is the cost of brackish or seawater desalination compared to the cost of ordinary water?

Answer: It is difficult to generalize the cost of ordinary or nondesalted fresh water since costs are strongly site-dependent and do vary tremendously. At one extreme, fresh water from local wells delivered by truck to a homeowner in the Virgin Islands is reported to have cost as much as $30 per 1,000 gallons, while water barged from Puerto Rico is reported to have been delivered at costs varying from $10 to $18 per 1,000 gallons. Nevertheless, because of the relatively widespread use of desalination in Florida, an interesting comparison

can be made for communities using "natural" supplies versus those with desalination supplies. This comparison, given in the attached table, is based on the 1979 utility rates for the selected communities. As an example, assuming a monthly usage of 10,000 gallons by a family of four, at 350-gallons per day, the monthly cost of desalted water in Venice, delivered to the consumer, is $18.50. Venice uses a mix of natural and desalted water. Pine Island's family would pay $30 for a supply that is entirely desalted, while the Island Water Utility would charge $48 for the same quantity. On the other hand, a "natural" water city like Englewood would charge $14.65, not much different from Venice, while South Bay Town would charge $20.45. These charges, nonetheless, can be misleading in that the cost of water in many communities may not be reflected in the charge made for water. Often, the rates represent only the operating and maintenance costs, surcharged to recover the cost of water used for public purposes, including losses discounted, or further surcharged to meet local political requirements. The rates may not include capital recovery of the plant and distribution systems, these being paid from special levies, grants, and connection and extension fees.

Improvements in Desalination through Research

Question: What is the magnitude of improvement that can be gotten by further research in the desalination area? What cost decreases could be gotten?

Answer: The figures below show the range of potential improvement by broad process categories and indicate the energy required for 1,000 gallons of desalted water.

	Process Categories		
Seawater	Distillation	Membrane	Freezing
Present Energy Requirements-Kwh	77	38	44
Potential Energy Requirements-Kwh	31	15	25.5
Percent Improvement	148%	153%	73%

The desalting equipment capital recovery in dollars per 1,000 gallons can be summarized as follows:

	Process Categories		
Seawater	Distillation	Membrane	Freezing
Present Equipment - Capital Recovery	$3.58	$1.71	$1.22
Potential Equipment - Capital Recovery	$3.33	$0.79	$0.66
Percent Improvement	7.5%	116%	85%

WATER RATE OF UTILITIES WITH DESALINATION *

Utility	Monthly Fixed	Usage Rate	Connection Fee
Charlotte Harbor	$8.00/3M	$2.05/M	$ 775.00
Southbay Yacht	6.80	2.00/M	1260.00
Cape Coral*	6.80/3M	1.15/M	1350.00
Island Water	8.00	4.00/M	1525.00
Pine Island	8.00	2.20/M	996.00
City Venice*	4.00	1.45/M	400.00
Sorrento Shores	7.30	1.80/M	550.00

$8.00/3M Monthly Fixed for Charlotte Harbor means the consumer is entitled to use up 3,000 gallons before the charge increases.

$7.30 Monthly Fixed for Sorrento Shores means the consumer pays $7.30 regardless of consumption, and then pays a usage charge applied to all water consumed.

*Cape Coral and Venice use desalted water for about one-half of total.

WATER RATE OF UTILITIES WITHOUT DESALINATION *

Utility	Monthly Fixed	Usage Rate	Connection Fee
Venice Gardens	$5.90	$1.24/M	$ 600.00
North Port	4.00	1.20/M	--
Englewood	3.15	1.15/M	600.00
Sarasota SUD 1	3.76	1.50/M	--
Myakka Utilities	6.50/3M	1.70/M	--
Pahokee	6.00/4M	1.00/M	--
South Bay Town	7.95	1.25/M	750.00

* Rates in effect within selected Florida Communities - 1979

Similar improvements can be shown for brackish water, but as distillation and freezing would not normally be used with brackish water, the data which follows are given only for membrane technology. Energy required for 1,000 gallons of desalted water:

Brackish Water	Membrane Process
Present Energy Requirements-Kwh	8
Potential Energy Requirements-Kwh	5
Percent Improvement	60%

The desalting equipment capital recovery in dollars per 1,000 gallons is:

Brackish Water	Membrane Process
Present Equipment Capital Recovery	$0.47
Potential Equipment Capital	.19
Percent Improvement	147%

These data were developed to assist in setting R&D priorities for future programs. As can be seen, energy costs can be reduced significantly for all seawater processes; capital costs for seawater membrane and freezing processes can be cut approximately in half. For brackish water, the percentages for improvement in energy and capital equipment costs are also significant.

Question: What other kinds of improvements could be made?

Answer: R&D can have some effect on reducing the capital cost of single-purpose distillation plants. However, the opportunities for substantial improvements in dual-purpose plants (those utilizing waste heat) are excellent, although currently none are being addressed by OWRT. Dual-purpose processes have the potential for producing water at costs competitive with the best membrane processes.

Colorado River Salinity Control Projects

Question: What is the status of the Colorado River Salinity Control projects?

Answer: Water and Power Resources Service (WPRS) has responsibility over Colorado River Basin salinity control projects, including the Yuma Desalting Plant. It is understood that with one or two exceptions, these projects do not stress desalting plants for salinity control. Instead, reliance is being placed on such methods as diversion and solar evaporation ponds.

Question: Will they be affected by budget reductions?

Answer: Termination of the OWRT program does not affect the WPRS responsibilities for these projects. Opportunities for reductions in

costs will have to be foregone because of the lack of near-term improvements that would have resulted from OWRT's R&D. Plants under consideration by WPRS are intended to use current "off-the-shelf" technology.

Question: What is the current status of the Yuma Desalting Plant?

Answer: WPRS has responsibility for this plant which is not yet constructed. Manufacturers proof tests of reverse osmosis desalting modules have been, as of a March 4 announcement, at least temporarily halted, as the modules are not meeting contract requirements. It is understood that because of recent budget reductions, construction of the Yuma Plant will require an additional two years.

Question: Will termination of the development and demonstration program affect the plant?

Answer: The demonstration program would have had little, if any, effect on the Yuma project. Such effect as it might have had would be the the transferring experience gained from one plant (the demo) to another. The termination of the development program, on the other hand, could have considerable effect, but not on the immediate design and construction of the Yuma Desalting Plant which is essentially fixed by WPRS. This would be, (1) if the manufacturers continue to be unable to meet proof-test requirements, developments from the OWRT program may be applicable, and (2) through specific research and development undertaken by OWRT to meet Yuma's needs.

Question: What responsibilities did OWRT have in the desalting portion of the project and who will undertake those responsibilities now?

Answer: In the formative stages of this project, OWRT played a major role in providing information that led to the decision to use desalting to treat return flows from the Wellton-Mohawk Irrigation Conservancy District. A preliminary design and an engineering analysis of the proposed plant were undertaken by OWRT. The subsequent report served as the primary basis for the present day design of the Yuma Plant.

WPRS took over full responsibility in 1975 for the detailed design and construction of the plant. OWRT provided R&D support to WPRS during the design period particularly through undertaking an expanded effort on WPRS' behalf at the OWRT Brackish Water Test Facility in Roswell, New Mexico. Since design completion, there has been an extensive interchange of information between WPRS and OWRT on the latest developments in membrane desalting, including possible effects on the Yuma Plant. Finally, OWRT has provided consulting services to WPRS for the past 5-1/2 years on the Yuma Plant related to specific technical problem areas.

Saline Water Demonstration Plant Costs, Processes and Termination Effect

Question: Please provide for the record a breakout of the $22,852,000 previously proposed for two saline water demonstration

plants, to include the amounts for design, construction, and operation and the proposed expenditure of funds over each fiscal year.

Answer: The following chart shows the estimated total cost by broad components for Alamogordo, New Mexico, and Virginia Beach, Virginia. At the bottom of the chart is a schedule of year-by-year Federal funding. Federal participation is anticipated to be completed by the end of FY 1987, if construction begins in 1981.

2-4-81

Saline Water Demonstration Program ($000)
Estimated total costs of the plants 1 and 2

TOTAL COST SUMMARY	Alamogordo	Virginia Beach	Total
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Total	15,573	18,851	34,424
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Land	123	923	
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O&M	1,572	4,254	
Total Local Cost	2,336 (15%)	6,598 (35%)	8,934
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Design	716	740	
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Total Federal Cost	13,237	12,253	25,490
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Federal Funding Schedule

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Alamogordo	420	500	5,000	5,720	662	489	314	132	13,237
Virginia Beach	420	500	5,000	6,333	--	--	--	--	12,253
Total Cost	840	1,000	10,000	12,053	662	489	314	132	25,490

Question: Please describe the process that would be used in each of of these plants and what advances over current technology would be made.

Answer: The Alamogordo Demonstration Plant would utilize electrodialysis, with periodic polarity reversal, in conjunction with new and improved anion selective membranes. In limited tests, these membranes have demonstrated superior resistance to both fouling and scaling as well as lower electrical resistance.

The combination of polarity reversal and the new anion membranes when used on brackish feedwater of high hardness can achieve significantly higher product recoveries than is attainable with presently available commercial systems. Tests at the OWRT Brackish Water Test Facility at Roswell, New Mexico, which have been temporarily suspended, have demonstrated the technical feasibility of obtaining recoveries corresponding to over 400 percent supersaturation with respect to calcium sulfate. In contrast, currently available electrodialysis and reverse osmosis commercial membrane systems are limited to a supersaturation of 200 percent maximum. The system to be demonstrated at Alamogordo anticipates a product water volume increase of up to 20 percent, while the waste brine could be reduced by 50 percent. The reduction of waste volume is particularly important.

The Virginia Beach Demonstration Plant would employ two reverse osmosis stages in series to permit high product water recoveries to be obtained from a brackish feedwater of relatively high salinity.

Multistage reverse osmosis, with interstage pumping, has only been tested as parts of experiments on prototypes. In the Virginia Beach Demonstration, the first stage would use newly developed low pressure membranes. These membranes operate at 250 psi maximum. In contrast, currently available commercial reverse osmosis plants operate at 400 psi. Use of low pressure results in lower energy costs and permits less costly construction materials to be used throughout the plant, resulting in a 15 percentage reduction in the unit cost of water.

Question: Have contracts or agreements been signed with the two localities? If so, what will be the cost of termination of these agreements?

Answer: Cooperative agreements have been executed with Alamogordo, New Mexico, and Virginia Beach, Virginia. The costs incurred by the Cities are estimated to be on the order of $363,000 for Virginia Beach and $65,000 for Alamogordo. Termination costs would probably have to be negotiated. Both Cities have passed bond issues in special elections to cover their expected share.

Question: The justifications for your original budget indicate that four percent (4%) of the funding for institutes come from private sources. What kind of private sources provide funds to these institutes?

Answer: Private funds consist primarily of cost-sharing by industrial firms and local governments in support of individual projects. Only in isolated instances have private funds constituted sole support of projects.

Question: Would you expect these sources to provide additional funds in the future to make up for the lack of Federal support?

Answer: It is expected that some funding will be continued; the exact amounts are not known.

Research on Scaling and Corrosion in Salt Water Distillation Plants

Question: One of your originally proposed increases was for studying the control of scaling and corrosion in salt water distillation plants. How significant is this research in overall terms in your saline water program?

Answer: The proposed research on scale control and corrosion is long-range and basic. Control of calcium sulfate scale is the most important problem that must be solved if distillation processes are to be competitive with membrane and freezing processes. Design concepts for distillation plants offering great improvements in thermal efficiency are substantially dependent on suppression of scale. Scale formation limits maximum process temperatures to 250oF. Currently available inhibitors, commercially developed, are known to be useful to that temperature. The only known effort to achieve a higher temperatures is OWRT's single research project with Battelle Memorial Institute.

Corrosion will always be important. Designers and builders of distillation plants cope with problems of corrosion by specifying the use of relatively expensive corrosion-resistant materials throughout the plants. With research, there is the hope that less expensive equipment materials can be developed.

Costs of Terminating Test Facilities

Question: What would be the additional cost of bringing each of these projects to an orderly conclusion, rather than terminating them immediately in fiscal year 1982 and beyond?

Answer: This question refers to the test facilities at Wrightsville Beach and Roswell.

An estimate of the cost of bringing the higher priority projects to a conclusion requires the inclusion of costs of keeping both facilities in operation through FY 1983 to allow for completion of two-year field evaluation test runs. Details of the projects at these facilities are provided as follows.

1. A two-year program with Dow Chemical was initiated in September 1980 to develop a second generation large hollow fiber brackish water module. The goal is to achieve a module, 250,000 gpd, a 25" diameter by 108" long, using a bias-wrap configuration with a coaxial center-core assembly, drilled and pressure-balanced tube sheet, and a composite-wound pressure vessel. The schedule calls for prototypes to be delivered to Roswell in 1982 for testing and evaluation of design integrity and performance characteristics. Tests were expected to begin September 1982 and would, with a minimum run of 8,000 hours, end in September 1983. Successful use of large modules in the design of major size saline water conversion plants will affect savings in plant capital cost by reducing the total cost of the elements, valves, vessels, manifolds and compacting piping. A comparison of estimated costs of hollow fiber module sizes together with associated hardward follows.

Cost Comparison
Brackish Water Hollow Fiber Module Sizes

Module Type	Commercial 20,000 gpd HF	1st Generation 100,000 gpd HF	2nd Generation 250,000 gpd HF
Number of Modules	500	100	40
Type of Pressure Vessels	Coated Steel	Coated Steel	Composite
Number of Valves	375	300	120
Membrane Cost ($)	3,300,000	3,100,000	2,900,000
Associated Hardware Cost ($)	680,000	420,000	200,000
Total Cost ($)	3,980,000	3,520,000	3,100,000

gpd=gallons per day mgd=million gallons per day HF=hollow fiber

The above estimates are based on a 10 mgd hollow fiber reverse osmosis brackish water desalting plant, and are limited to modules and associated hardware.

2. An electrodialysis reversal (EDR) pilot plant containing new aliphatic anion membranes is undergoing evaluation at Roswell. These membranes have lower electrical resistance than commercially available membranes, are capable of higher current efficiency, and are more resistant to organic fouling. This prototype unit is presently providing characterization and reliability data while undergoing long-term performance testing that was intended to extend into 1982.

3. A new pilot plant that uses a distinctly different freezing technique is designed to handle water where brine disposal is a problem. The eutectic freezing pilot plant is now nearing completion of its fabrication and scheduled to be delivered to the RTF in the summer of 1981. The estimated cost to complete this effort is $500,000. Testing was scheduled for FY 1982 and FY 1983.

4. A single-pass seawater 50,000 gpd pilot plant is being built at Wrightsville Beach. The plant will use duPont hollow fiber and UOP spiral-wound configurations, each configuration providing 25,000 gpd capacity. These configurations represent seawater state-of-the art technology and would be used to provide base reference data. This pilot plant was to include an energy recovery unit to learn more about the use of such devices and their energy reduction effectiveness.

5. A first generation, large (12") diameter prototype experimental seawater reverse osmosis spiral-wound module with a capacity three times greater than current modules has been on test at Wrightsville Beach since December 1980. Evaluation of the experiment had been scheduled.

6. We are evaluating the use of antiscalant compounds in lieu of acid for scale control in a 3,000 gpd, 4" diameter, spiral-wound module. Scheduled long-term testing would extend into FY 1982. Successful substitution would eliminate the hazards of acid-handling and reduce equipment corrosion.

7. High temperature electrodialysis (HTED), through the construction and testing of a 50,000 gpd prototype pilot plant, is to establish the costs and reliability of this process for economically desalting seawater. The HTED program has, since its initiation in February 1977, been funded for $1,000,000. With the exception of membranes and spacers, all the components of the pilot plant have been delivered to Wrightsville Beach. $400,000 could be used for spacers and membranes, assembly and start-up of the plant, and technical services during the field test. HTED takes advantage of heat in the water and uses it effectively to lower process costs so that the process can be competitive with seawater reverse osmosis.

8. The importance of minimizing membrane-fouling by pretreating feedwater has required continuing OWRT studies in this area. Hollow fiber ultrafiltration membranes are being evaluated at Wrightsville Beach as a seawater pretreatment process. This semipermeable membrane is usually effective in removing particles in the 0.002 to 10 micron range, making it much superior to conventional seawater pretreatment methods. Use of ultrafiltration as seawater pretreatment prior to desalination is limited because of its high cost. A program was initiated in November 1980 to reduce the cost of developing larger diameter cartridges with increased membrane surface. Prototypes are to be available by September 1981.

9. Completion of testing on the 25,000 gpd adsorption freezing vapor compression pilot plant at Wrightsville Beach was scheduled for the end of FY 1982. Freezing is seen as being the cheapest for seawater desalination and this particular freeze process was seen as being the best for potable water. Data already acquired has led to revamping ideas about freezing and the need for reconfiguration in the present plant. Modifications to the pilot plant to improve its

operation were scheduled for FY 1981. Completing testing on this pilot plant will require $135,000.

10. A new pilot plant using an indirect freezing technique has been built and is scheduled for delivery to Wrightsville Beach in 1981. This unit utilizes a new concept that makes the indirect freezing technique possible without the past problems of "icing-up" the heat transfer surfaces. The indirect freezing process is seen as being best suited for industrial wastes with the same low energy advantages of other freeze processes. Testing on this unit was scheduled for two years--FY 1982 and FY 1983. Cost to complete this project is $300,000.

11. Summary of costs to complete Priority Programs at the OWRT test facilities:

	FY 81 ($000)	FY 82 ($000)	FY 83 ($000)
A. ROSWELL BRACKISH WATER TEST FACILITY			
Manager, personnel, utilities, chemicals, etc.	--	360	320
1. 250 gpd HF Module	--	100	100
2. EDR pilot plant	--	100	--
3. Eutectic Freezing pilot plant	175	200	125
B. WRIGHTSVILLE BEACH SEAWATER TEST FACILITY			
Manager, personnel, utilities, chemicals, etc.	--	490	400
4. 50K gpd RO pilot plant	--	150	150
5. 40K gpd 12" diameter spiral element pilot plant	--	90	90
6. 3K gpd 4" diameter spiral-wound elements chemical feedwater additives	--	50	--
7. 50K gpd high temp. ED pilot plant	300	100	--
8. Ultrafiltration seawater pretreatment large cartridge design	--	100	--
9. AFVC freezing pilot plant test and modification	35	100	--
10. Indirect freezing pilot plant test and modification	--	150	150
	510	1,990	1,335

A complete list of projects at the two test facilities is excerpted from pages A-96 to A-99 of OWRT's FY 1982 Budget Justification and follows:

IV. C. - TEST FACILITY PROJECTS

MEMBRANE EVALUATION PROGRAM at Wrightsville Beach Test Facility

Unit Designation	Type	Capacity	Schedule	Test Objective
4" Diameter Spiral Wound elements - Fluid Systems RC-100	RO	2000 gpd	on-stream	Determine element reliability and membrane performance and longevity
6" Diameter Spiral Wound elements - Fluid Systems RC-100 (Spiral Wound scale-up)	RO	1000 gpd	on-stream	Determine spiral wound element scale-up performance characteristics and reliability.
8" Diameter Hollow Fiber modules - DOW-CTA	RO	6000 gpd	on-stream	Determine module reliability and membrane performance and longevity.
3" Diameter Spiral Wound Ultra-filtration element-Abcor (Pretreatment)	UF	900 gpd	on-stream	Evaluate Spiral wound UF element as a seawater pretreatment process for RO desalting.
Hollow Fiber Ultra-filtration element - Romicon (Pretreatment)	UF	21,600 gpd	on-stream	Evaluate Hollow Fiber UF element as a seawater pretreatment process for RO desalting.
8" Diameter Hollow Fiber module - DOW-CTA	RO	2000 gpd	on-stream	Evaluate module performance with seawater feed from Ultra-filtration pretreatment.
4" Diameter Spiral Wound elements - Fluid Systems RC-100	RO	2000 gpd	on-stream	Determine membrane performance characteristic with different levels of dissolved gases in feedwater.
4" Diameter Spiral Wound elements - Fluid Systems RC-100	RO	3000 gpd	on-stream	Determine effect of different chemical feedwater additives on membrane performance.
4" Diameter Spiral Wound elements - Fluid Systems RC-100 (Cleaning Studies)	RO	3000 gpd	on-stream	Evaluate element cleaning procedures to recover membrane performance.

MEMBRANE EVALUATION PROGRAM at Wrightsville Beach Test Facility (continued)

Unit Designation	Type	Capacity	Schedule	Test Objective
Passive reciprocating energy transfer bench scale unit - Polymetrics (Energy Recovery)	reciprocating	20 gpm	on-stream	Evaluate design concept and reliability.
Seawater High Temperature Electrodialysis pilot plant - Ionics	ED	50,000 gpd	FY-81	Evaluate system design, performance, reliability, on-stream factor, and energy consumption.
10.2 ft^2 Diatomaceous Earth Filter unit - Johns-Manville (pretreatment)			on-stream 2nd qtr.	Evaluate diatomite precoat filtration for pretreatment to seawater.
12" Diameter Spiral Wound elements - Fluid Systems (Large Prototype Elements)	RO	50,000 gpd	on-stream	Evaluate large spiral wound element integrity and performance.
Spiral Wound and Hollow Fiber rejuvenation test Loop - Burns & Roe	RO		on-stream	Evaluate various rejuvenation methods on RO element to recover membrane performance.
Membrane Characterization Test Unit - FRL, FilmTec, etc.	RO		on-stream	Membrane characterization studies of new membrane formulations and element designs.
50,000 gpd seawater reverse osmosis pilot plant	RO	50,000 gpd	FY-81	Evaluation of two RO configurations that represent the seawater state-of-the-art technology to provide initial base reference data.

MEMBRANE EVALUATION PROGRAM at Roswell Test Facility

Unit Designation	Type	Capacity	Schedule	Test Objective
4" Diameter Spiral Wound elements - Membrane Systems MSI-400	RO	2000 gpd	on-stream	Determine element reliability and membrane performance and longevity.
6" Diameter Hollow Fiber modules - DOW-CTA	RO	10,000 gpd	on-stream	Determine module reliability and membrane performance and longevity.
2.5" Diameter Spiral Wound elements - Fluid Systems TFC (membrane development)	RO	1000 gpd	on-stream	Determine membrane performance of various TFC membranes.
EDR Pilot Plant- Ionics	ED	80,000 gpd	on-stream	Evaluate EDR pilot plant system to lead to full commercial size demonstration.
High area utilization ED stack - Ionics (Large Prototype Elements)	ED	250,000 gpd	FY-81	Evaluate large high area ED stack integrity and performance.
Solar/Ed system - Ionics	ED	5000 gpd	FY-81	Evaluate system performance and reliability.
12" Diameter Spiral Wound elements - Fluid Systems (Large Prototype Elements)	RO	50,000 gpd	FY-81	Evaluate large spiral wound element integrity and performance.
8" Diameter Spiral Wound elements - Hydranautics CA Blend	RO	20,000 gpd	FY-81	Evaluate and establish performance baseline on commerical 8" Diameter spiral wound elements.
Membrane Characterization Test Unit - FRL, FilmTec, etc.	RO		on-stream	Membrane characterization studies of new membrane formulations and element designs.

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MEMBRANE EVALUATION PROGRAM at Roswell Test Facility (continued)

Unit Designation	Type	Capacity	Schedule	Test Objective
16" Diameter Hollow Fiber Module - DOW-CTA	RO	100,000 gpd	FY-81	Evaluate large module design concept, performance and reliability.
Two-stage Low pressure - intermediate pressure RO unit for Virginia Beach Demo plant simulation		54,000 gpd	FY-81	Evaluate combined low pressure intermediate pressure RO design concept to lead to full commercial size demonstration.

Adsorption Freezing Vapor Compression/Liquified Natural Gas-
Significance

Question: Please explain the significance of the adsorption freezing vapor compression (AFVC) pilot plant which was proposed to be joined with liquified natural gas (LNG) vaporizing facilities.

Answer: The AFVC pilot plant uses a freezing desalination process which is developed sufficiently to utilize the "cold BTU's" available from and which would otherwise be lost in the vaporization of liquified natural gas. The significance of the proposed research work is that fresh water can be produced cheaply by taking advantage of the free energy. (Gases are compressed and held under pressure to reduce their volume for economical storage and shipment. Under pressure, the gases become liquid and upon release of the pressure, they absorb heat from the environment while releasing comparable amounts of "Cold BTU's). Seawater at its ambient temperature would provide the heat to vaporize the gas and in turn be used to produce the fresh water as a by-product.

Question: What was the total cost of this program to be?

Answer: The estimated cost of the development program is $1.5 million.

Question: What percentage cost sharing was there with the utilities involved?

Answer: The cost-sharing between the Interior Department and private utilities would be on a 50-50 basis.

Question: Where would the process be located?

Answer: The pilot plant would be located at an LNG vaporizing site in Southern California or the Gulf of Mexico.

Question: What is the likelihood that the utilities will continue this project on their own? What utilities are involved?

Answer: AFVC/LNG is a high-risk technology. It is believed that private industry will not pursue this research and development since the production of water is of secondary importance to the utility companies. The utilities involved are: Southern California Gas Co., Western LNG Associated, and Pacific Gas and Electric Co.

Question: What is the overall significance of the project?

Answer: The overall significance of the project is the ability to combine a desalination process with a cheap energy source to produce fresh water. Both desalinated water and vaporized gas would be produced at reduced costs.

Question: When would it have been completed?

Answer: The entire project would require about four years. If started in FY 1981, the development work would be completed in FY 1985 or FY 1986.

Cost Estimates for Alamogordo and Virginia Beach Demonstration Plants

Question: What is the cost estimate for each of the first two proposed plants?

Answer: The February 1981 cost estimate for the design, construction, and operation and maintenance is:

($000)

Plant	Total Federal Cost	Total Local Cost	Total Plant Cost
Alamogordo, N.M.	13,237	2,336	15,573
Virginia Beach, Va.	12,253	6,598	18,851

Question: How does that compare to previous estimates?

Answer: Estimates for the two plants by year are as follows:

Alamogordo Plant ($000)

Estimate Years	Federal Share	Local Share	Total
February 1980	10,080	1,784	11,864
June 1980	11,283	1,995	13,278
February 1981	13,237	2,336	15,573
Virginia Beach ($000)			
February 1980	9,084	4,894	13,978
June 1980	10,160	5,474	15,634
February 1981	12,253	6,598	18,851

Question: What is the estimate of the cost of the water produced by these plants?

Answer: The Kaiser Report estimated in August 1979 the cost of the water produced by Alamogordo and Virginia Beach at $2.53 per 1,000 gallons and $2.93 per 1,000 gallons, respectively. The costs include operation and maintenance and capital recovery.

Question: How does this compare to previous estimates?

Answer: No other estimates have been made.

Question: How reliable are current cost estimates and if the projects were to continue; when would more precise estimates be available?

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Answer: The February 1981 cost estimates are based upon the Kaiser Report estimates of August 1979 adjusted in accordance with factors supplied by OMB for escalation. While these figures are considered reasonable for planning purposes, they do not have the precision of an engineer's cost estimate which would be based on working plans and specifications. The engineer's cost estimates would come at the end of and be a part of the design phase. Had the demonstration program not been interrupted, the design phase would have ended in the first quarter of FY 1982.

Demonstration Plant Cooperative Agreements

Question: In each of the two cases, please describe the main features of the cooperative agreements with the localities, to include the amount and kind of cost sharing and when it is expected to occur if the projects go ahead.

Answer: The main features of the cooperative agreements are outlined below. The outline includes amount and kind of cost-sharing. Cost-sharing, although not in fixed amounts, would occur as the projects proceed, but with the final result being that the Federal Government would have paid its proportionate share and each City would have paid their respective shares by the completion of the demonstration projects.

The main feature of the cooperative agreements are:

Purpose: To authorize and provide Federal share of funds to City to undertake design of two million gallons per day capacity desalting demonstration plant.

Rights and Obligations of Parties:

United States:

- provide qualified technical personnel for liaison with City.
- advise City of recommended actions to enhance certainty of project success, alleviate schedule delays and minimize technical difficulties.
- contribute sixty-five percent (65%) for Virginia Beach and thirty-five percent (35%) for Alamogordo of total desalting plant cost, including four years of operation and maintenance expenses.
- approve selection of architect-engineer (A-E) for detailed design and construction supervision.
- provide City with initial design criteria.
- provide technical consultation to City's A-E to insure that drawings and bid specifications will obtain desired process technology.
- approve design drawings and bid specifications.

City:

- to be sole owner of desalting plant.

- to be project manager in planning, design, and construction of plant. Use procurement standards in accordance with OMB Circular A-102.

- to solicit proposals for A-E for detailed design and construction.

- abide by general provisions for Federal projects.

- to execute and administer the A-E contract. A-E contract to incorporate the general provisions above.

- to obtain necessary permits.

- Virginia Beach to provide thirty-five percent (35%) and Alamogordo to provide fifteen percent (15%) of the total desalting plant cost including cost of four years of operation and maintenance with both cities' share of design costs to consist of in-kind and cash contributions for services previously rendered at various preliminary stages of the desalting project from December 22, 1978 onward.

- in close cooperation with United States, design the desalting plant and supporting facilities, including a visitor center.

- keep United States advised of matters relative to design.

- provide the United States with reasonable environmental information pertaining to the desalting plant and its impacts, when requested.

Neither party to Agreement is committed or obligated to continue the desalting plant beyond that point for which appropriated funds are already available to either party as of the date of execution of the agreement.

Agreement is for fifteen months.

Each party agreed to be responsible for its own acts and not to be responsible for acts of the other party.

FIVE-YEAR NATIONAL RESEARCH PRIORITIES

Mr. YATES. Has your five-year national research goal been completed yet?

Mr. COBB. No, Mr. Chairman. It is now being reviewed by a group at the National Academy of Sciences. When that review is completed, the Federal agencies will have to finalize the plan which will then be submitted to the Congress. That's expected to be around July 1 under the present schedule.

WATER REUSE

Mr. YATES. In your water reuse area you wanted an increase of $403,000 to do research concerned with water supply barriers to energy development. What will be the effect of not doing this research in fiscal year 1982? What is the effect of terminating that? Will it be carried on by somebody else or do you just close shop on it?

Mr. COBB. I don't know if somebody else will do it. We would just close shop, Mr. Chairman.

ON-GOING PROJECTS AT TEST FACILITIES

Mr. YATES. How many development projects are now in existence at your two test facilities in North Carolina and New Mexico?

Mr. COBB. Twenty-two and twenty, Mr. Chairman.

Mr. YATES. Some are going to be terminated immediately and some are going to be carried on?

Mr. COBB. Well, hopefully we will be able to carry them all through September 30 of the current fiscal year but we would not necessarily complete the test program for all of them. Some of them will be terminated at mid-test.

Mr. YATES. Would you put in the record what the additional cost would be to the Government to determine what the investment has been and what the respective cost would be?

Mr. COBB. Yes, sir.

TERMINATION COSTS OF TESTS FACILITIES

Test facilities at Wrightsville Beach, North Carolina; Roswell, New Mexico; and Orange County, California, will have to be disposed of. The facility at Wrightsville Beach is federally owned. The water intake and supply lines, however, would have to be removed. This work, together with general site restoration prior to disposal by GSA, is estimated to cost $300 thousand. At Roswell, also federally owned, the restoration work would be less extensive, about $200 thousand. At Fountain Valley Test Facility, Orange County, California, which is not federally owned, except for parts of the facility and some of the equipment, the action is less clear. Removal of the U.S.-owned portion could be required, with restoration of the site as originally specified in the agreement with Orange County. In 1977, the cost of site restoration was estimated to be approximately equal to the salvage value of Government-owned equipment located there. Changed economic conditions could result in additional costs.

At the time, OWRT has on hand advanced desalting systems and components for pilot testing and evaluation valued at roughly $6 million for which salvage values and disposal costs have not yet been determined.

Mr. MORRIS. Excuse me, Mr. Chairman. You asked a few moments ago about projects being conducted at the test facilities. On page A-96 of the OWRT budget is a list of the test facility projects. It is at the very end in Tab IV—the last two pages of that section.

Mr. YATES. All right. That was quick action.
Mr. COBB. We will provide that.

MOBILE TREATMENT FACILITY

Mr. YATES. All right.
What is going to happen to your Mobile treatment facility?
Mr. COBB. We will have to close that down, Mr. Chairman.
Mr. YATES. Have you had any results so far of its use? Any results so far as to whether or not it should have been continued?
Mr. COBB. I think it has been an effective program but I will ask.
Mr. YATES. All right.
Mr. COBB. It has been an effective program. I think we were going to continue it in fiscal year 1982 but let me check.
Mr. YATES. How had it been effective?
Mr. COBB. Results are available from pilot studies of industrial wastewater treatment requirements for non-potable reuse using mobile treatment units. Site investigations were for food processing, paper manufacture, organic chemical production, and aluminum smelting and fabrication. All of the desalting technologies investigated—ion exchange, reverse osmosis, and electrodialysis—are capable of producing high quality, low dissolved solids—water suitable for nonpotable industrial reuse. These technologies would require in each instance proper pretreatment of the wastewater for removal of residual suspended solids and certain soluble organics.

SECONDARY REFRIGERANT FREEZING

Mr. YATES. What happens to your secondary refrigerant freeze concentration pilot plant?
Mr. COBB. Mr. Hahn?
Mr. YATES. Is that dead with the cutoff of the appropriations?
Mr. HAHN. The indirect contact pilot plant? Yes, Mr. Chairman. Fabrication is approximately 90 percent complete, but it will never see testing at the Wrightsville Beach Test Facility.
Mr. YATES. What about industrial cost participation, is there any?
Mr. HAHN. There is approximately 50 percent participation in that plant.
Mr. YATES. Could industry take it over?
Mr. HAHN. It would be my understanding that they would proof test it, yes, sir.
Mr. YATES. So who pays to complete it? Will industry take up the remaining cost? You say it is 90 percent completed.
Mr. HAHN. We have already contracted and funded for the completion of the pilot plant.
Mr. YATES. I see.
Mr. HAHN. Through some arrangement with the contractor, the testing could take place. There would be questions concerning title to the equipment which is now with the Government but we could anticipate that they would offer to test it under some sort of an arrangement. But, that plant would never see testing at Wrightsville Beach which was our goal.

GOOD HOUSEKEEPING SEAL OF APPROVAL

Mr. COBB. Just to comment about testing at Wrightsville Beach as opposed to elsewhere. What OWRT does through its test is to provide a sort of Good Housekeeping Seal of Approval with respect to certifiying the result. Industry could and does some of its own testing but when they go over to Saudi Arabia or some other place and say that their plant has certain performance characteristics, it is taken with a grain of salt. What we do is publish the result of the tests taken under our rigid standards. That's a kind of a certification—an important aspect of our program.

Mr. MORRIS. Mr. Chairman, a couple days ago we had a representative who came to visit us with the expectation of being able to enter into an agreement that would permit the testing of one of his company's new membranes at one of our test facilities. They were disappointed to learn that there would no longer be such an opportunity. They indicated that there were no other test facilities that would be available except for ours.

Mr. YATES. Your test facility is at Wrightsville Beach?

Mr. MORRIS. Yes.

INDUSTRIAL TEST FACILITIES

Mr. YATES. Industry does not have those facilities?

Mr. COBB. No, sir. Celanese Corporation does not.

Mr. YATES. Doesn't have to build them.

Mr. MORRIS. They would have to build them.

Mr. COBB. They indicated to us that they could not incur that investment.

Mr. YATES. How much is that investment?

Mr. COBB. The controls would be several million dollars.

DEMONSTRATION PLANT PROGRAM

Mr. YATES. What happens when your demonstration plant program is terminated? Will that purpose be carried out? What happens to the demonstration?

Mr. COBB. It will not move forward.

FOREIGN DESALTING PROGRAMS

Mr. YATES. What other countries are in the desalination business besides Japan and the United States? Germany was, too.

Mr. COBB. West Germany, France and the United Kingdom.

Mr. YATES. How are they doing? Do they all have their testing facilities for the membranes?

Mr. COBB. No, not all have the same level of program that we do. The Japanese might. I have been to the Water Reuse Test Center at Chigasaki, where they do very similar things to those we do. It is a very sophisticated program involving both private industry, government and the universities in sort of a consortium.

Mr. YATES. Do you happen to know how much they spend down there?

Mr. COBB. At Chigasaki, about $10 million annually; $5 million in government and $5 million in industry. The total Japanese

program is about $30 million annually; $20 million in government and $10 million in industry.

INDUSTRY CONTRIBUTION TO RESEARCH

Mr. YATES. How much does industry spend on this program, do you have any idea?

Mr. COBB. In the United States?

Mr. YATES. Yes, research and development.

Mr. COBB. Mr. Hahn, you just worked that question. What is the answer? We have the answer of how much other countries spend, too, and we will provide that for the record.

Mr. YATES. All right.

Mr. HAHN. I am sorry, Mr. Chairman, I don't have those figures with me. They are broken down several ways.

Mr. YATES. Put those in the record, too.

Mr. HAHN. Yes.

[The information follows:]

FOREIGN COUNTRIES DESALTING R&D BUDGETS

Assistance to industry in some foreign countries is provided in the form of Government-backed loans and bid bond guarantees to facilitate response to international tenders for desalting equipment. This type of support encourages the industry to grow and provides incentives for privately-financed R. & D. In addition, some governments support and coordinate desalting R. & D. through provisions of central test facilities (e.g., Japan and France), support of special projects with government grants (e.g., Germany), and direct government programs (e.g., Israel, South Africa, and France). OWRT is aware of government-supported programs in Russia; however, it is difficult to obtain information. Based on a limited ability to obtain comprehensive data on foreign programs, OWRT has made the following estimates on current annual funding for desalination R. & D.:

[In millions of dollars]

Israel:	
Government	$5.0
Private	0
South Africa:	
Government	0.8
Private	0
Japan:	
Government	20.0
Private	10.0
France:	
Government	1.2
Private	3.0
Germany:	
Government	5.0
Private	4.0

In addition, Chemical Engineering magazine, in its December 1, 1980 issue, reported that the five leading Japanese chemical companies requested the Japanese Government to appropriate $123.8 million over the next 10 years for a special effort on polymer research and development, an integral aspect of RO and ED membranes. Also, we are aware that the West German Government has invested approximately $25 million in a distillation demonstration plant.

The estimate given for France is low. Desalination R. & D. in France is carried out by an organizational unit within France's Atomic Energy Agency. Its distillation test facility is located at a French naval base. France's leading manufacturer, SIDEM, is a government/private partnership with the head of the government's program serving also in the SIDEM organization. Costs of government and private contributions are difficult to determine.

Desalting manufacturing also occurs in Great Britain, the Netherlands, Switzerland, Sweden, and Italy. The amounts of government support are not known. Italian support is thought to be high, although indirect.

OWRT Desalting Budget

Approximately 20 percent of the OWRT saline water R.&D. projects involves cost-sharing of varying degrees. Of $5 million in ongoing research, about 2 percent, $100,000, is supplied by industry or the universities involved. The willingness of industry to cost-share, particularly in a major program, is usually based on the obtaining of patent waivers. In development, cost-sharing ranging from 30-to-50 percent is usually required before waivers are seriously considered. Four major development projects funded in fiscal year 1980 were in this category. Twelve others were cost-shared on a smaller scale. In fiscal year 1980, industry spent approximately $1.4 million on OWRT development projects.

Estimating the amount which U.S. industry spends on saline water R.&D. is extremely difficult. There are no trade organizations which sponsor R.&D. and individual companies rarely disclose details of their research budgets. Considering that research funds are normally provided from current profits and that the desalting market is still relatively small, only the larger companies can afford research specifically related to desalination systems. Accordingly, total industry research on advanced processes is estimated at $1 to $2 million annually, and on product development at $4 to $5 million annually.

TECHNOLOGY TRANSFER AND WATER RESOURCES SCIENTIFIC INFORMATION CENTER

Mr. Yates. When OWRT's programs are terminated, what continuing technology transfer activities are required?

Mr. Cobb. There would be none, Mr. Chairman. It will be a tremendous loss. Maybe when we are terminated the computer system will be transferred to another agency. It would take about $600,000 a year just to maintain the input side of the system.

Mr. Yates. How important is the system?

Mr. Cobb. Well, we have several millions of dollars invested in this computerized system and it will very quickly become obsolete if we don't continue the inputs. Even though it might be continued for some period of time without new inputs, it would soon be out of date.

Mr. Yates. Who is likely to keep putting inputs in if you are not there?

Mr. Cobb. We would want to talk with other bureaus within the Department and see if there were some interest. I am very worried about terminating that program.

Mr. Jensen, do you want to add to this?

Mr. Jensen. Only that we recently marketed the data base to a number of major commmercial networks and they have just started to offer searches of the data base to the public but that market will disappear if we don't add new input to the data base. We have invested over $7 million so far in this file.

Mr. Yates. Do you mean industry is interested in buying your file?

Mr. Jensen. They lease it for approximately $6,000 a year; this includes current information and the retrospective file and then they feed back royalties to the Government as they sell searches.

Mr. Yates. How much money comes in?

Mr. Jensen. It is just starting this summer. We sold the file to Lockheed, the Systems Development Corporation, and the New England Regional Association Center.

Mr. Yates. Thank you very much.

Is there anything else you want to tell us that might cheer up this meeting?

Mr. COBB. No, sir.

Mr. YATES. Thank you very much.

TUESDAY, APRIL 7, 1981.

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

WITNESSES

ANDREW V. BAILEY, ACTING DIRECTOR
CARL C. CLOSE, ASSISTANT DIRECTOR, STATE AND FEDERAL PROGRAMS
CHARLES A. BEASLEY, ASSISTANT DIRECTOR, ABANDONED MINE LANDS
TONEY HEAD, JR., ASSISTANT DIRECTOR, MANAGEMENT AND BUDGET
EDWARD A. JOHNSON, ACTING ASSISTANT DIRECTOR, TECHNICAL SERVICES AND RESEARCH
HARRIET B. MARPLE, CHIEF, DIVISION OF ENFORCEMENT
CARSON W. CULP, JR., FINANCIAL MANAGER
DONALD TINDAL, ASSOCIATE SOLICITOR, DIVISION OF SURFACE MINING, OFFICE OF THE SOLICITOR, DEPARTMENT OF THE INTERIOR
CHARLES HARDY, ASSISTANT SOLICITOR FOR GOVERNMENT RELATIONS, DIVISION OF SURFACE MINING, OFFICE OF SOLICITOR, DEPARTMENT OF THE INTERIOR
JOSEPH W. GORRELL, DEPUTY DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

Mr. YATES. The hearing will please come to order.

This is the hearing on the appropriations for fiscal year 1982 of the Office of Surface Mining, appearing in support and on the question of rescission of $1,954,000 for fiscal year 1981.

The biographies of Messrs. Bailey, Johnson and Ms. Marple may go into the record at this point.

[The biographies follow:]

ANDREW V. BAILEY, ACTING DIRECTOR

Mr. Bailey was born in Bessemer, Alabama in 1922. He holds a B.S. degree in Mining Engineering from the University of Alabama, 1952.

Mr. Bailey is a registered Professional Engineer and a certified Professional Geologist.

Prior to his appointment as Acting Director of the Office of Surface Mining, Mr. Bailey served as Chief, Branch of Solid Mineral Management, Division of Conversion with the United States Geological Survey. In that position from May 1980 to January 1981, Mr. Bailey was responsible for programs involving mineral land classification, mineral resources evaluation, exploration, mining processing, environmental protection and reclamation for solid minerals, with the exception of coal, on Federal and Indian lands.

Mr. Bailey's earlier career includes twenty-six years of service at Geological Survey serving as Branch Chief for Mining, January 1973 to May 1980, Regional Mining Supervisor and Assistant Chief for the Branch of Mining Operation, July 1966 to January 1973, and as a Mining Engineer with the Geological Survey's Division of Conservation in Miami, Oklahoma, September 1955 to July 1966.

Mr. Bailey resides in Fairfax, Virginia with his wife, Jennie, and son Kevin. He has 3 married children living in Northern Virginia, Andrew II, John and Lisa.

EDWARD A. JOHNSON, ACTING ASSISTANT DIRECTOR, TECHNICAL SERVICES AND RESEARCH

Mr. Johnson is Acting Assistant Director for Technical Services and Research.

Prior to his appointment as Acting Assistant Director, Mr. Johnson served as Senior Scientist for OSM's Division of Technical Services since May 1978. He was responsible for providing national and international technical guidance, as well as providing analyses and evaluations in mining and reclamation.

From October 1965 to May 1978, Mr. Johnson served as a forester with the U.S. Department of Agriculture's Forest Service in Watershed Management, he provided national level technical leadership to field units for water, soil and minerals area management programs.

From 1956 to 1965 he served as Assistant Director for Watershed Research with the U.S. Forest Service, where he provided technical assistance in range management, watershed management, wildlife habitat and recreation with emphasis on surface mine reclamation.

Mr. Johnson holds degrees from the University of Michigan's School of Forestry and the University of Tennessee graduate school.

HARRIET B. MARPLE, CHIEF, DIVISION OF ENFORCEMENT

Harriet B. Marple is Chief of the Division of Enforcement of the Office of Surface Mining (OSM). An attorney with extensive background in environmental law, she is responsible for policy and regulation development, evaluation of State and Federal enforcement and penalty assessment programs.

Ms. Marple came to OSM from the Environmental Protection Agency where, as judicial officer, she advised the Administrator regarding decisions in administrative cases arising out of EPA's regulatory programs. Prior to her EPA appointment, she was an attorney with International Paper Company, where she was responsible for environmental law matters, 1973–1976. She served as deputy general counsel for the New York City Environmental Protection Administration, 1971–1973, and practiced corporate and banking law with Kelley, Drye & Warren in New York City, 1966–1971.

Ms. Marple holds a law degree from Harvard Law School and a Bachelor's degree from Radcliffe College.

OPENING REMARKS

Mr. YATES. Mr. Bailey, we will be very glad to hear what you have to say in support of the appropriation, or in opposition to it, if you wish.

Mr. BAILEY. Mr. Chairman, I would just like to highlight my statement, if it is all right with you.

Mr. YATES. It is all right with me.

Mr. BAILEY. Mr. Chairman, it is a privilege to appear before this committee to discuss the fiscal year 1982 budget for the Office of Surface Mining.

Before I discuss the revised estimates, I would like to outline some of the initiatives started at OSM in the last two months. They are expressly intended to reflect a balanced perspective on the intents and purposes of the law.

Regulatory relief is one of the pillars of President Reagan's program for economic recovery. There is a basic recognition that we must closely assess and take into account the nation's need for coal production.

Our first step in that direction is to expeditiously review and identify those regulations that are and will be burdensome and non-productive. A great deal of work has been done under the review in the last two months. The regulations that are being

revised will in no way lessen the environmental and reclamation standards required by the Act.

It is important to note that the regulations we are reassessing will be submitted to the States for review before being issued as proposed rules.

We firmly believe that these actions will recognize the States as full partners in shaping regulatory programs to meet the varying needs of their economies, mining practices and geologic conditions—the kind of flexibility the Congress intended.

The Office of Surface Mining's future role will be assisting the states and in program evaluation, not dictating the nuts and bolts of how progress is made. The states can rectify abandoned mine land and water resource problems, crack down on violators and make sure the environment is protected and land is reclaimed. They can do it and get on with the job of meeting our energy needs. Against this background, I will now highlight the budget.

Our budget request totals $179.8 million, an increase of $4.5 million over the fiscal year 1981 appropriations, but a reduction of $66.6 million from the January budget. Grants to the states increase by $36.7 million, while Federal activities, including the Mineral Institutes grant program decrease by a total of $32.2 million.

It is proposed that the Mineral Institute grants be discontinued because the types of activities involved can be supported by the states and the private sector. Consistent with the reduced Federal regulatory role, as states assume primacy, there will also be a net decrease in OSM of 241 positions, primarily in the area of Federal inspectors and inspection support personnel.

To date, 16 of the 27 coal-producing States have regulatory primacy. Three states—Alaska, Georgia and Washington—did not submit proposed programs. The remaining eight states, plus two of the 16 approved states, have been temporarily enjoined from either resubmitting or enforcing all or parts of the primacy programs. The budget request assumes the enjoined states will be implementing approved programs by October 1st of this year.

Under state primacy, OSM is no longer required to inspect all regulated facilities but will have a monitoring program and provide technical assistance to states to ensure that results are consistent with the purposes of the act.

This transition from initial direct Federal enforcement to a monitoring role makes possible the large reduction in the Federal inspection force, a reduction of nearly 56 percent from the fiscal year 1981 level.

Although most Federal functions are substantially decreased in this budget, one modest increase is requested. This is: 27 positions and $1.7 million for administration of state abandoned mine reclamation grants. A total of $70 million is requested for these grants, and fiscal year 1982 will be the first year in which the State reclamation activities will begin to approach the funding level authorized. The increase will be used to meet state annual project plan review requirements, to manage the grants in accordance with the applicable Federal grant procedures and, most importantly, to ensure that the highest priority work is accomplished without waste and inefficiency.

Mr. Chairman, as I stated at the outset, we propose a lean budget, but one which will ensure that the Surface Mining Act will be fully and efficiently implemented.

We will be pleased to answer your questions.

Thank you.

BUDGET DISCREPANCIES

Mr. YATES. Your budget differs from the official administration document. Their budget, the administration budget, differs from your budget by $15 thousand in regulation and technology. Theirs is $15 thousand above yours. Yet their abandoned mine regulation budget is $15 thousand below yours.

The figure that we have that you submitted for regulation and technology is $64,553,000. The revised budget submitted by the Reagan administration is $64,568,000.

Does that correspond to your figures?

Mr. CULP. Mr. Chairman, the budget request is $64,553,000. It is my understanding now that when OMB does the spring update of the budget, they will revise the figures to agree with the numbers that are in our justification.

It is a difference of $15,000, and it has to do with the——

Mr. YATES. It is really not that significant, is it?

Mr. CULP. That is correct, Mr. Chairman. It is the same total between the two appropriations. It is a difference in the distribution.

REDUCTION IN INSPECTION STAFF

Mr. YATES. You indicated in your statement that the reduction of Federal inspectors would not hurt the program. Would you tell me again why that would be? I have the impression that the inspectors are the heart of your program in making sure there is compliance with the act.

Mr. BAILEY. Yes, sir. The reason we say this will not hurt our program is this budget assumes all states will have primacy by October 1st of this year. If the states have primacy, they will be doing the primary inspecting and OSM will just have an oversight role in monitoring the state programs.

We will have sufficient inspectors to do that.

UNAPPROVED STATE PROGRAMS

Mr. YATES. Suppose the states don't have primacy by October 1. What happens then?

Mr. BAILEY. At that time we would probably have to come back and talk to you about an amendment or reprogramming.

Mr. YATES. From where would you reprogram? We have a pretty lean budget now, haven't we?

Mr. BAILEY. Yes.

Mr. YATES. From where would you reprogram?

Mr. CULP. Depending on the exact situation, it is possible we could have some grant funds available to reprogram, from the standpoint of not having a grant requirement for a particular state that failed to gain primacy.

Mr. YATES. You would use that grant fund for continuing the work of the inspectors?

Mr. CULP. Yes.

Mr. YATES. That is a delicate proceeding. How do you know whether or not to lay off people? Are you laying them off now?

Mr. CULP. No, we are not. We did have a reduction for this fiscal year which has been largely accomplished. We are not laying off any additional personnel.

Mr. YATES. What was the reduction for this fiscal year in inspectors?

Mr. CULP. From 222 to 156.

Mr. YATES. When was that accomplished?

Mr. CULP. That was early in the fiscal year.

Mr. HEAD. It was accomplished early in the fiscal year, sir. It is not completely accomplished at this time. Currently we have 161 inspectors onboard. We have 105 support and we have about 30 vacancies in that function.

Mr. YATES. What does "105 support" mean?

Mr. HEAD. Here we mean clerical personnel, district managers, assessment personnel and others. We are thinking of those persons involved in the inspection and enforcement but not actually directly inspecting mines.

Mr. YATES. So you have 160 onboard.

Mr. HEAD. 161 onboard.

INSPECTION WORKLOAD

Mr. YATES. How many mines do you have to inspect?

Ms. MARPLE. There are about 17,000 inspectable units.

Mr. YATES. Should I divide 17,000 by 161 in order to give an average load to an inspector? Is that the way you do it? Do you have areas that are allocated?

Ms. MARPLE. We calculate inspection load by assuming an inspector can do two-and-a-half inspections per week, and that he has 190 working days. in which to conduct inspections.

Mr. YATES. That leaves 2,000 uninspected on that basis, doesn't it?

Ms. MARPLE. Currently?

Mr. YATES. Yes.

Ms. MARPLE. It is true there would be some interim program shortfall with those numbers.

Mr. BAILEY. Some of the states already have primacy and are doing their own inspections, so we do not expect a major shortfall this year.

Mr. YATES. Do you have any oversight over the states' inspection?

Mr. BAILEY. Yes, sir, we do.

Mr. YATES. How many people are doing that?

How many states have primacy? Let's start with that figure.

Mr. BAILEY. Sixteen states.

Mr. YATES. How many states remain to obtain primacy by October 1st?

Mr. BAILEY. Eight states.

Mr. YATES. That is 24 in all.

You are not really doing any oversight at all now, are you?

Mr. BAILEY. We have done some oversight in the state of Texas, which has had primacy for one full year.

POLICY ON INSPECTIONS

Mr. YATES. Let's take a look at your memorandum, Mr. Bailey, on March 12, to the Regional Directors on inspection policy, to states with primacy. It says, "Once a state has been granted primacy, OSM inspection activities should be limited to only those circumstances where inspections are required." Then you say there are only five instances in which OSM should be conducting inspections.

One, when a state fails to take appropriate enforcement action after being notified by OSM pursuant to section 521(a)(1).

What kind of notice is that?

Mr. BAILEY. It is a 10-day notice. We give the states 10 days to take some action on the violation if we get a citizen's complaint.

Mr. YATES. If you don't get a citizen's complaint no action is taken?

Mr. BAILEY. No, sir.

Mr. YATES. If you don't get a citizen's complaint, then you assume there are no violations?

Mr. BAILEY. The states will be making inspections during that time.

Mr. YATES. How do you know whether the states are making inspections?

Mr. BAILEY. They have to supply copies of their inspection reports.

Mr. YATES. What is the nature of the inspection report they have to furnish you?

Mr. BAILEY. I would ask Ms. Marple to answer that.

Ms. MARPLE. They furnish copies of every enforcement action they take and every permit they have approved.

Mr. YATES. Does your reply mean that they do inspections in the absence of enforcement actions?

Ms. MARPLE. Frequently you will inspect and find there are no violations, so in that case there would be no enforcement action.

Mr. YATES. My question was, how did you know what states are inspecting mines if all the notice they give you is one of certain enforcement actions taken?

Ms. MARPLE. I guess it is just a matter of common understanding and consideration between the states and OSM.

We would know that states have inspection forces that are inspecting because we would get inspection reports. We don't know the precise level at which they inspect currently.

Mr. YATES. How did you know that the inspection forces are adequate to conduct the inspections?

Ms. MARPLE. Are you talking about primacy states?

Mr. YATES. I am talking about primacy states; yes.

Ms. MARPLE. I think Carl Close could respond better than I.

Mr. CLOSE. There will be later this year an oversight program implemented to check up on exactly what the states are doing. If you ask me today, do I know that the state inspection forces are adequate in all cases to do all of the required inspections, I could not say for sure, because there is still some question over the

number of inspectors actually required in states. We will, of course, check up on them and if we find the numbers are not adequate, ask the state to hire move inspectors.

STATE PROGRAM APPROVALS

Mr. YATES. How does the state achieve primacy?

Mr. BAILEY. Mr. Chairman, states achieve primacy by having legislation and regulations in line with the Surface Mining Act. These have to be approved by the Department, and once the program is approved, they have primacy.

Mr. YATES. In connection with their application for primacy, do they have to relate a program for inspection of their surface mining?

Mr. BAILEY. Yes, sir.

Mr. YATES. How do you know they adhere to that program?

Mr. BAILEY. That will be one of the activities where OSM will have oversight and evaluation to monitor the State program. That is required by the Act.

Mr. YATES. You say sixteen states now have primacy. Would you place in the record the 16 states that have primacy and the 8 that remain?

Mr. BAILEY. We will be glad to do that.

[The information follows:]

STATE PROGRAM STATUS

Coal producing states with primacy: Arkansas, Colorado, Iowa, Kansas, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Oklahoma,[1] Texas, Utah, West Virginia,[2] and Wyoming.

Coal producing states temporarily enjoined from resubmitting programs: Alabama, Illinois, Indiana, Kentucky, Pennsylvania, Ohio, Tennessee, and Virginia.

Coal producing states which did not submit programs: Alaska, Georgia, and Washington.

STATES WITH PRIMACY

Mr. YATES. Which is the state with the longest term of primacy, so far?

Mr. BAILEY. Texas.

Mr. YATES. When did Texas achieve primacy?

Mr. BAILEY. June 18, 1980.

Mr. YATES. Have you reviewed the inspection procedures of the state of Texas at all yet?

Mr. BAILEY. OSM Region 4 reports that they had been making some oversight inspections in Texas, and some flyovers to inspect what Texas has done.

Mr. YATES. Have they reported back to you?

Mr. BAILEY. They have not.

Mr. YATES. How does it happen that they notified you of what they were doing? Were there notices of violation?

Mr. BAILEY. No, sir; we were just talking about Texas, and the region said it was time to start making some further evaluations. That was several weeks ago.

Mr. YATES. So you don't know what they have done yet?

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[1] Currently under injunction and therefore in interim program status.

[2] Currently under partial injunction, but operating in primacy status.

Mr. BAILEY. No, sir. They will submit the report when they complete the evaluation.

Mr. YATES. Would you submit that for the record when it comes in?

Mr. BAILEY. Yes, sir.

[The information follows:]

TEXAS OVERSIGHT ACTIVITIES

The Office of Surface Mining (OSM) has completed two oversight inspections of surface mining in Texas. The State's compliance record in connection with these inspections is good and no violations of the Act or applicable regulations were found. OSM's work in establishing a formal oversight program to evaluate the adequacy of permanent State regulatory programs continues. When a formal evaluation of the Texas program is completed OSM will forward a copy to the Subcommittee.

INSPECTION ACTIVITY IN OTHER PRIMACY STATES

Mr. YATES. What is the next state after Texas?

Mr. BAILEY. Montana.

Mr. YATES. When did Montana achieve primacy?

Mr. CLOSE. I see Montana was conditinally approved April 1st, 1980.

Mr. YATES. What was the next one finally approved? Montana is conditionally approved. Does your process of approving primacy require a temporary conditional approval and then a final approval?

Mr. CLOSE. No, sir. There are notices of a few minor errors that must be corrected.

Mr. YATES. To all intents and purposes conditional approval is tantamount to final approval except for a few technical matters that have to be cleared up?

Mr. CLOSE. That is correct.

Mr. YATES. Texas received its conditional approval when?

Mr. CLOSE. I don't have that date.

Mr. YATES. I understood Mr. Bailey to say Texas received conditional approval first.

Ms. MARPLE. It was February 27, 1980.

Mr. YATES. Then it took four months to clean up technical violations. Is that correct?

Mr. CLOSE. That is correct.

Mr. YATES. Then they were given full approval?

Mr. CLOSE. Yes, sir.

Mr. YATES. Montana is the next state in length of primacy?

Mr. CLOSE. That is correct.

Mr. YATES. Montana was conditionally approved when?

Mr. CLOSE. April 1st, 1980.

Mr. YATES. Has it received final approval yet?

Mr. CLOSE. It has not.

Mr. YATES. Have any other states received final approval?

Mr. CLOSE. Yes, sir. Mississippi.

Mr. YATES. When?

Mr. CLOSE. September 4, 1980. And Louisiana, October 10, 1980.

Mr. YATES. Any others? You have 16 as having achieved primacy.

Mr. CLOSE. That is correct. Only three have final approval.

Mr. YATES. That is Texas, Mississippi and Louisiana?

Mr. CLOSE. That is correct.

Mr. YATES. And all the others would have conditional approval coming at various times?

Mr. CLOSE. Yes, sir.

Mr. YATES. Do you have any inspections that have been made in Mississippi or Louisiana?

Mr. CLOSE. There is no active mining in either of those states at the present time.

STATES WITH NO MINING

Mr. YATES. If they don't have active mining, how do they get approved? Why would they be interested in getting approval there if there is no mining.

Mr. CLOSE. Those states anticipate mining in the next year or two and are gearing up their programs. They came in very early with the idea of having primacy before they started approvals of any explorational mining.

INSPECTIONS IN MONTANA

Mr. YATES. Montana was conditionally approved April 1st. Have there been any inspections of Montana?

Ms. MARPLE. No.

Mr. YATES. Why not.

Ms. MARPLE. The previous administration——

Mr. YATES. That is a year ago.

Ms. MARPLE. Yes.

The previous administration requested regional directors to take a low profile after primacy was achieved by states, to indicate OSM's good faith in allowing states to truly become the primary regulatory authority.

Mr. YATES. How long does that element of good faith exist.

Ms. MARPLE. Until the administration decides to go into a full program of oversight inspection.

Mr. YATES. And you are not going to do that, as I read the statement Mr. Bailey made. Item number 4 says that OSM oversight inspections conducted according to improved oversight program will be the only way in which you would have to conduct inspections, and then you go on to say, "Since no oversight program has yet been established, there should be no oversight inspections being conducted."

That is March 12. For the time being there will be no oversight inspections anywhere, is that right?

Mr. BAILEY. Mr. Chairman, I would like to respond to the question about Montana. There are a number of mines on Federal lands there, and OSM and the state have joint inspections on those lands; so OSM does know how Montana's program is progressing.

Mr. YATES. Does primacy by the states mean they have control over mining on Federal lands within their boundaries?

Mr. BAILEY. No, sir.

Mr. YATES. I don't understand your reply, then, Mr. Bailey.

Mr. BAILEY. When a state gets primacy it means the state has responsibility over private lands. Then the Secretary under the law

can enter into a cooperative agreement with the states where they can assist on Federal lands.

Mr. YATES. They will be inspecting mining on Federal lands, too?

Mr. BAILEY. Yes, sir.

Mr. CLOSE. Mr. Chairman, I might add to that, in all of the Western States, in addition to North Dakota, Utah and New Mexico, we have had cooperative agreements, either formal or informal. As a result, we work very closely with the states. In those cases we work regularly with them on mine plans and inspection and enforcement. Consequently, we have a good understanding of the efforts in those states.

Mr. YATES. How about Indian lands?

Mr. CLOSE. OSM is responsible with the Bureau of Indian Affairs and Geological Survey for drafting regulations on Indian lands. The states have no role.

Mr. YATES. There are no cooperative agreements on Indian lands?

Mr. CLOSE. That is correct.

Mr. YATES. Just Federal lands?

Mr. CLOSE. Yes, sir. We do work with the tribes.

Mr. YATES. The statement dated March 12 by Mr. Bailey may go into the record at this point.

[The information follows:]

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF SURFACE MINING,
Washington, D.C., March 12, 1981.

MEMORANDUM

To: Regional directors.
From: Acting Director Andy Bailey.
Subject: Inspection policy in States with primacy.

Once a state has been granted primacy, OSM inspection activities should be limited to only those circumstances where inspections are required. There are only five instances in which OSM should be conducting inspections:

1. When a state fails to take appropriate enforcement action after being notified by OSM pursuant to Section 521(a)(1).

2. When information received indicates that an imminent danger of significant environmental harm exists and the State has failed to take appropriate action (Section 521 (a)(1)).

3. Inspections required to follow-up on previous enforcement actions initiated by OSM. Such inspections should be limited to the minimum necessary to assure proper follow-up and compliance.

4. OSM oversight inspections conducted according to an approved oversight program. Since no oversight program has yet been established, there should be no oversight inspections being conducted.

5. Inspections conducted at state request to assist the state in carrying out an approved program.

Please assure that your inspection activities are being carried out in accordance with the above guidelines. It is essential that the states be given the maximum opportunity to establish themselves as the regulatory authority. We must make clear that primacy means that the states are in charge, and that OSM inspections are made only when specifically required.

LEEWAY FOR THE STATES

Mr. YATES. I must say you are giving the states all the leeway they need. Your last few sentences say:

It is essential the states be given maximum opportunity to establish themselves as the regulatory authority. We must make clear that primacy means that the states are in charge and that OSM inspections are made only when specifically required.

I guess the only thing we can do is ask for a report from you, say, in three months, to see what has happened.

How do you know? Is there no interest on the part of the Federal Government in making sure that the states comply with the Federal standards established under the OSM legislation?

Mr. BAILEY. The Federal Government is very interested. You have to give the states a little time to establish themselves.

Mr. YATES. How much time should we give them, Mr. Bailey?

Mr. BAILEY. We figure the transition going from the interim program to the permanent program will take about two years, but we are not going to wait that long to start oversight inspections.

Mr. YATES. In view of the message in this memorandum, why do you need any inspectors at this time?

Mr. BAILEY. We still have some states that have an interim program where the facilities have to be inspected twice a year.

Mr. YATES. Do you have any inspectors in states that have achieved primacy?

Mr. BAILEY. Yes, sir.

Mr. YATES. In view of the memorandum, why do you require Federal inspectors in those states?

Mr. CLOSE. We will have a full-fledged oversight and monitoring program in all states with primacy in fiscal year 1982. Those inspectors are required to inspect a sampling of the sites in each state with primacy. We expect to conduct inspections on approximately 17 percent of all mines in states with primacy, once a year.

Mr. YATES. Once a year. Have you done that in Montana?

Mr. BAILEY. No, sir, we have not done that in Montana.

Mr. YATES. Montana received conditional approval in 1980. No inspections?

Mr. BAILEY. That is correct, except on Federal lands.

NATIONAL STANDARDS ON STRIPMINING

Mr. YATES. Have national standards been established for stripmining throughout the country, pursuant to this legislation?

Mr. BAILEY. Yes, sir. The legislation set out performance standards and the states that have primacy are complying with them, and those in the interim program are complying with many of them.

Mr. YATES. Section 515 requires performance standards, and it requires the general performance standards shall be applicable to all surface coal mining and reclamation operations, to require the operation as a mine, to conduct surface coal mining operations so as to maximize the utilization and conservation of the solid fuel resource being recovered, so that affecting the land in the future through surface coal mining can be minimized.

Is your office required to assure that performance standards under that section will be enforced?

Mr. BAILEY. Yes, sir.

Mr. YATES. How do you propose to do it?

Mr. BAILEY. The states have to have regulations equivalent to Section 515 as part of their program to get primacy.

Mr. YATES. Are they given a 2-year grace period from that standard?

Mr. BAILEY. No, sir.

Mr. YATES. In the absence of any violation being reported to you, you are not going to look at them for two years, are you?

Mr. BAILEY. We did not say we would wait two years before starting to make inspection. We will get a full transition from the interim period in two years because it will take the states some time to get going, but we will be making inspections sooner than that. We will try to assist the states where they have shortcomings to correct them.

Mr. YATES. How are you going to do it?

I must say I am kind of chasing my tail in this thing. Section 4 says, "OSM oversight inspections shall be conducted according to an approved oversight program. Since no oversight program has yet been established, there should be no oversight inspections being conducted."

Mr. BAILEY. Right now we are working on an oversight program. We expect in the next three or four months to have one developed, and the inspectors will be diverted to start their oversight work.

INSPECTION ACTIVITIES IN PRIMARY STATES

Mr. YATES. What are the inspectors doing now in the states that have achieved primacy?

Mr. CLOSE. There are several activities in which the inspectors are engaged. They are carrying out inspections pursuant to section 521. They are becoming familiar with the state program, because once a State has primacy, it is the state's laws and regulations which will be applied to mining. Our oversight will be conducted as a review against State laws and regulations.

Then in some cases inspectors may well be helping the states to conduct their own inspections, to make technical changes, or to assist in other OSM programs. The number of inspectors so employed is still relatively small. We don't have idle inspectors on our hands.

Mr. YATES. I am sure of that.

Is there mining going on now in Montana and Texas?

Mr. BAILEY. Yes, sir.

Mr. YATES. Have your inspectors gone into either state to make sure that the performance standards are being complied with?

Mr. BAILEY. Yes, sir.

Mr. YATES. Have you gone in both states?

Mr. BAILEY. Yes, sir.

Mr. YATES. Have they reported they are complying with the performance standards?

Mr. BAILEY. We don't have the reports yet.

Mr. YATES. When do they go in?

Mr. BAILEY. In Texas they were inspecting in January. As far as Federal lands are concerned, we were making joint inspections with Montana.

Mr. YATES. When do they have those?

Mr. BAILEY. I don't have the specific dates.

Mr. YATES. It has been 4 months since they went into the Texas mines. Why haven't they reported to you?

Mr. BAILEY. Mr. Close, will you respond to that?

Mr. CLOSE. We do have informal reports from the inspections made in Texas. We don't have a formal written report at this time which we could show you.

The reaction of our inspectors in Texas is that the state is generally complying with the requirements of the Act. There are only 10 active mines in Texas and 12 active mines in Montana. Using a sampling procedure the number of mines we would have visited in this time would be relatively low, in any case.

Mr. YATES. Two of your inspectors at Kansas City take care of all the mines in Texas and two others take care of all the mines in Montana, since there are only 10 in one and 12 in another.

Mr. CLOSE. It would take fewer than that in an oversight program.

Mr. YATES. Why do you have so many inspectors?

Mr. CLOSE. Most of the inspectors are in the Eastern Appalachian states, where the number of mines is much higher.

LIST OF INSPECTABLE UNITS

Mr. YATES. Would you place in the record a list of your inspectable units, state by state?

Mr. CLOSE. We will be glad to do that.

Mr. YATES. Include numbers, and so forth.

[The information follows:]

INSPECTABLE UNITS

	Inspectable units (OSM count) [1]	Anticipated No. of inspectors per region (fiscal year 1982)
OSM region I:		
West Virginia	3,040	
Virginia	1,049	
Pennsylvania: eastern and western	3,071	
Maryland	163	
Total	7,323	26
OSM region II:		
Tennessee	614	
Kentucky: eastern and western	6,053	
Alabama	777	
Total	7,444	24
OSM region III:		
Ohio	985	
Illinois	329	
Indiana	293	
Total	1,607	11
OSM region IV:		
Iowa	11	
Missouri	39	
Kansas	42	
Arkansas	59	
Oklahoma	79	
Texas	11	
Total	241	4

Footnote at end of table.

INSPECTABLE UNITS—Continued

	Inspectable units (OSM count) [1]	Anticipated No. of inspectors per region (fiscal year 1982)
OSM region V:		
New Mexico	6	
North Dakota	11	
Utah	38	
Colorado	61	
Wyoming	34	
Montana	12	
Total	162	4
Grand total	16,777	69

[1] This is the latest count of inspectable facilities. The number shifts slightly depending on the coal market and other factors.

REDUCTIONS FOR INSPECTION AND ENFORCEMENT

Mr. YATES. You are cutting back the revised number from $16 million to $9 million for Federal inspection and enforcement in fiscal year 1982. Is that based upon the fact that there will be 16 states achieving primacy by the beginning of the fiscal year?

Mr. BAILEY. Based on the assumption we would have 24 with primacy at the beginning of October.

Mr. YATES. Are those all the states that will be inspected in this program? In how many states will you have inspection procedures?

Mr. BAILEY. Twenty-seven.

Mr. YATES. There will be three other states which you will need to have inspectors, is that right?

Mr. BAILEY. Yes, sir.

Mr. YATES. Which are those states?

Mr. BAILEY. Georgia, Washington and Alaska.

Mr. YATES. The number of inspectable units will be included in the list for those states as well?

Mr. BAILEY. Yes, sir.

Mr. YATES. Include the numbers of inspectors that you have available for each of these inspectable units.

STATUS OF JUDGE FLANNERY'S RULING

What is the status of Judge Flannery's ruling? Is it on appeal?

Mr. BAILEY. I would like Mr. Don Tindal, from the Solicitor's office, to respond.

Mr. YATES. What is the status of the appeal?

Mr. TINDAL. The appeal on the regulations is now undergoing serious negotiations, perhaps to resolve that suit before it actually goes to trial. We are talking with the industry, with other states, and with other parties to that litigation.

Mr. YATES. Do you mean trial or appeal?

Mr. TINDAL. I mean appeal.

Mr. YATES. Was the effect of Judge Flannery's ruling that the department can impose detailed reclamation requirements?

Mr. TINDAL. That decision, Mr. Chairman, was handed down in the last couple of days. That decision indicated, as you say, that the department can impose requirements on the states.

Mr. YATES. Has that tested the basic legislation?

Mr. TINDAL. Yes, sir.

Mr. YATES. Is there another case pending before Judge Flannery?

Mr. TINDAL. I am not familiar with all the cases before Judge Flannery. There are several, I believe, that are still under consideration by Judge Flannery. There are some that are now in the process of resolution, and there are some that are still on appeal from Judge Flannery's determination.

Mr. YATES. For the record, would you place a discussion of the status of all those cases?

Mr. TINDAL. Yes, sir.

[The information follows:]

PERMANENT SURFACE MINING REGULATION LITIGATION BEFORE U.S. DISTRICT COURT FOR THE DISTRICT OF COLUMBIA AND THE COURT OF APPEALS (JUDGE THOMAS FLANNERY)

The Secretary promulgated the permanent program regulations under the Surface Mining Act on March 13, 1979. Nine petitions for review of the regulations were filed in the United States District Court for the District of Columbia pursuant to Section 526(a)(1) of the Surface Mining Act. The complaints were filed by the State of Illinois, the Commonwealth of Virginia, six industry plaintiffs, and several environmental organizations. In this discussion parties are titled "Illinois", "Virginia", "NCA/AMC", "National Wildlife Federation", and the "Secretary." Approximately 100 issues were presented by one plaintiff or another.

The general issue of the Secretary's authority to prescribe minimum permit application and bonding regulations for State programs was heard initially by the District Court on a motion for a preliminary injunction. The District Court denied industry's request for a preliminary injunction on August 21, 1979. On appeal, a three-judge panel of the United States Court of Appeals for the District of Columbia Circuit ("Court of Appeals" or "D.C. Cir.") affirmed on the grounds that denial of industry's motion was discretionary. *In Re: Permanent Surface Mining Regulation Litigation,* No. 79-2073. The District Court then addressed the merits of this issue and ruled for the Secretary in an opinion dated February 26, 1980. *In Re: Permanent Surface Mining Regulation Litigation,* No. 79-1144.

An expedited appeal was taken by industry, and on July 10, 1980, a 2-judge panel of the Court of Appeals entered decision for industry appellants. *In Re: Permanent Surface Mining Regulation Litigation,* No. 80-1308, the Secretary filed a petition for rehearing and on August 25, 1980, the full Court of Appeals granted rehearing *en banc* and vacated the July 10 decision. The case was argued on August 25, 1980, and an opinion was issued on April 1, 1981. There the Court of Appeals concluded that the Secretary has authority to prescribe minimum permit application and bonding requirements for State programs and accordingly affirmed the February 26, 1980 judgment of the District Court.

Other issues raised by plaintiffs in their complaint before the District Court were carefully considered by the Secretary and, in limited instances, conceded by the Secretary prior to the District Court's ruling on the merits. These issues are listed in Appendix A (provided separately to the Subcommittee) and are more fully described in Federal Register notices of November 27, 1979 (44 F.R. 67942-43) and December 31, 1979 (44 F.R. 77454-55).

The remaining issues before the District Court were briefed and heard by that court in two rounds. The District Court issued lengthy opinions on those issues dated February 26, 1980, ("Round 1") and May 16, 1980 ("Round 2"). The table provided separately to the Subcommittee and marked as Appendix B describes the issues decided by the District Court in Rounds 1 and 2. See columns headed "Issue/Regulation" and "District Court's Ruling."

Subsequent events are also noted on Appendix B. The Secretary has suspended several regulations which were remanded by the District Court in Round 1 and 2 opinions. The suspensions are noted in the column headed "Comments" and are more fully described in an August 4, 1980 Federal Register notice, 45 F.R. 51547-50. Issues appealed by the parties and now pending before the Court of Appeals are noted in the column headed "Appeal by." The Secretary is currently negotiating

with all parties on the issues before the Court of Appeals in an effort to end this litigation.

One issue is currently pending before the District Court as a result of litigation involving the Secretary's interim program regulations. On May 2, 1980, the Court of Appeals held that variances and exemptions from effluent regulations promulgated by the Environmental Protection Agency (EPA) under the Federal Water Pollution Control Act must be applied to the same extent that EPA applies those variances and exemptions to surface coal mining operations. The Court of Appeals thus, remanded this issue to the District Court. *In Re: Surface Mining Regulation Litigation*, the District Court, in turn, requested government and industry attorneys to present them with a joint proposed order that would require the Office of Surface Mining to comply with the order of the Court of Appeals. The parties have negotiated such an order and it will be forwarded to the District Court in the near future. Appendix C supplied separately to the Subcommittee lists those permanent program regulations which have been suspended for reasons other than the permanent program regulation litigation. Taken together then, Appendix A, B and C provide information on all issues originally presented to the District Court in the permanent program regulation litigation and all permanent program regulations suspended since their issuance on March 1, 1979.

STATUS OF TRIALS

Mr. YATES. Can you estimate when the appeals will be tried?

Mr. TINDAL. No, sir, especially on the ones where we are still negotiating. We hope we can avoid further appeals.

Mr. YATES. Are there any other cases pending regarding strip-mining law that we should know about?

Mr. TINDAL. There are a number of cases pending. For example, the Supreme Court has a case before it which was argued in February, I believe, with regard to the constitutionality of certain aspects of the Surface Mining Act. That decision is expected from the Supreme Court prior to the end of the term in June. I can provide you information on that.

Mr. YATES. The Washington Post for February 24 indicates Virginia joins in challenging strip-mining regulation, pitting the Federal Government's effort to protect the environment against states' rights to control land use. The Federal law requires that mined land be returned to its original contour. Coal interests in Virginia say it is virtually impossible because of the state's steep slope coal-bearing mountains.

Has that case been tried yet?

Mr. TINDAL. That is one of the aspects in the Supreme Court case, "approximate original contour."

Mr. YATES. The Supreme Court decided the Department of the Interior could do it?

Mr. TINDAL. The Supreme Court has not issued a decision yet.

Mr. YATES. It says the local district judge decided that certain portions of the Act are unconstitutional. Is that right?

Mr. TINDAL. Yes, sir.

Mr. YATES. The Department of the Interior took an appeal from that. The article goes on to say:

> A dramatic shift in the Federal regulatory control of the strip-mining industry is expected to take place in the Office of Surface Mining with the appointment of James Watt as Secretary of the Interior. While the Interior Department will argue Monday that the Federal act is constitutional, Secretary Watt is listed among those favoring the Virginia position.?

How can you be on both sides?

Mr. TINDAL. Secretary Watt intends to carry out an intensive review of the surface mining regulations implementing the provi-

sions of the Act, with the intention of eliminating the unnecessary burdensome, and counterproductive regulations. The "approximate original contour" regulation is one considered to be burdensome. Secretary Watt has indicated that he feels that the Surface Mining Act does not need to be changed at this time, and that the Act is constitutional. However, some regulations need amendment. That is the program he is carrying out.

REGULATORY PROGRAM BUDGET

Mr. YATES. There is an article in The Washington Post for Friday, April 3rd, which discusses what you have just said about an out-of-court settlement. It says funding cuts make OSM absolutely incapable of meeting statutory and regulatory obligations, says a lawyer for the environmental group. Is that true?

Mr. BAILEY. No, sir.

Mr. YATES. Do you have enough money to take care of what you have?

Mr. BAILEY. We hope to have primacy by October 1st.

Mr. YATES. They are probably going to achieve primacy. If they don't achieve primacy, there will not be enough money. Therefore, there is quite a spur to give them primacy, isn't there?

Mr. BAILEY. I wouldn't say there is a spur to achieve primacy. We would like for them to have it by then, but if they don't achieve it by then, we will have to come back asking for more money to fund the necessary inspections.

STATE INJUNCTIONS

Mr. YATES. Are there suits pending which prevent the states from submitting their applications for primacy?

Mr. TINDAL. Yes, there are.

Mr. YATES. In which states?

Mr. CLOSE. In the states of Pennsylvania, Virginia, Alabama, Kentucky, Tennessee, Illinois, Indiana, and Ohio.

Mr. YATES. Why are they prevented from doing so? What is the basis for the court action?

Mr. TINDAL. Under the statute, an injunction suit may be filed, to prevent the states from submitting or continuing to work on their program.

Mr. YATES. These programs are to achieve primacy?

Mr. TINDAL. Yes, to achieve primacy.

Mr. YATES. That is because states may only achieve primacy if they conform with the standards established by the act? Is that the reason?

Mr. TINDAL. That is right.

Mr. YATES. Are there injunctions entered now that prevent the states from applying?

Mr. TINDAL. Yes, sir. Some are for a year's time.

Mr. CLOSE. If I may expand on that, each of the states which is currently enjoined, submitted its program by the deadline of March 3, 1980.

All of the states now enjoined did submit programs by the deadline. The injunctions prohibit the states from resubmitting their programs. Five of the states which are enjoined had received par-

tial approvals, meaning that they had to come back in with the resubmission of only those portions of their program that were disapproved the first time around.

The injunctions which have been entered run for varying periods of time. Some are for less than one year. Those which do run for one year could conceivably be terminated earlier. We are watching the situation in each state to determine when the injunction will either expire, or might be terminated on motion of either the states or other parties to the suit.

Mr. YATES. These are temporary injunctions. Will there be hearings on whether they should be made permanent?

Mr. CLOSE. In some cases.

Mr. YATES. Do some of the temporary injunctions remain effective after October 1?

Mr. CLOSE. Yes, sir.

Mr. YATES. Then how can those states achieve primacy?

Mr. CLOSE. Let me use an example. In the State of Kentucky the injunction could conceivably run until October 31. However, the court has left an opening for the state to come back to the court and apply for an earlier termination of that injunction. When the state is ready to come in with its resubmission, it could go to the court and ask for an earlier termination, and then submit the program and get the court to act favorably.

STANDING TO SUE

Mr. YATES. Has the court found the environmental group standing before the court? Are they permitted to participate fully?

Mr. TINDAL. I would like to ask my colleague, Charles Hardy, Assistant Solicitor for State Programs, to speak to that.

Mr. HARDY. I am familiar with all the lawsuits. They are being conducted in state courts. The Secretary of the Interior is not a party to any of these lawsuits. They tend to be between industry groups or individual coal operators and state officials, in which the operators enjoin the official from participating in the resubmission process.

Mr. YATES. The article I read shows that the high court will review a decision by U.S. District Judge Glen M. Williams. That is not a state suit.

Mr. HARDY. That is not a suit on resubmission of the state's program. That is the suit on whether the Surface Mining Act is constitutional.

Mr. YATES. So they are not in the Federal District Court; they are in state courts?

Mr. HARDY. Yes.

Mr. YATES. The suits are between industry and environmental groups?

Mr. HARDY. Between industry and state officials, primarily.

Mr. YATES. The articles made reference to attorneys for environmental groups. Are they parties to the suit?

Mr. HARDY. I am familiar with suits in one or two states where environmental groups tried to intervene. I believe in Pennsylvania an attorney representing an environmental group attempted to intervene and was unsuccessful in that attempt. I know of no successful attempts to intervene by environmental groups.

Mr. YATES. I note here a memorandum which indicates on November 12, 1980, the Circuit Court of Walker County, Alabama, issued an injunction at the request of the coal industry enjoining the state from submitting or resubmitting a state program to the Department of the Interior. The purpose of the injunction is to allow the state additional time to enact laws and regulations necessary to complete its program. The injunction is for a maximum of one year until the injunction is lifted.

This is an injunction against whom?

Mr. HARDY. Against the state official.

Mr. YATES. From submitting an application?

Mr. HARDY. That is right.

Mr. YATES. It is kind of a complicated procedure, isn't it?

Mr. HARDY. It is, and it was anticipated by Congress when they passed the Surface Mining Act. There is a provision in the Act which allows the states this year without suffering the consequence of a Federal regulatory program being imposed upon them.

Mr. YATES. When does that year expire?

Mr. HARDY. It depends on when the injunctions were first entered. Most will expire next fall. We fully anticipate most of these states will be able to resubmit their programs sometime in the summer. This is either because the preliminary injunctions expire in less time than a year, or because, as a result of our working with the states—and we are doing that very actively—the programs will be in sufficiently good shape, that they will be able to convince the industry or the court that they should no longer be enjoined.

OTHER LITIGATION

Mr. YATES. How many suits are pending? Are there other suits which seek the same redress, other than Virginia?

Mr. HARDY. There are several other challenges to the regulations in the District Court for the District of Columbia, challenging bonding regulations and other regulations. There are at least two lawsuits, perhaps three now, challenging the Secretary's decision with respect to particular State programs, and they are pending in the U.S. District Courts for the Districts, which include the capitals of the states whose programs are at issue.

Mr. YATES. Which Secretary's decision are you referring to?

Mr. HARDY. It would be Secretary Andrus. They are the decisions to approve State regulatory programs in two cases, and in one case a decision to disapprove the State program was challenged.

Mr. YATES. This was brought by industry?

Mr. HARDY. It was brought by environmental groups and by states. I think they are the two leading contenders.

EFFECTS OF LITIGATION

Mr. YATES. That leaves the Surface Mining agency up in the air, does it not?

Mr. HARDY. It has caused some delay in implementation of the program. But, in fact, there are 16 states that have approved programs and are operating in the primacy mode. Two of those

have portions of their permanent program still in question, but they are continuing to operate in the primacy mode.

The other eight States have required more time than the statute contemplated to prepare their programs. Many State legislatures had to adopt new laws. In other states where the level of the program had to be upgraded from the level of regulation prior to passage of the Surface Mining Act.

Mr. YATES. What else should we know about the lawsuits that are pending?

Mr. HARDY. Mr. Tindal can submit to you a list.

Mr. YATES. Give us a summary of the cases pending and their status.

[The information follows:]

SUMMARY OF FEDERAL COURT CASES

SUPREME COURT

1. *Virginia Surface Mining and Reclamation Association, Inc.* v. *Watt*

This appeal challenges the decision of the United States District Court for the Western District of Virginia holding several aspects of the Surface Mining Act unconstitutional and enjoining enforcement of those provisions. In particular, the district court held: (1) that Sections 515 (b) and (e) of the Act, which require that coal operators to restore steep slopes to their approximate original contour, constitute an unwarranted federal intrusion upon integral government functions of the States in violation of the Tenth Amendment of the United States Constitution; (2) that these same "steep slope" provisions and Section 522(e) of the Act, which forbids surface mining near lands being used as cemeteries, school grounds, public roadways, residences and the like, effect a taking of property in violation of the Fifth Amendment; (3) that the summary issuance of cessation orders in emergency circumstances pursuant to Section 521(a)(2) of the Act violates the right of coal operators to procedural due process; and (4) that Section 518(c) of the Act, which requires coal operators to deposit in escrow the proposed amount of civil penalty as a condition for obtaining review of the assessment, violates the operator's procedural due process rights.

The Government has taken the position on appeal that the Surface Mining Act is uniformly constitutional. The district court plaintiffs filed a cross-appeal challenging those portions of the district court's decision which upheld other portions of the Act, including the district court's decision that the Act was within Congress authority under the Commerce Clause.

The portion of the district court's ruling which held parts of the Act unconstitutional was stayed by Chief Justice Burger on February 25, 1980, and by the full Court on March 17, 1980, pending final resolution of the appeal. All briefs have been filed, and oral argument on this case was heard on February 23, 1981.

2. *Watt* v. *State of Indiana*

This appeal concerns the decision of the United States District Court for the Southern District of Indiana which held portions of the Surface Mining Act unconstitutional. Although the legal rationale underlying the decision is largely the same as that relied upon by the Virginia court, this court invalidated certain other portions of the Act including: (1) the protection of the productive capacity of prime farmlands; (2) the requirement that top-soil from mine lands be separately removed, stored and replaced; (3) the provision for premining review and post-mining enforcement of land use decisions concerning mined lands; (4) the approximate original contour requirements, as it applies to lands other than "steep slopes"; (5) the designation of certain lands as unsuitable for mining; and (6) the escrow deposit provisions relating to civil penalties. Unlike the decision in the Virginia case, the decision here holds that certain provisions of the Act are outside Congress authority under the Commerce Clause. The district court's ruling was stayed by Justice Stevens on July 2, 1980, pending final resolution of this appeal.

As in the Virginia case, the Government has taken the position that all of the invalidated provisions of the Surface Mining Act are constitutional. Briefing and oral argument proceeded on the same schedule as the Virginia case.

3. *Watt* v. *Star Coal Company*

This appeal challenges the portion of the judgement of the United States District Court of the Southern District of Iowa which holds that the escrow deposit requirement of Section 518(c) is unconstitutional as a denial of procedural due process. The district court resolved the remainder of the constitutional issues in this case favorably to the Government. These aspects of the judgment were not appealed by Star. A non-constitutional issue concerning the propriety of an OSM enforcement action, was also appealed by OSM, but has been subsequently settled favorably to the Government. The ongoing appeal has not proceeded beyond the docketing stage, and likely will be resolved by the decision of the Supreme Court in the Virginia and Indiana cases.

COURTS OF APPEALS

1. *Concerned Citizens of Apppalachia, Inc.* v. *Andrus* (Sixth Circuit)

This appeal challenges an order of the United States District Court for the Eastern District of Tennessee which dismissed a coal industry association's constitutional challenge to several provisions of the Surface Mining Act. The association filed its action to secure relief similar to that granted in the Virginia case. The order dismissing the action is accompanied by an opinion which upholds the constitutionality of the Act in general, and the provisions declared invalid in the Virginia and Indiana cases in particular. The association appealed, but proceedings have been stayed by the Sixth Circuit pending final resolution of the constitutional cases currently before the Supreme Court.

2. *Reading Anthracite Coal Co.* v. *Watt* (Third Circuit)

This appeal challenges a decision of the United States District Court for the Eastern District of Pennsylvania which holds: (1) that Section 526(a)(1) of the Act vests the District Court for the District of Columbia Circuit with exclusive jurisdiction to review national regulations promulgated under the Act; and (2) that the Act and regulations do not contravene the Tenth Amendment. The controversy in this case centered on the Secretary's determination that the Act's adoption of State environment performance standards for anthracite mines does not deprive the Secretary of enforcement authority of anthracite mines. No briefs have been filed in the appeal. The coal company's brief is substantially overdue, and a motion to dismiss has been discussed with the Department of Justice.

3. *Holmes Limestone Co.* v. *Watt* (Sixth Circuit)

This appeal seeks reversal of an order of the United States District Court for the Northern District of Ohio which dismissed a coal company's challenge to the validity of the regulation at 30 CFR 761.5 defining "cemetery", and the company's attack upon the constitutionality of Section 522(e) of the Act based on the Commerce Clause, Tenth Amendment, Fifth Amendment and equal protection grounds. The district court held: (1) that jurisdiction to challenge the regulation exists only in the United States Distict Court for the District of Columbia Circuit; (2) that the coal company lacked standing to assert its Tenth Amendment claim; and (3) that the prohibition of mining within 100 feet of a cemetery provided at Section 522(e)(5) of the Act, does not take private property or deny a coal operator equal protection of the law. The district court had dissolved a preliminary injunction that prohibited OSM's enforcement of the challenged restriction, but on October 14, 1980, the Sixth Circuit granted a stay of the district court's final order, thereby reinstating the preliminary injunction. All briefs have been filed, and oral argument was heard on April 14, 1981.

4. *Watt* v. *Shawnee coal Company* (Sixth Circuit)

This appeal challenges an order of the United States District Court for the Southern District of Ohio preliminarily enjoining an OSM enforcement action against a coal processing facility. The sole issue on appeal is whether the courts may assume jurisdiction over controversies arising from OSM enforcement actions before a coal operator has fully exhausted administrative remedies. All briefs have been filed, but no date for oral argument has been set.

5. *The Public Lands Institute, Inc.* v. *Andrus* (District of Columbia Circuit)

This appeal challenges a district court order which affirms the Secretary's decision to postpone the effective date of the permanent program on federal lands until approval of a State program or implementation of a federal program for a State. The regulations postponing operator compliance on federal lands appeared in the Federal Register on December 31, 1979 (44 F.R. 77440); they were promulgated after rulemaking requested by six western States. The District Court held that (1) the Secretary's decision is consistent with Section 523(a) of the Surface Mining Act

under the pertinent rules of statutory construction, and (2) the decision is neither arbitrary nor capricious. All briefs have been filed, but no date for oral argument has been set.

DISTRICT COURTS

Litigation pending before the various United States District Courts may be briefly described by category of subject matter. I will gladly, upon request, supply any additional detail you need.

Constitutional litigation

The bulk of OSM's constitutional cases involve some or all of the issues before the Supreme Court in the Virginia and Indiana cases. Included are twelve actions challenging the prepayment requirements of Section 518(c). All constitutional cases before the district courts are either formally stayed, or informally remain in the initial states of litigation while the parties await decision in the Supreme Court cases.

Judicial review of IBSMA decisions

Ten current actions seek judicial review of decisions of the Interior Board of Surface Mining and Reclamation Appeals. The Board speaks finally for the Secretary in administrative appeals concerning OSM enforcement actions. Judicial review is confined to the administrative record and functions on the "substantial evidence" standard. Accordingly, the cases are routinely handled by filing motions for summary judgment affirming the Board's decision.

Cases involving failure to exhaust administrative remedies

Twelve current civil actions involve instances in which coal operators have attempted to bypass the Surface Mining Act's administrative procedures. Each of these cases has been met by OSM with the defense of failure to exhaust administrative remedies.

Cases challenging OSM construction of SMCRA

Four cases currently before U.S. District Courts challenge OSM constructions of the Surface Mining Act. Two cases challenge OSM's construction of Section 521(a)(1) as inapplicable during the interim program. Because both of these cases arise in States which have obtained primacy during the course of the litigation, the challenges now appear moot. The remaining two cases involve challenges to the Act's definition of "Federal lands" as applied to instances in which the United States owns the land surface and private parties own the mineral estate. The applicability of the "Federal lands" definition is central to the question of whether Section 522(e)(2) of the Act governs such circumstances.

State program cases

Six cases present challenges to Secretarial decisions regarding proposed State regulatory programs. Four of these cases challenge initial decisions which disapprove parts of the State programs. Two State program cases challenge the propriety of former Secretary Andrus' approval of the West Virginia State regulatory program.

Designation cases

Two currently pending civil actions challenge former Secretary Andrus' decision concerning a petition to designate certain lands in Southern Utah as unsuitable for mining, pursuant to Section 522 of the Act. The Secretary is currently considering the various options open to him before responding to this litigation.

Citizens complaint cases

The last category of cases includes five actions filed by or on behalf of citizens pursuant to Section 520 of the Act. Two suits involve citizens' complaints concerning OSM's refusal to take requested enforcement actions. Another of these cases challenges an OSM determination that a coal operator has valid existing rights to mine in an area where mining is otherwise prohibited by Section 522 of the Act. One case involves a consent agreement requiring OSM to observe certain enforcement procedures during the interim program. The last of these cases is an action instituted by the Department of Justice, on its own authority and at the request of OSM and EPA, to enjoin a West Virginia State court from entertaining a libel case brought by a coal operator against a citizen who filed complaints with OSM under Section 520 of the Act, and with EPA under a similar section of the Clean Water Act.

STATUS OF SECTION 503(d) SUITS AGAINST STATES

Alabama

On November 12, 1980, the State of Alabama was enjoined by the Circuit Court of Walker County "from submitting or resubmitting any program pursuant to the requirements of the Federal . . . Act." The State was affirmatively ordered to continue the enforcement of the interim regulatory scheme, and to report regularly to the court upon progress made in the preparation of a State program for the regulation of surface coal mining. The latter requirement suggest that the State remains free to develop its proposed regulatory program for eventual resubmission, but the injunction does not expressly provide this. The injunction was entered upon findings that (1) Alabama's retention of primary authority to regulate surface coal mining is in the State's best interest; (2) Alabama cannot possibly meet the Act's deadline for resubmission; (3) Alabama is prevented from determining what to include in its program because of confusion as to the applicable requirements; and (4) the coal industry will be injured if forced to operate under a federal program. The State appears to consent to the injunction and will not appeal.

Illinois

On December 11, 1980, the State of Illinois was enjoined by the Circuit Court of Sangamon County "from resubmitting to the Secretary . . . a State permanent program, under Section 503 of the Federal Surface Mining Control and Reclamation Act for six months. . . ." The State is affirmatively required to continue development of its program, and is not prohibited from conducting rulemaking hearings or negotiating with OSM. The court order refers to the pending constitutional and regulatory litigation in the Federal courts as grounds for the injunction. State law grounds recited in the order relate to possible conflicts between the program Illinois might submit and the Illinois statute, and the inability of the State to conduct necessary hearings before the resubmission date.

Indiana

On July 26, 1980, the State of Indiana was enjoined by the Circuit Court of Marion County from "taking any further action to submit, resubmit or enforce a State Program" for the State for a period of one year. The plaintiffs' complaint asks for an injunction against the State's resubmission on the following grounds: (1) the Act is unconstitutional, as found by the District Court in *Indiana* v. *Andrus*; (2) the Secretary inordinately delayed promulgation of permanent regulations, thus rendering the Indiana legislature unable to enact necessary legislation; (3) the legal validity of the permanent regulations is uncertain; (4) the Act is coercive; and (5) the coal industry will be injured if forced to operate under the permanent program. The complaint invokes State law as a basis for the injunction.

Kentucky

On October 31, 1980, the Commonwealth of Kentucky was enjoined by the Martin County Circuit Court from submitting or resubmitting to OSM the Commonwealth's proposed regulatory program, and from enforcing that program. The injunction order requires the Commonwealth to continue the preparation of its State regulatory program for eventual resubmission. The plaintiffs' complaint requests relief upon the following grounds: (1) Secretarial approval of Kentucky's resubmission might be conditional; (2) substantial doubts exist concerning the validity of the permanent regulatory scheme demonstrated by the pending challenges to the constitutionality of the Act and propriety of the Federal regulations; (3) the Kentucky General Assembly voiced doubts concerning the constitutionality of the Federal Act; and (4) imposition of a permanent program will harm the coal industry. No appeal or other action appears likely unless Kentucky's program will clearly be approved.

Ohio

On November 24 and 25, 1980, the State of Ohio was enjoined by the Common Pleas Courts of Franklin County and Belmont County, respectively, from taking any further action to resubmit or enforce its proposed permanent regulatory program. The Franklin County order runs until further order of the court. The Belmont County runs for one year. The injunction was entered upon the following findings: (1) the coal industry will suffer harm if forced to operate under any permanent program; (2) Ohio cannot possibly make timely resubmission of an approvable program; and (3) implementation of a Federal program would harm the coal industry.

Oklahoma

On November 26, 1980, the State Court denied injunctive relief to coal industry plaintiffs. The court accepted the State's arguments that the industry's pleading

failed to show a threatened illegal act under Oklahoma law. However, another hearing before a second judge was held on December 5, 1980, and a temporary restraining order was granted. On December 8, 1980, this second judge dissolved the temporary restraining order at the request to the Attorney General, and the State filed its revised program. On December 19, 1980, an injunction was entered barring enforcement of the State program.

Pennsylvania

On November 26, 1980, the Commonwealth court of Pennsylvania enjoined the submission to OSM of a regulatory program pursuant to Section 503 of the Act, but provided that Pennsylvania could continue to develop its program for submission in the future. The plaintiffs' complaint and briefs request injunctive relief to allow time for complete adjudication of judicial challenges to the Act and the Federal regulations prior to resubmission of Pennsylvania's program. Pennsylvania appealed the decision of the Commonwealth Court to the State's Supreme Court, and sought a stay of the lower court's ruling the stay. On December 8, 1980, Judge Nix of the Pennsylvania Supreme Court denied the Commonwealth's request for a stay.

Tennessee

The coal industry's motion for temporary injunctive relief was denied. The industry continued to pursue preliminary relief, and a hearing was held on December 5, 1980. An injunction for 90 days was issued to allow the State the time necessary under State law to complete the State's program for resubmission. The State did not take responsive action. The claims set out in the plaintiff's complaint relate to Tennessee's inability to change its program without additional legislation.

Virginia

On December 3, 1980, the Circuit Court of Dickerson County enjoined the Commonwealth from resubmitting to OSM its proposed regulatory program, and from enforcing that program. The Commonwealth was affirmatively ordered to continue "to negotiate with OSM" concerning its program during the one-year effective period of the injunction.

West Virginia

Following former Secretary Andrus' approval of the West Virginia State regulatory program, coal industry plaintiffs successfully sought an injunction prohibiting the State from enforcing the program for one year.

TIME TO APPROVE STATE PROGRAMS

Mr. YATES. Unless injunctions are lifted, how long will it take to approve state programs?

Mr. CLOSE. We have 60 days under the act to review state program resubmissions. In that period we do make these resubmissions available to the public for review and comment and hold a hearing on them.

Mr. YATES. Where do you do that?

Mr. CLOSE. In the state which resubmitted the program, usually in the state capital.

STATUS OF PRIMARY PROGRAMS

Mr. YATES. Thank you, Mr. Tindal.

What is the status of the program of regulations that was approved under the prior administration? Are those still in force and effect?

Mr. BAILEY. Yes, sir.

Mr. YATES. Are those the regulations, that are on appeal out of Virginia, in some measure?

Mr. BAILEY. Virginia is challenging the Act, itself. Virginia is also a party to some suits on the regulations.

PROPOSED RESCISSION

Mr. YATES. You propose to rescind $1,954,000, and in support of that, you say this on your rescission sheet:

Inspection and enforcement activities, evaluation of state programs and technical assistance will be curtailed slightly through the $1.9 million reduction. These curtailments will reduce the regulatory burden imposed on states and mine operators.

What does that mean, "curtailments will reduce"?

Ms. MARPLE. In the case of the inspection staff it means we will have fewer inspectors, and we will make fewer inspections.

Mr. YATES. What you are saying is for every reduction in the inspection budget, the states and mine operators jump with joy?

Ms. MARPLE. There will be fewer inspections.

Mr. YATES. Is that good or bad?

Ms. MARPLE. It depends on your viewpoint and how you look at it. I am sure that states will be glad to know that the Federal inspections are going to be minimized, and I imagine operators may be, too.

STRATEGY ON STATE INSPECTIONS

Mr. YATES. Should they be minimized, in your opinion?

Ms. MARPLE. I think the statistical sampling strategy is a sound strategy for carrying out oversight inspection. We have never done it before, so it may turn out that it will have some problems, and it may turn out we will have to have more inspectors than we planned for.

Mr. YATES. How would you feel if you had a statistical sampling of the inspection of meat by the Department of Agriculture?

Ms. MARPLE. The Department of Agriculture program has, as I understand it, a different philosophy. In other words, under the Act we are not in a role once a state achieves primacy where we are supposed to find every violation. Rather, what we are trying to do is to determine which states are adequately carrying out programs. In order to do that, it isn't necessary to inspect every site. You can get an accurate picture by inspecting a representative sample.

Mr. YATES. How does that follow? That would assume that all of your mine operators operate the same, would it not?

Ms. MARPLE. No, it assumes that if you have, say, a thousand mines and you look at 100 of them, those 100 will be typical of the thousand.

Mr. YATES. Do you assume there is a uniformity about their operation?

Ms. MARPLE. In larger number, yes. If you have a small pool of inspectable units to monitor, it doesn't hold, and then you have to inspect a higher number. There are some states where we will have to do 100 percent inspections.

Mr. YATES. Last year's budget was justified on the basis of a 20 percent sampling. This year's is 17 percent, isn't it?

Ms. MARPLE. Yes. We have more recent reports from our contractor.

Mr. YATES. Saying what?

Ms. MARPLE. Saying, when you average the figures, the number of inspections needed comes out to 17.3 percent of the total popula-

tion. Last year, we only had a preliminary estimate of what the sample size would be. Now we actually have a report from our contractor with specific figures.

Mr. YATES. Who is the contractor, and what was he required to tell you?

Ms. MARPLE. The contractor's name is Dr. Theodore Horner, and we hired him to advise us on developng a statistical sampling method for the oversight program.

Mr. YATES. He recommended a 17.3 percent sampling?

Ms. MARPLE. Yes. It is a mathematical formula. The figure depends on variables, such as the number of mines in a State, the confidence level that you choose.

STATISTICAL CONFIDENCE LEVEL

Mr. YATES. What is your confidence level at the start?

Ms. MARPLE. The confidence level we chose was a 95 percent confidence level.

In other words, with a 95 percent confidence level, there are 19 chances out of 20 that the sample selected will accurately represent the charactertics of the total population. In other words, if we inspect a state and find 20 percent errors, we can be 95 percent sure that the actual rate of errors for the entire population is somewhere between 15 or 25 percent.

Mr. YATES. Would you repeat that, please?

Ms. MARPLE. If we inspect a sample and we find that in 20 percent of the cases the state is not doing what it should be, having chosen the 95 percent confidence level and a half-confidence interval length—

Mr. YATES. What is the interval?

Ms. MARPLE. You are getting beyond my technical—

Mr. YATES. You are the one who is using the language. I don't understand what you are saying. What do you mean by a confidence interval?

Ms. MARPLE. It means the degree of confidence you have that the representative sample truly represents the entire body of things that you are looking at.

Mr. YATES. Well, how do you arrive at a 95 percent confidence sample? You have to be pretty optimistic, don't you?

Ms. MARPLE. He uses the statistical sample, the mathematical formula that is accepted among people who do statistical work.

Mr. YATES. I would have thought that based on what your justification says about the mine operators and the states being very happy about the cutback in inspections, you wouldn't be 95 percent confident. That would be my impression. I would think you would want something closer to a 50 percent scale, and if you do that, your 17 percent figure or your 20 percent figure as being a representative sample goes by the boards, doesn't it, if you don't have the 95 percent confidence figure?

Ms. MARPLE. If you inspect fewer than that, you will get a lower confidence factor; yes.

Mr. YATES. You get that reaction from those who are being inspected. I would think the confidence factor would be minimized.

If your inspection budget is based on this fellow's report, and his report is based on a 95 percent confidence sample, I think maybe

we ought to look at the report, or maybe we ought to talk to this fellow, whoever he is.

Was he hired by the previous administration?

Ms. MARPLE. Yes.

Mr. YATES. You can breathe easier, then.

I don't know why anybody would hire him. What is the purpose of the study? What did you pay him?

Ms. MARPLE. Forty-five thousand dollars is the total amount of the contract, and it involves various aspects of developing this methodology.

Mr. YATES. Was he out in the field at all?

Ms. MARPLE. Yes, he has gone and met with our inspectors, and we spent a lot of time with this man.

Mr. YATES. How do you feel about the report?

Ms. MARPLE. I feel that the man understands our process, and that the report is sound. As I said, this will be the first year that we have ever used it. It may turn out in practice to have some difficulties, but we don't anticipate it now. It is very straightforward, really. I don't have any problem with the idea of proceeding that way.

I do recognize we have never done it before, and it may turn out that it doesn't work well.

POSSIBLE PROBLEMS WITH SAMPLING

Mr. YATES. I would have thought, rather than basing a budget on a study of that kind, you would establish a program of your own and then let experience tell you, experience based on actual inspection reports tell you, what the budget should be, rather than proposing a 20 percent inspection.

Ms. MARPLE. One of the advantages of going with this methodology is that you can calculate exactly what confidence level you have with the sample in a given state.

Mr. YATES. How do you do that?

Ms. MARPLE. If we inspected fewer than 100 percent of the sites in a state, then we are automatically into an area where we have less than 100 percent confidence because we haven't looked at everything.

If we did this without having a statistical sampling methodology available to us, we wouldn't know in a given state what our confidence level was unless we inspected every facility.

This methodology allows us to know how many sites we need to inspect in order to get a high level of confidence. There is a great variety in the percentage of sites that you must inspect, depending on the number of facilities in the State. If you have a state with a lot of facilities, the percentage to be inspected comes down. But if you have a smaller state, then you may have to inspect 100 percent.

If you flew blind and didn't use this methodology, it would be hit-or-miss how many sites you would inspect in a given state, unless, of course, you inspected 100 percent, everywhere.

Mr. YATES. But you could vary the statistics to achieve any goal you wanted, couldn't you?

Ms. MARPLE. No, it is a mathematical formula, and you can just plug it in.

If you do this many inspections, you are going to have this level of confidence.

Mr. YATES. If you do 20 percent of inspections, do you have 90 percent confidence in the accuracy of the inspection?

Ms. MARPLE. You would have 95 percent confidence that what you saw in those states, represented, was typical——

Mr. YATES. Of the other 80 percent?

Ms. MARPLE. That is right, but in some states we will be doing 100 percent. In some states we would have to do 75 percent. In some states we will do much less than 20 percent. It depends on how big a pool you are looking at in the beginning. If you have a big pool of things to look at, you can use the smaller sample size and, according to statistical theory, have a good picture of what the whole looks like.

Mr. BAILEY. Mr. Chairman, may I say something?

Mr. YATES. Surely.

OVERSIGHT OF STATE PROGRAMS

Mr. BAILEY. The states will be inspecting these operations 12 times a year. This sampling procedure is an oversight procedure. In addition to on-site inspections, OSM will be checking the records of state inspections and what violations they have cited and get an indication of whether they are having problems.

Mr. YATES. You have a 95 percent confidence interval in what the states do?

Mr. BAILEY. I don't want to get into those percentages. I was just trying to explain what this was. I don't understand the details of the statistical formula. I am not familiar with it.

Mr. YATES. Did you want to say something, Ms. Marple?

Ms. MARPLE. I thought from your last question, you might have misunderstood what I said about the confidence level.

Mr. YATES. I merely asked him how confident he is that the states will be as conscientious in their inspections as would be Federal inspectors. That is really what I am asking. Historically they haven't been as conscientious as have been Federal inspectors. This is the problem.

As of now, you and I are going along with statistics, where you have a 95 percent confidence factor.

Ms. MARPLE. I believe we will get a 95 percent accurate picture with this method.

Mr. HEAD. The 95 percent confidence level is just a statistical measure being used to determine how many mines we should inspect to evaluate state programs. That does not include the overall inspection or oversight program.

Mr. YATES. I thought that was to be the basis for your overall oversight program.

Mr. HEAD. We have citizens' complaints, follow-up inspections and procedures to review topics such as permitting and bond releases.

Mr. YATES. She says yes, and you say no.

Ms. MARPLE. It is the basis for looking at the inspection activities, but there are other aspects——

Mr. YATES. I had the impression from what you said that, based on the report, a 20 percent oversight inspection, would be accept-

able as being representative of the quality of inspection in all the mines?

Ms. MARPLE. Then there is something else I have to explain. The figures show we will do more inspections than just 20 percent.

Mr. YATES. In those where you have a 20 percent factor?

Ms. MARPLE. Yes, because what we have done, we have given ourselves the ability to do further inspections, to investigate what we find in the 20 percent.

Mr. YATES. Now, how much more than 20 percent will you do?

Ms. MARPLE. As I recall, the sample works out to 2,900 inspections, and we have left ourselves the ability to do a thousand additional inspections not counting citizens' complaints.

Mr. YATES. A thousand oversight inspections?

Ms. MARPLE. Additional ones; yes.

Mr. YATES. Over how many mines?

Ms. MARPLE. There are approximately 17,000 inspectable units.

Mr. YATES. That is seventeen thousand?

Ms. MARPLE. 17.3 percent of the units is the basic sample. We have given ourselves an additional 1,000 inspections beyond that, to investigate any apparent discrepancies.

Mr. YATES. Over what period of time?

Ms. MARPLE. This is for fiscal year 1982.

EFFECT OF RECESSION

Mr. YATES. Will you have enough money in your budget for 1981 if the committee approves the rescission?

Ms. MARPLE. For fiscal year 1982?

Mr. YATES. No, I am talking about 1981.

Ms. MARPLE. Yes.

Mr. YATES. That is because you have a bigger burden now than you will have next year because of the primacy. You will have a bigger oversight burden next year, but you have a bigger direct investigating burden now. If that is true, why are you so confident that you are able to accept the rescission?

Mr. CULP. Because of the hiring freeze we have been under, both under the previous administration and the new administration. We have lost staff faster than we anticipated this year.

Mr. YATES. So you are not conducting inspections?

Mr. CULP. We are not doing as many inspections as we would otherwise have been.

Mr. YATES. If you had more people?

Mr. CULP. Had we more people.

Mr. YATES. Does one draw the conclusion that you are not doing as many inspections as you should be doing?

Mr. CULP. Under the circumstances we are doing as many as we can.

Mr. YATES. That doesn't answer my question, does it?

The impression I have from what you have told me is that you are not doing as many inspections as you should be doing. Is my impression right? Suppose you had no hiring freeze, would you be doing more inspections?

Mr. CULP. We would have more personnel onboard.

Mr. YATES. And be doing more inspections.

How many more personnel and how many more inspections would you be doing?

Mr. CULP. There was a call for reduction in staff in 1981 on a sliding basis. It was a reduction of 66 inspectors that was going to occur during the year. As a result of the hiring freeze we had it mostly occur at the beginning of the year. In rough figures, it is 30 people—something less than 3,000 inspections that we would have otherwise done this year that will not get done.

Mr. YATES. The actual reason for the rescission is not because there is no need to do the inspections, but because you cannot hire the people to conduct the inspections.

Mr. CULP. Because we have saved money by not replacing people who left early in the year.

EFFECT OF FISCAL YEAR 1981 REDUCTION

Mr. YATES. What happens to the program? You can't carry out your statutory mandate. You haven't enough people to do it.

Why don't you do it by outside contractors then? Don't you have the money to do it by outside contractors? This is what the other agencies do when they have a hiring freeze and they have to do their work. They hire somebody to do it for them on the outside, and they avoid the freeze.

Mr. CULP. There are two problems in that area with respect to the inspection program. I doubt off-hand it would be legal.

Mr. YATES. I think there is some OMB—where is Mr. Bettenberg? Is he not around any more?

Is there an OMB regulation of some kind saying you cannot use outside help, outside contractors, in order to avoid the hiring freeze?

Mr. GORRELL. We are not allowed to do indirectly what we are not allowed to do directly.

Mr. YATES. That is right, even though they have been doing it for years in order to get the work done.

Mr. GORRELL. Yes.

Mr. YATES. The question is, how important are the inspections? If they were not important, the Congress would not have put the requirement into the legislation, would it? And we are not conducting the inspections, and if we rescind this money, as you request, the only basis for the rescission is the administration doesn't want to do any inspections, because it doesn't want to hire the people to do it. Is that right?

Mr. CULP. We are a little bit between a rock and a hard place on this. If our assumption is correct—and we are working hard to make it correct—those other eight states are going to have primacy this year. By the time we hired more people, even if we hired them now and trained them, we wouldn't need them.

Mr. YATES. How do you know what applications for primacy of the states will be approved if you haven't had the personnel to conduct the inspections to see whether the states are complying with Federal standards?

Mr. HEAD. Mr. Chairman, The oversight programs consist of something other than inspection. Inspection is certainly a part of it, and it is a very important part of it.

In my discussion with the regional directors, I feel they are currently meeting their responsibilities for inspection.

Mr. YATES. How?

Mr. HEAD. With the reduction in personnel? They are doing it.

Mr. YATES. If you have a reduction in personnel you are not meeting your responsibilities, Mr. Head, are you?

Mr. HEAD. Yes, sir.

Mr. YATES. Your assumption is that with the reduction in numbers we cannot do it, and therefore, we cannot do the inspections. Our responsibilities have been cut back, and we don't have to do it. Is that what you are saying?

Mr. HEAD. No, sir. What I am saying, sir, is that currently we have 16 states either with approved or partially approved programs. We only have nine that are operating in the interim program where two Federal inspections per year are specified. What I am saying is that currently the agency is meeting its overall responsibility for the interim program.

PROGRAM APPROVAL CRITERIA

Mr. BAILEY. Mr. Chairman, may I respond? You asked a minute ago how we would know if the states could carry out their programs. I would like for Mr. Close to respond to that.

Mr. CLOSE. There are a couple of points to focus on. One is whether the state has suitable laws and regulations. Another is that the state has administrative and staff capacity to enforce its regulations. One thing which is not a factor under the Act in granting or refusing primacy is the state's past record. Every state gets a clean slate as far as that goes, so we look only at the state's capability to administer a strong primacy program when we go forward.

Mr. YATES. That makes it easier for you. What happens if the state has a bad record of violations? You are going to forget everything?

Mr. CLOSE. I would say we are going to forget everything.

Mr. YATES. You are wiping the slate clean, you said.

Mr. CLOSE. In developing our oversight program, the specific onsite program will be tailored to each State. We will look at the needs and problems, State by State, in determining how many inspections will be made.

Mr. YATES. As I remember, your earlier testimony, for two years you have wiped the slate clean. They have two years in which to operate. You are really not going to look at it for two years unless there are violations that are reported?

Mr. CLOSE. We will look at the program in that 2-year period. The 2-year period is how long we expect it will take them before they are operating on all cylinders in their program.

We expect that in this period they will carry out the requirements of the act as shown in their program; they will make inspections at the required frequency, and carry-out other parts of the program.

Mr. YATES. As I analyze the testimony so far, Mr. Close, I don't know that there is anything I can do about it except just say that I

don't think they are carrying out the intent of Congress. That is my own interpretation.

What you are doing is giving the state an opportunity to achieve primacy without even looking at what its inspection record has been. I mean what its violation record has been, and may be currently. If it has mines in that state which are violating the Federal standards, you are overlooking that, and you are giving them their certificate because you are wiping the slate clean. Isn't that what you just said?

Mr. CLOSE. That is largely true.

Mr. YATES. If you are saying that, then why have any inspection? Why not just give them their certificates and let them go?

Mr. CLOSE. Mr. Chairman, we are in a difficult position.

Mr. YATES. You surely are.

Mr. CLOSE. We are trying to balance a number of different purposes of the Act.

Mr. YATES. You are in a difficult position because the administration wants to cut back upon expenditures. The administration wants to cut back on regulations. The administration wants to cut back on Federal responsibilities. It wants to turn everything over to the states. That is your difficult position. You know as you sit there that there are violations that are occurring in these mines. They are there. Your inspectors aren't—I don't know why you have inspectors looking at it before primacy. What they are reporting isn't going to be effective, is it?

Ms. MARPLE. As the Chairman has pointed out—

Mr. YATES. Anything they do, goes. I think this is a shocking statement. I don't think it makes sense at all. It is just totally shocking.

INTERIM PROGRAM RESPONSIBILITIES

Why have any inspection? What is the purpose of having an inspector staff prior to primacy?

Ms. MARPLE. The inspection staff during the interim program has taken a great many enforcement actions that have substantially improved the operating picture of mines out there. So even if this record is not taken into consideration in determining whether or not a State is going to be given primacy, it is a fact that the Federal inspection workforce has had a tremendous impact on the operating environment.

Mr. YATES. But, Ms. Marple, shouldn't the states have to put their house in order before they are given primacy?

Ms. MARPLE. That would certainly be one way to interpret the Act.

Mr. YATES. What is your interpretation?

Ms. MARPLE. The previous administration decided to do it the other way.

Mr. YATES. But you are a new administration, Ms. Marple. What is your interpretation? What would you do?

Ms. MARPLE. What would I personally do?

USE OF HISTORICAL DATA

Mr. YATES. Would you give a certificate of primacy and let everything else go by the board? Does that make sense to you?

Ms. MARPLE. I would at least look at the history of a particular State in the light of what they propose.

Mr. YATES. Now we are talking about something. You would look at the history of the state. What conclusion would you draw if there was a record of violations?

Ms. MARPLE. I would look at their history in terms of looking at their future plans, what their staffing requirements were, for instance. If they in the past had not inspected frequently, I would take an extra hard look at—

Mr. YATES. Suppose they hired 200 percent of the number of inspectors that were needed to inspect their mines, and they still had a record of violations? What difference would it make if they had that number of inspectors on hand? The question is how are the mines operated? What are the safety factors? What are the other standards?

If the standards in the Federal act mean something, I would think they would mean that the Federal standards would be applicable and that a state would take over the responsibility of inspection only when it was in a position to say, "Yes, we will enforce the Federal standard." You don't have that, do you? You are wiping the slate clean.

Mr. BAILEY. When they submit their program, they are saying at that time they are capable of doing carrying out an acceptable state program.

Mr. YATES. That is what they are saying, but suppose you look at their record. Ms. Marple just indicated you look at the state's historic record.

I have heard stories about what is going on in the State of Kentucky, for example, or the State of West Virginia, and what some of their mining practices have been. You know what Alabama's mining practices are. I don't know what your background is except you come from Alabama. I assume there have been violations in Alabama, too.

Mr. BAILEY. There probably have.

COMMENTS ON THE INTERIM PROGRAM

Mr. YATES. There was a note in the Federal Register, January 6, 1981, requesting comments on the quality of state strip-mine enforcement during the interim period.

Did you receive any comments in response to that notice?

Mr. CLOSE. I don't believe that we did.

Mr. YATES. Not a comment? Does nobody read the Federal Register?

Mr. CLOSE. I am sure that it was noticed. I have no information that we received any comments.

Mr. YATES. Would you have received the comments if they came in?

Mr. CLOSE. Yes, sir.

Mr. YATES. I will say that is surprising to me. Was the notice put in the Federal Register?

Mr. CLOSE. Yes, sir.

Mr. YATES. January 6?

Mr. CLOSE. I don't recall the date, but there were several notices to that effect.

Mr. YATES. And nobody replied?

Mr. CLOSE. Not to my knowledge. I will be glad to reply for the record.

[The information follows:]

COMMENTS ON INTERIM REGULATORY PROGRAM

OSM sought public comment on whether Alabama, Illinois, Indiana, Kentucky, Ohio and Tennessee were adequately complying with the interim program requirements prescribed in Secion 502 of SMCRA. Fifteen comments were received; in only one instance did a commentor provide specific allegations that a state was not.

The one allegation concerned Tennessee where the commentor criticized the State's training of inspectors, recordkeeping methods and timeliness when responding to citizen complaints. The commentor also alleged there are deficiencies in the State's inspection, enforcement and permitting functions. Other commentors requested that OSM hold a public hearing on the adequacy of Tennessee's interim program activities. OSM is considering scheduling that hearing in May 1981. If Tennessee resubmits its proposed permanent regulatory program for review and approval by the Secretary in May, that may moot the need for an examination of the State's interim program performance at that time.

All other commentors supported the efforts of the subject State(s) and concluded they were in Section 502 compliance.

GRANTS TO STATES

Mr. YATES. How much grant money is tied up by the injunctions?

Mr. CLOSE. None.

Mr. YATES. Are the grants going out in spite of injunctions to the states?

Mr. CLOSE. The effect on grants is that we continue interim program grants for a longer period.

Mr. YATES. After how long?

Mr. CLOSE. Probably for approximately the period of the injunction.

Mr. YATES. How much money is involved in that?

Mr. CLOSE. We would estimate that the difference——

Mr. YATES. Put it in the record. I would like it accurate.

Get it to us fairly quickly because we will need it for the budget computation.

[The information follows:]

IMPACT OF INJUNCTIONS ON STATE GRANT REQUIREMENTS

Because the states under injunctions will be receiving interim program grants rather than the permanent program matching grants anticipated in the fiscal year 1981 budget, $7 million of the current appropriation of $36.2 million for the state regulatory grants activity will not be needed in the current year. The states with injuctions, will, however, be entitled to higher than anticipated Federal matching percentages in fiscal year 1982.

PROGRAM DEVELOPMENT GRANTS

Mr. YATES. Can you tell us which states are receiving $1.5 million in program development grants in fiscal year 1981 and 1982?

Mr. CLOSE. Yes, sir.

Mr. YATES. Put that in the record.

[The information follows:]

PROGRAM DEVELOPMENT GRANTS

The $1.5 million for program development grants in fiscal year 1981 and the $1.5 million requested for these grants in fiscal year 1982 are expected to be used for grants to Alaska and Washington, and to the four states where exploration programs are required. These states are Oregon, Michigan, Rhode Island, and Massachusetts.

COSTS COVERED BY DEVELOPMENT GRANTS

Mr. YATES. What state costs are covered by the program development grants?

Mr. CLOSE. This would be the costs of drafting the legislation, preparing regulations and preparing other materials such as the systems needed to operate a good State regulatory program.

Mr. YATES. Why the large increase from $600,000 to $2,900,000 in the next fiscal year for cooperative agreements?

Mr. CLOSE. Under Section 705 of the act the Secretary is authorized to increase the amount of the State's grant by the amount which the Secretary would have spent had he been doing the work. In fiscal year 1982 we estimate six states will have cooperative agreements which draw upon this authority as opposed to none in the past. There is some in 1981, but there was none in 1980. We have none in 1980, $600,000 in 1981, $2.9 in 1982 to reflect State work on Federal lands.

Mr. YATES. What is the nature of the cycle a state has to go through in order to get a grant? What is the procedure it has to follow? It applies to you, and what happens then?

Mr. CLOSE. We have a relatively simple procedure whereby a state submits an application according to the type program it will be running in the next year. We review that application with the state and approve it within a matter of a few months in most cases.

Mr. YATES. Is there any kind of inspection that you undertake to see what states should receive the grants?

Mr. CLOSE. We do use the results of our inspections and other activities with the states to determine whether or not there may be problems in giving a grant. There are some situations in which we have attached conditions to a grant.

CONDITIONS ON GRANTS

Mr. YATES. Such as what? What is the nature of the conditions you have attached? When you find out what conditions exist, then you put a certain requirement on the grant, do you not?

Mr. CLOSE. That is correct.

Mr. YATES. What is the nature of the conditions in the states that will cause you to make their grants conditional?

Mr. CLOSE. In one case we had a state which was approving permits which allowed the retention of high walls contrary to the Act. We required as a condition of the grant that the states stop that practice and amend all permits which it had issued.

Mr. YATES. Why would you put that grant in because it is in the Act? Why is it in the Act, because it is a dangerous practice?

Mr. CLOSE. Yes. The Act prohibits the practice of leaving high walls, partly because it is dangerous and partly because there may be other impacts, such as toxic materials exposed to weathering as a result of a high wall being uncovered.

Mr. YATES. How are you satisfied that the state has complied with that?

Mr. CLOSE. We are working with the state to see that they have, in fact, stopped issuing new permits with this requirement, and they did issue revisions to permits which they had previously issued. This would consist of the state informing us they had done that work and on-site inspections to verify that.

Mr. YATES. Who would make the on-site inspections, the state or the Federal Government?

Mr. CLOSE. Well, if we were satisfying ourselves they had carried out the condition, we would make the inspection ourselves.

Mr. YATES. What would you inspect?

Mr. CLOSE. Well, we could inspect two things: One, we could go to the sites which were involved and, two, we would verify that the state had, in fact, issued a revised permit. We would look at the paperwork to assure this was done.

Mr. YATES. Would you require legislation to abandon such a practice by the state?

Mr. CLOSE. No, the Act, itself, bans it.

Mr. YATES. And the states have to comply with that?

Mr. CLOSE. That is correct.

STATE COMPLIANCE WITH THE ACT

Mr. YATES. How do you make sure that the states have complied with all the requirements of the Act?

Mr. CLOSE. In the interim program and later in the permanent program, our inspections will give us an idea of what problems exist. In the particular case at hand, we found some cases where high walls were being left, and we took action accordingly.

Mr. YATES. Mr. Culp just testified that you haven't enough inspectors or inspections to carry on this program. How do you know that is happening?

Mr. CLOSE. Our shortfall of inspections in the interim program at this point is rather small. We are inspecting and meeting the mandate with regard to a large majority of mines.

Mr. YATES. How many conditional grants have you given? How many grants have you given first, do you know?

Mr. CLOSE. I can supply that for the record. I have a table which shows it. There are relatively few grants made with conditions. I can think of four at the moment.

Mr. YATES. I would think there would be none. I don't understand how you know what the conditions are, or whether they exist.

[The information follows:]

Grants with conditions

	Fiscal year
1. Illinois—Interim grant	1979
	1980
2. Kentucky—Interim grant	1980
3. Maryland—Interim grant	1979
	1980
4. Pennyslvania—Interim grant	1979
	1980
5. Virginia—Interim grant	1979
	1980

Copies of the above listed grant agreements have been supplied separately to the Subcommittee. Conditions No. 1-9 of the agreements are standard conditions that appear in all interim program development, and administration and enforcement grant agreements with states; conditions No. 10 and following are special conditions applicable to a specific grant.

SPENDING OF STATE GRANTS

Mr. YATES. How do you know the funds have been spent according to plan?

Mr. CLOSE. We follow the state progress in implementing the program through inspections and site visits in state offices.

Mr. YATES. What do you mean by site visits in the state offices? You don't go into the field?

Mr. CLOSE. Inspectors go into the field. We also have staff that would check the records in the office.

Mr. YATES. If the state permits this practice in one or two instances, how do you know it hasn't permitted it in 20 or 30 or 40 instances?

Mr. CLOSE. If we find it in a few instances, it occurs to us to look more broadly, and we have done that.

Mr. YATES. Where have you done that?

Mr. CLOSE. Specific cases would include Illinois, Kentucky, Georgia.

Mr. YATES. Will you give the committee reports on what your procedures were for determining violations of the Act, and what you did to follow it up?

Mr. CLOSE. Yes, sir.

[The information follows:]

PROCEDURES FOR, AND FOLLOWUP TO, DETERMINING VIOLATIONS OF SMCRA

During the inital regulatory program, OSM is required under the Surface Mining Control and Reclamation Act (SMCRA) to conduct two full inspections of each mining site per year. These inspections may detect patterns of State activities which are contrary to the Act—e.g., consistent failure to enforce certain requirements. In addition, problem areas are determined through materials submitted by States in response to regulatory requirments (e.g., copies of inspection reports), discussions with State officials and visits to State offices to review State program activities.

Followup procedures include discussing issues with the State and performing additional site inspections, incorporating special conditions in grants to resolve problems, and monitoring resolution activities through site inspections and meetings with State officials. If a satisfactory resolution is not reached, OSM can terminate or further condition a grant.

The most extensive example of how this process functions is best illustrated by the circumstances surrounding the Kentucky fiscal year 1980 interim program grant (See Appendix A supplied separately to the Subcommittee).

In April, 1980, OSM-Region II evaluated Kentucky's permitting process under the initial regulatory program. As a result of the review it was concluded that a number of permits had been granted in violation of SMCRA. These included several permits allowing approximate original contour (AOC) and highwall elimination variances (see Appendix A). The region provided the State a detailed summary of the deficiencies and recommendations. Kentucky acknowledged receipt of the evaluation but initiated no corrective action. In September, 1980, Region II recommended that the proposed grant be conditioned on remedying the problems discussed in the evaluation, revising the permits allowing AOC and highwall elimination variances, and withholding a portion of the payment of Federal funds related to permitting until the State took the previously mentioned actions. On January 30, 1981, the State contacted Region II stating that the special conditions had been satisfied (see Appendix H). OSM-Region II responded to Kentucky on February 5, 1981, stating that the conditions had been satisfied and authorized drawdown of the affected grant funds (see Appendix I).

Another example of how this process functions can be illustrated by the Pennsylvania fiscal year 1979-80 interim grant. Materials submitted by OSM-Region I by the state of Pennsylvania indicated that there were possible conflicts of interest with employees of the Department of Environmental Resources. Pennsylvania was informed of the problem by the Regional Director but initiated no corrective action. Region I recommended conditioning the grant to assure that any possible conflict of interest was resolved. The State worked closely with the Region by providing bi-weekly progress reports on the identification and resolution of conflicts of interest. On June 30, 1980, the State was informed by OSM-Region I that the special conditions had been satisfied.

Mr. YATES. The committee will return at 1:00 p.m.

AFTERNOON SESSION

OVERVIEW OF REGULATORY PROGRAM

Mr. YATES. What were we wrestling with when last we met?

Mr. BAILEY. Mr. Chairman, before we get started again, I have had time to think over the discussion this morning and, if I may, I would like to clear up some points. We believe the budget we are defending for fiscal year 1982 will support the law and not break it, and the law provides for the states to take over and run the programs. The states are working very hard to meet OSM requirements in gaining primacy, and we must trust the states that they will handle these responsibilities. OSM will have an oversight program in place and start oversight inspections within the next three months, so in 1982 we will be going full blast in oversights.

The sampling system we mentioned this morning we think is a good method to determine the number of oversight inspections we make, and the inspections are only a part of the overall oversight program. We will also look at permit issuance, frequency of inspections, number of violations, and bonding requirements. I am sure that the citizens groups will be working closely with the states as well as OSM to see that the states are carrying out their requirements of the law.

If you don't mind, I would like Mr. Close to explain a little further why we believe the states will carry out a strong program.

Mr. YATES. Mr. Close.

Mr. CLOSE. Thank you, Mr. Chairman. I think that the concerns that you enunciated this morning are very important to all of us, and in thinking back over some of the things that we have been doing I failed to mention a number of things this morning that I think are very important to your consideration and ours.

In addition to looking at every aspect of the State's capability for carrying out a program, we have been working very closely with them over the past three years to substantially upgrade what they can and will do. We have made interim program grants totalling $43 million to the states to upgrade their existing programs to comply with the initial program. Those grants are solely for increases over and above what the states were doing prior to enactment of the law.

This money has gone to provide more inspectors, to increase technical staff, to upgrade the State's standards, to provide for inspections, and every other aspect of the State's program. Not one state to my knowledge has failed to make major changes in the way it carries out its program. In those cases where lapses do occur such as those I mentioned this morning where we had some grant

conditions, we work very closely with those States to resolve those issues and get those programs back on track.

That is not to say that this is totally free of friction. We do have our differences with States, but through resolving those differences and with cooperation, we have gained a high degree of confidence in the fact that they are increasing their capabilities very substantially.

In the interim program alone, I estimate the states have added approximately 500 people to their staffs to carry out this program. Additional people will be added in their permanent program.

GRANT TOTALS

Mr. YATES. Thank you.

The justifications on page OSM-15 indicate that you are making 30 grants. How did you arrive at 30 grants since there are only 24 states with primacy or near primacy?

Mr. CLOSE. A state may have two grants at the same time. It can have an interim program grant for initial program responsibilities and at the same time have a program development grant to develop its permanent program.

Mr. YATES. Is there any limit on the amount that the state may have as far as monetary amounts are concerned from your grants?

Mr. CLOSE. There is no ceiling amount placed on the States. However, we do examine each grant carefully to assure the State is not asking for unrealistic or unusable amounts, and we do reduce some requests.

Mr. YATES. What is the workload associated with the request from states for assistance?

Mr. CLOSE. Are you referring to the technical assistance which we expect to provide to the states?

Mr. YATES. Yes.

Mr. CLOSE. The states request technical assistance on a variety of issues from technical to legal. For example, in fiscal year 1982 many of the States will be faced with resolving some technical issues as a result of conditions placed on their approval. These can be either technical or legal, and we will work with them so they can get full approval. Another form of technical assistance would be where we identify a weakness in their administration of their permanent program.

EXPLORATION PROGRAMS

Mr. YATES. What work do you have to do to establish exploration programs for states?

Mr. CLOSE. Are you referring to the probability that we will establish Federal exploration programs in the states?

Mr. YATES. Yes.

Mr. CLOSE. In this case it is a rather minimum program that we will be establishing. It consists of drafting regulations and a basic program framework to permit exploration in the States of Massachusetts, Rhode Island, Michigan and Oregon. I don't expect that the total program will require more than a couple of person-years' effort, even when it is running.

Mr. YATES. What involvement do the states have in this work, any?

Mr. CLOSE. At this point it has been rather minor. We have notified each state of what we are doing, and invited them to participate.

Mr. YATES. Will they receive grants?

Mr. CLOSE. If they wish to develop programs of their own. Oregon has indicated an interest in this, and we are discussing a possible grant with them.

FEDERAL LANDS PROGRAM

Mr. YATES. You want $9.2 million for the Federal land program. Is there expected to be new activity on Federal lands as a result of the operation of this program?

Mr. CLOSE. Yes, sir. As a result of this program, all mines must obtain new permits. The Act requires that all mine operators submit permit applications within two months of the approval of the State program, and the permits be granted within eight months. All mines on Federal lands must observe that standard requirement. They are required to come in on the same timetable whether there is a cooperative agreement or not.

UNSUITABILITY PETITIONS

Mr. YATES. Who initiates petitions to designate Federal land areas as unsuitable for mining?

Mr. CLOSE. Any person who has an interest, which would be affected by mining in an area, could initiate a petition. This could be a landowner or a person who used the area frequently.

Mr. YATES. What criteria do you use in evaluating the petition?

Mr. CLOSE. Section 522 contains several criteria for evaluating petitions, including those which are mandatory and discretionary. These criteria include, for example, as a mandatory designation those areas which cannot be reclaimed according to the standards of the Act. An example of a discretionary designation criteria would be one such as the provision allowing areas to be designated as unsuitable for mining if mining as a land use would conflict with other State or local land use. There are also criteria concerning competing resource values.

Mr. YATES. How many petitions do you think you will process during the year?

Mr. CLOSE. We expect that in fiscal year 1982 we will receive approximately 12 petitions. These are on Federal lands only, of which approximately six will require in-depth evaluation.

CAPABILITY TO APPROVE MINE PLANS

Mr. YATES. What about approving mine plans for operations on Federal lands; will the reduction in the amount made available limit your ability to approve mine plans?

Mr. CLOSE. Mr. Chairman, we don't believe it will. This is a situation where we had expected a surge in the workload in fiscal year 1981. We had constructed our program to rely on contracts in that period to reduce the program in 1982 and in future years. We will be able to complete the work.

Mr. YATES. How long does it take to get a permit to get a Western coal mine started?

Mr. CLOSE. The period for getting a permit can vary greatly. In past years it has run a number of years from the time that the permit application came into the Department of Interior. We are looking to reduce that period in the future to a much shorter period, perhaps as little as six to eight months, when no environmental impact statement is required, and perhaps 15 to 18 months where we do have to perform an environmental impact statement.

INDIAN LANDS PROGRAM

Mr. YATES. I asked you earlier about Indian lands. Do you know whether the administration proposes to change the law so that states will control Indian lands as well?

Mr. CLOSE. Mr. Chairman, this has not been discussed in the administration at this point. However, we have prepared draft legislation for its consideration.

Mr. YATES. Which would permit this for Indians?

Mr. CLOSE. For the Indians.

Mr. CULP. Not the States.

INSPECTION AND ENFORCEMENT PERSONNEL

Mr. YATES. But not state control. How many of the 350 authorized positions for fiscal year 1981 are presently occupied, inspector positions?

Mr. CLOSE. Ms. Marple.

Ms. MARPLE. How many are presently occupied?

Mr. YATES. Yes.

Ms. MARPLE. 161.

Mr. YATES. 161?

Ms. MARPLE. Inspectors?

Mr. YATES. Right, with 105 support personnel, right?

Ms. MARPLE. Yes.

Mr. CULP. Mr. Chairman, 266 out of 296 as of February.

Mr. YATES. 266 out of 296?

Mr. CULP. That does not include the overhead allocation against that account.

Mr. YATES. How long did you say was the average time it would take to perform an inspection?

Ms. MARPLE. In oversight inspection, 2 per week per inspector, and a direct enforcement inspection would be 2½ per week per inspector.

Mr. YATES. How much time does an inspector take for his inspection?

Ms. MARPLE. When we talk about that inspection figure, we are including all the followup time, including appearances in hearings and everything related to that particular inspection. How long the individual inspection took would vary depending on how big the mine was, whether the inspector was familiar with the mine and had been there before, and other factors.

Mr. YATES. What do you mean by program support personnel? Staff, secretaries and so forth?

Ms. MARPLE. Yes, supervisors, assessment clerks, and other positions.

Mr. YATES. How are you going to monitor state inspection enforcement activities?

Ms. MARPLE. What we will do is conduct the number of inspections required by the statistical sampling methodology. We will review the problem areas that we find, and discuss them with the state and clarify what the facts are. We will also review certain kinds of reporting that we will get from the states in connection with their grant.

Carl, you probably have some other things.

Mr. CLOSE. We will actually go to the state, Mr. Chairman, and review their records of how many inspections they have made and the findings that they have made.

TECHNICAL SUPPORT WORKLOAD

Mr. YATES. Do you expect an increase in the workload of technical support?

Mr. BAILEY. No, sir, not overall.

Mr. YATES. Do you rely on colleges and universities to help perform the technical services?

Mr. BAILEY. Not actually perform them, but we do fund some research grants and they help with some of the studies.

Mr. YATES. Do you have any idea as to how much you will be relying on colleges and universities?

Mr. BAILEY. I would like to refer that to Mr. Johnson.

Mr. YATES. Mr. Johnson.

Mr. JOHNSON. Mr. Chairman, for 1982 we have several studies that will be in response to requirements, statutory requirements, and worked out with the State regulatory authorities. A substantial portion of the following are what we will be working on with the universities. One is improved overburden analytical analysis. We need to find out characteristics of the overburden, how best to place it with the post-mining land use.

Another requirment of the Act is to determine the hydrologic consequence of mining. When there are too many mines in an area that may affect the water-flow characteristics, and this will be jointly studied by several universities.

The disposal of excess spoil is another problem which will be studied with sister agencies in the government. Coal-processing waste, some of this will be with universities and some will be with industry. Prime farmlands productivity, also using soil substitute material will be studied with some university involvement. Guidelines for wildlife habitat management are being developed with other agencies.

REGULATIONS REVIEW

Mr. YATES. You are asking for more people to review regulations. Why do you need more people?

Mr. BAILEY. Mr. Chairman, regulations are being revised and the work will continue into 1982. Another thing is as new technology comes along you need to continue to upgrade the regulations and

keep them current. This is the reason we are asking for those additional people.

Mr. YATES. You don't have enough people on board now?

Mr. BAILEY. It is a shift in the program.

Mr. YATES. Where are you getting them from?

Mr. CULP. Mr. Chairman, we reduced the level of effort in a couple of other technical support areas. One was technical support for the evaluation of state programs, because that process now is delayed by the injunctions in the eight states. We also reduced the manpower that we are going to use for research activities. Overall, there is a reduction of 15 positions in the technical support area, but as you say, the level of effort for regulation revision was increased.

PROGRESS ON REGULATIONS REVISION

Mr. YATES. Have you completed a draft of revisions of OSM regulations?

Mr. BAILEY. We have completed sections of a draft to revise the bonding regulations, the performance standards, inspections and enforcement, and parts of State programs.

Mr. YATES. How much of a requirement will there be that the states have a uniform set of standards?

Mr. BAILEY. It will be required of the States to at least meet the requirements of the law.

Mr. YATES. Of the Federal law?

Mr. BAILEY. Yes, sir, and they can make any requirements that they think they need for their individual States based on different climate or topography.

MINERAL INSTITUTES

Mr. YATES. The minerals institutes program is being terminated?

Mr. BAILEY. Yes, sir.

Mr. YATES. Why is it being eliminated?

Mr. BAILEY. Well, we had to establish some priorities because of the need to improve economic performance. We found out that this spending fell in a lower priority.

Mr. YATES. What happens to the work that was being done by the institutes; does that just come to an end, Mr. Johnson?

Mr. JOHNSON. Mr. Chairman, when the mineral institutes program was developed in 1977 under Title III, each of the mineral institutes developed an advisory committee. That committee has helped them and the nation to become aware of our energy problems, so there has been more recognition of the need for support of a minerals program.

Also during this period from 1977 through 1981 OSM has been providing seed money to the universities. This has been matched with funds from the state and the public sector as well as industry, and now we feel that mineral institutes are in a position to carry on research and training with a minimum or without Federal help.

Mr. BAILEY. Mr. Culp I think has something to add to that.

Mr. CULP. Mr. Chairman, we have not made the mineral institute grant awards for fiscal year 1981 as yet. One of the things that we will do so that there is an orderly termination of the Federal

program is to make scholarship grants this year available so that the students that are under that part of the program can finish their degree. We will do that by making these grants available for whatever period of time that may require.

We will also seek to complete the research, the multiyear research projects that are underway with the fiscal year 1981 grants, so that there is an orderly termination of the program.

Mr. YATES. If this is a low priority, should we not rescind the money for 1981?

Mr. CULP. If that was done, it would create these kinds of problems. It would leave students and research projects hanging because we have a number that were funded over a period of two or three years.

INSTITUTE RESEARCH PROJECTS

Mr. YATES. How important are the research projects?

Mr. CULP. Ed, how important are the research projects? Would you like to address that?

Mr. YATES. He said if Congress rescinded the money, that would leave your research projects hanging. We are terminating them anyway at the end of the year. You are closing it out. Why not close them out now, by rescinding the funds? With all the rescissions that have taken place, why not include this one?

Mr. BAILEY. Mr. Close, can you respond?

Mr. CLOSE. Mr. Chairman, many of those research projects are in support of our basic regulatory objectives and do have important work which can be terminated in several months to a year, perhaps somewhat longer.

Mr. YATES. What are your basic regulatory objectives?

Mr. CLOSE. Perhaps better ways of carrying out certain regulatory requirements, such as sediment control. One of the real problems we have is what is the best technology to use to control sediment, and we do have research projects on that.

Mr. YATES. You are terminating the program anyway this year. You are not going to have it going on next year. Suppose the research is not completed?

Mr. CLOSE. We will look for ways to continue important research even if we don't fund it ourselves.

Mr. YATES. How are you going to do that?

Mr. CULP. Instead of starting new projects this year, Mr. Chairman, we hope to use the money to finish the projects that were funded in previous years.

Mr. YATES. What projects have you got going?

Mr. BAILEY. Mr. Johnson, can you respond?

Mr. JOHNSON. For example, in the State of Illinois we have a——

Mr. YATES. Just by coincidence?

Mr. JOHNSON. Just by coincidence. OSM put in a modest amount of money. The Illinois Institute of Natural Resources is working with——

Mr. YATES. Is that at Carbondale?

Mr. JOHNSON [continuing]. At Carbondale, yes. On coal fines recovery and utilization, how to perfect a process which will be operated in the field to recover coal fines from slurry ponds. Also the Aluminum Company of America and Electric Power institutes

are working with the minerals institute on statistical evaluation methods for identifying mineral resources, particularly some of those that are underneath prime farmlands in southern Illinois. Another one is the microstructure of coal in relation to the microfactor mechanisms, as to how you can identify coal features that will simplify the grinding and the coal-cleaning process. This is undertaken in cooperation with the mineral institutes by the Department of Energy. Then we have another one on coal desulfurization.

Mr. YATES. Do your institutes know that their programs are going to be terminated at the end of this fiscal year?

Mr. CULP. Yes, they do.

Mr. BAILEY. I am sure they know that.

Mr. CULP. They are well aware of it.

FUTURE OF THE INSTITUTES

Mr. YATES. What will they be doing? Will the institutes be doing any work at all after this fiscal year? Will this mark the end of the life of the institutes?

Mr. BAILEY. No, sir.

Mr. YATES. What will they be doing other than research?

Mr. BAILEY. Some scholarships will continue under fiscal year 1981 grants.

Mr. JOHNSON. OSM has set up the machinery, which is an organization in 31 States with an advisory committee. The schools and the States have seen the need for this.

Mr. YATES. For what? What is this?

Mr. JOHNSON. For a mineral institute program; for what it can provide in terms of research opportunities.

Mr. YATES. How do you train students if you are terminating the research?

Mr. JOHNSON. But we expect these efforts will be picked up.

Mr. YATES. By whom?

Mr. JOHNSON. By the university itself, and by industry.

Mr. YATES. The universities are the ones that want the institutes and their money. You are not going to give them any money after this. How are they going to continue the programs? The universities are on a razor's edge as far as research is concerned. The administration is terminating their research in every activity. How are they going to get money for this?

Mr. JOHNSON. The examples we have, Mr. Chairman——

Mr. YATES. Examples of what?

Mr. JOHNSON. That the universities have put in additional funds in order to support the mineral institutes program for masters and doctoral thesis projects.

Mr. YATES. Are you suggesting that the universities are going to put in more funds for this if the Federal Government pulls its money out?

Mr. JOHNSON. I believe there is a very good possibility of this.

Mr. YATES. Do you really? Have you talked to any of the universities about it?

Mr. JOHNSON. The report that I get from our people in the mineral institute program here suggests that.

Mr. YATES. What will I do? Shall I call Carbondale to find out how accurate that is? What is your guess, Mr. Head? You look like you are getting ready to say something.

Mr. HEAD. No, sir. I think your guess is right, that in many instances universities will not be able to replace these programs.

Mr. YATES. Of course they are not.

Mr. HEAD. However, when the Secretary looked at all——

Mr. YATES. Before you answer, Mr. Close, let me suggest to you that I have here inter-office correspondence from Pennsylvania State University. These are answers to some questions from Congressman Murtha's office:

(1) Why should not the States pay for this Title III minerals research program?
Answer: (a) Strategic minerals are a national problem, not the problem of some particular state or states. Without the federal stimulus, the program will not go.
(b) The states do match the Federal funding of section 301 of Title III.
(2) Could we do with fewer than 31 institutes?
Answer: Yes. We could cut back on the number and still have an effective program. The Congress, for example, might want to take action to decrease the number back to the original 22.
(3) Will government or industry pick up this basic type of research on mineral resources if the MRIs are not funded?
Answer: No. The very important basic research in this, as well as in most fields of science, is done predominantly in universities. There is just no possibility of government or industry picking this up.

Mr. HEAD. Mr. Chairman, as I understand it, the reason for the Secretary's decision is not that these programs were not essential, or were not good programs, but when he looked at all the things that the Department of the Interior was doing, when he looked at all the programs that the Department of Interior was operating, we set priorities, this particular program was at the low end of the totem pole.

CRITICAL MINERALS RESEARCH

Mr. YATES. But the point is it is not going to be carried forward?

Mr. HEAD. If you look at the critical minerals, you find that in the Bureau of Mines alone there was an increase in research as it relates to critical minerals, sir.

Mr. YATES. Oh, that, yes.

Mr. HEAD. Yes, sir.

Mr. YATES. That was the Bureau of Mines.

Mr. HEAD. Yes, sir.

Mr. YATES. That is right, but that is Federal funding. You are cutting out Federal funding. The states are saying they are just not going to do it.

Mr. HEAD. Yes, sir, but we are not generally talking about critical minerals when we talk about the mineral institute.

Mr. YATES. Do you want Federal funding by the Bureau of Mines for this program?

Mr. HEAD. No, sir. When we speak of research as a whole, and we look at the critical minerals—

Mr. YATES. Yes.

Mr. HEAD. In this area, you will find that as it relates to Department of the Interior in the Bureau of Mines they had $38 million proposed by the Carter Administration. This administration increased that by $8 million. When you look at the research that the

mineral institutes are doing, it is not in the critical mineral area generally.

STATUS OF MINERAL INSTITUTES

Mr. YATES. Therefore it is dead. Are we in agreement that it is dead?

Mr. HEAD. I don't think it is dead, sir, not completely.

Mr. YATES. It is moribund?

Mr. HEAD. I think that industry will pick up some of this research. I don't think it will all die. We have examples here where the industry has already picked up some of it, sir.

Mr. YATES. Such as what, Mr. Head?

Mr. JOHNSON. In the State of Pennsylvania where the Office of Surface Mining put in a modest amount and Exxon company put in over $90,000 to do some modeling work for construction of a special copper mine project. We also have another one where the Electric Power Institute put in over $20,000 for developing a prediction tool for predicting the coal washability characteristics.

Mr. YATES. Why does Exxon need the Mineral Research Institute? It has got more money than the government has got. It will pick it up, sure. It will go ahead by itself. It won't need the Mineral Research Institute.

Mr. JOHNSON. By having these other funds at a university, it enables a graduate student to pursue his master's or his doctoral thesis as a part of his educational program. He has employment as well as doing research at the same time.

Mr. YATES. This document I was referring to is from Pennsylvania State University, addressed from Mr. E. F. Osborne to Congressman John P. Murtha. That may go into the record.

[The letter dated March 27, 1981 follows:]

THE PENNSYLVANIA STATE UNIVERSITY

INTER-OFFICE CORRESPONDENCE

Date: 22 March 1981

From: E. F. Osborn

To: [redacted]

Below are some thoughts that might be useful for defending continuing funding of Title III of PL 95-87, i.e., the Mining and Mineral Resources Research Institute program (hereinafter referred to as MRI), followed by some questions, as per your suggestion.

Our dependence on foreign petroleum is continuing to increase -- up to 46% in 1980. It is well known that this situation seriously threatens our industrial base and national security.

Additionally, but not as widely recognized is our dangerous dependence on imports of critical non-fuel minerals. The sources of these, such as Zaire and South Africa, are far from secure. This frightening dependency was emphasized in the report, dated December 31, 1980, of the Committee on Armed Services of the House of Representatives, entitled, The Ailing Defense Industrial Base: Unready for Crisis. On page one of this report is the statement, "a shortage of critical materials, combined with a resulting dependence on uncertain foreign sources for these materials, is endangering the very foundation of our defense capabilities".

Minerals especially important to the country's defense are frequently referred to as strategic minerals. They play various roles, as for instance to increase resistance to high temperature and to corrosion and erosion. Examples, with percent of each that is imported shown in parentheses, are: titanium(47), nickel(73), chromium(91), cobalt(93), columbium(100) and tantalum(97), all required in the manufacture of the Pratt & Whitney F-100 Turbofan engine for F-15 and F-16 planes. Other especially strategic minerals are: manganese(97), aluminum(94), platinum-group metals(87), and iron ore(22). Although we import only 22% of our iron ore, nevertheless a stoppage of this supply could be disastrous to our iron and steel industry.

Research in resource fields is most effective when carried out as a tri-partite operation, involving all three of Universities, Government and Industry. In the United States we strive to achieve a maximum return by having each of the three do what it naturally does the best. Where government laboratories predominate, at the virtual exclusion of research at universities or private industry, as in Russia and in many other countries, the research is not as imaginative or productive. The Congress noted during hearings in 1969 on the Bill that became the National Mining and Minerals Policy Act of 1970, that university research in mineral resources had been extremely neglected. Half of the mining schools or departments in universities existing in 1938 had been closed for lack of support, and the rest had become very weak. A Bill was passed by the Congress in 1972 to create the MRIs to help correct this national problem. This Bill was not enacted into law, but the language was later incorporated into PL 95-87 as Title III, and enacted into law in 1977.

Title III has been funded for 4 years. The Congress provided supplemental funding for the first year, FY 1978, even though the Interior Department did not request any funding. Clearly the Congress, since the legislation was first passed in 1972, has been highly desirous to have the MRI program in operation. There are now 31 schools in the program, one to a State. These institutions are rapidly building up competence in research in the mineral engineering fields. To stop this program now would be a calamity -- a severe set-back to attempts by the Congress to build up a university research base for minerals critical to our industrial base and national security.

Some Questions

(1) Why should not the States pay for this Title III minerals research program?

Answer: (a) Strategic minerals are a national problem, not the problem of some particular State or States. Without the federal stimulus, the program will not go.
(b) The States do match the federal funding of Sec. 301 of Title III. Other non-federal funds have come in to support the program as it has developed.

(2) Could we do with less than 31 Institutes?

Answer: Yes. We could cut back on the number and still have an effective program. The Congress, for example, might want to take action to decrease the number back to the original 22. There would still be suitable geographic distribution.

(3) Will government or industry pick up this basic type of research on mineral resources if the MRIs are not funded?

Answer: No. The very important basic research in this, as well as in most fields of science, is done predominantly in universities. There is just no possibility of government or industry picking this up.

(4) The funding of Title III for FY 1981 was approximately $9.6 million, divided about equally between Sec. 301 (basic allotment) and Sec. 302 (research grants). How could the budget be cut with least decrease in effectiveness of the program?

Answer: The Sec. 301 funds should not be decreased. They are basic to the survival of the program, and further, are matched by the States. This annual allotment ought to be increased from the present $110,000 for each Institute to $200,000. The Sec. 302 funding can be cut with less harm, especially if it is understood that: (a) research on strategic minerals will be emphasized, with elimination of studies on reclamation of land and other environmental problems that are currently being supported, but can be supported by other governmental agencies; and (b) if the scholarship program is eliminated.

(5) From a practical standpoint, what research can universities do that will lessen the threat to this country caused by our dependence on critical mineral imports?

Answer: University research is needed to develop the theory and necessary ground work for improved technology in the mineral fields. Our exploration for new mineral deposits, for example, is dependent on

advanced geophysical and geochemical technology. New and more efficient mineral beneficiation and extractive processes are needed for the leaner ores. Less energy-intensive mining technology is required, and is a possible development through solution mining, for example.

Where it is now economical to import certain critical minerals, we no doubt should continue, but we should be preparing for a possible cut-off of foreign supplies by getting technology on the shelf that will make possible using our low-grade deposits, and we should be expanding exploration using new technology. University-type research is the underpinning for the new technologies.

(6) Why does the Secretary have this minerals research program (MRI) administered by the Office of Surface Mining, a regulatory agency, rather than the Bureau of Mines?

Answer: The Secretary made a mistake, and this should be rectified.

(7) With administration by OSM, has the research supported by Title III funds been slanted toward surface mining problems?

Answer: Yes, this seems to be the case. Strategic minerals research has not been emphasized in grants under Sec. 302 of Title III.

(8) Why has over $50,000 per year been awarded to each Institute for scholarships, inasmuch as this is a research-support program?

Answer: The scholarship program that OSM put into effect using Sec. 302 funds was not the intent of the Congress, and would seem to be a misuse of funds.

(9) The Interior Department, during the past 3 or 4 years has been the lead agency for a non-fuel minerals study that cost an estimated $3.5 million. The following questions should be asked:

(a) Where is the report? We have seen only a brief summary.

(b) Does this study emphasize the need for research and development on strategic minerals?

(c) Is it the present belief of Interior that the U.S. is in an insecure, even dangerous situation because of dependence on imports of critical minerals?

(d) If so, why is continuing financial support not requested for the Title III program?

EFO/rs

CONTINUING PROMISING RESEARCH

Mr. YATES. Are you going to continue any promising research projects that are previously funded for fiscal year 1982?

Mr. JOHNSON. Is this in the mineral institutes program?

Mr. YATES. Yes.

Mr. CULP. Not in fiscal year 1982.

ESTIMATES OF ABANDONED MINE LAND RECLAMATION

Mr. YATES. Let's talk about the abandoned mines now. What is your best estimate of the amount of reclamation work that will require attention? Can you give us that?

Mr. BEASLEY. Total cost of reclamation, there have been various estimates, around $30 billion to $40 billion.

Mr. YATES. Billion?

Mr. BEASLEY. Billion.

Mr. YATES. Can you tell us the amount of land area that is involved?

Mr. BEASLEY. I have that. I will have to dig out the charts to do that.

Mr. YATES. Would you give us the total for the record?

Mr. BEASLEY. Yes, sir.

[The information follows:]

PREVIOUSLY MINED LAND REQUIRING RECLAMATION

It is estimated that there are 1.5 million acres of disturbed land that require reclamation.

PRIORITY ONE WORK

Mr. YATES. Is there any part of the work that you would classify as Priority One?

Mr. BEASLEY. Yes, sir, most of the work, all that we have done. We have only done emergency work and Priority One work.

Mr. YATES. And how much money is represented by Priority One work?

Mr. BEASLEY. Of the $30 billion?

Mr. YATES. Would you put that in the record, please.

Mr. BEASLEY. Yes.

[The information follows:]

PRIORITY ONE WORK

It is estimated that priority 1 (extreme danger) reclamation problems will require $6.23 billion or 20 percent of the total $31 billion reclamation cost. Information on priority 1 reclamation problems by OSM Regions is as follows:

	Priority 1	
	Reclamation cost (millions)	Problem areas
OSM region:		
I	$4,880	1,240
II	850	720
III	430	140
IV	30	70
V	40	100
Total	6,230	2,270

INVENTORY OF ABANDONED MINE LANDS

Mr. YATES. Are you still on schedule to complete the national inventory?

Mr. BEASLEY. Yes, sir, that should be completed by the end of this calendar year, substantially completed.

Mr. YATES. How much more will you need to continue updating the inventory in future years?

Mr. BEASLEY. Around seven to eight hundred thousand dollars per year would be required.

Mr. YATES. If the amount requested for 1982 is appropriated and the receipts come in as projected, can you tell us what the unappropriated balance in the fund is likely to be?

Mr. BEASLEY. $424 million at the end of fiscal year 1981. I would add another $108 million to that. That would be approximately $532 million remaining unappropriated at the end of fiscal year 1982.

Mr. YATES. Is that backlog going to grow or is it going to be cut into at all?

Mr. BEASLEY. It is sheer speculation at this point on the 1983 budget, but I hope we can cut into that.

PRIORITY ONE PROJECTS

Mr. YATES. So that is going to continue to grow. How dangerous are your Priority One projects?

Mr. BEASLEY. The emergency projects which we are doing are the result of a sudden event that presents an imminent hazard. For Priority One, the difference is the degree of urgency. Priority One represents extreme danger to people and/or property that an event will happen if corrective action is not taken so those are dangerous situations.

Mr. YATES. Did you say you were going to put the amount of Priority One projects into the record?

Mr. BEASLEY. I will attempt to. A lot of past inventories have not made that breakdown. I will attempt to do that.

Mr. YATES. If it is as dangerous as you say, why shouldn't we have that kind of a breakdown all the time, because there is liable to be an emergency at any time, isn't there, with that kind of project?

Mr. BEASLEY. Yes, sir. What I am saying is that we have not completed our inventory, so we can't make the breakdown. In the past, inventories by the Bureau of Mines and others did not make that type of classification. We will estimate that based on our experience to date. We will attempt to make that breakdown.

Mr. YATES. How long will it take you to do it?

Mr. BEASLEY. A matter of days.

Mr. YATES. Is that all?

Mr. BEASLEY. It would still be speculation because we will have to extrapolate from what we know now in our inventories com-

pared with what other agencies have said. It will not be an exact number until we finish our inventory.

Mr. YATES. Will you alert the committee to the fact that you are putting it in the record so that the committee may review it. Will this report contain a figure rather than the types of dangers?

Mr. BEASLEY. It will be an acreage and a dollar sum.

Mr. YATES. Would it be possible also to indicate possible dangers from each of those and what the possible dangers are, which led you to categorize it as Priority One?

Mr. BEASLEY. Yes. We will attempt to break that by the type of danger, mine fires, and so on.

[COMMITTEE NOTE.—The information requested is not available.]

STATE RECLAMATION GRANTS

Mr. YATES. $28 million of the amount obligated for State reclamation grants is still unobligated.

What capacity will the states have to manage effectively $100 million in work?

Mr. BEASLEY. Based on what we have seen in the reclamation plans, I think they will be in excellent shape. We have attempted to finance most of our work through the states. They have excellent experience.

Mr. YATES. Will you have an on-site role to monitor the individual State projects?

Mr. BEASLEY. Not on-site. We will attempt to ensure the technical and financial integrity of the fund. That means we will look at a certain number of sites to see that we got what we approved and that the work was successful.

Mr. YATES. What do you mean by a certain number of sites? Are you going to use Ms. Marple's statistical calculations? What are you going to do?

Mr. BEASLEY. If we get the increase we have asked for, we will have roughly two people per state. That is what we will have, and those people will make site visits, the maximum number possible of the actual work going on, both in our program, in the RAMP program of Agriculture, and the State program. Every delivery system we utilize will include visits to the site to see periodically that work.

Mr. YATES. Can two people do that? You don't seem sure.

Mr. BEASLEY. No.

Mr. YATES. Would you rather have three people?

Mr. BEASLEY. It is less than the ratios used by other Interior agencies, but we can do this work since we have a different program.

Mr. YATES. What is the trouble that you have? Is Mr. Bailey being tough on you?

Mr. BEASLEY. One thing that I have learned is not to volunteer opinions before this committee.

Mr. YATES. The committee can overrule Mr. Bailey and give you three people if you want them.

Mr. BEASLEY. Our initial proposal was that to do the optimum job, we need about four people per million dollars in the Federal program and two per million in the State. We will have about one person for one-and-a-half million in state projects.

Mr. YATES. So you won't be doing the job?

Mr. BEASLEY. Not to the optimum extent we would like to do the job.

Mr. YATES. You will just be doing a slap-dash kind of job. Is that right? It will be like fixing a roof that has 10 leaks, and you will fix only two leaks.

You would rather have four people?

Mr. BEASLEY. Yes.

GRANTS TO STATES UNDER INJUNCTIONS

Mr. YATES. Mr. Bailey, do you hear that? Take that under advisement.

How much of the $70 million for State grants is scheduled to go to the states under injunctions?

Mr. BEASLEY. We don't have that broken down by state. The main states are Pennsylvania, Kentucky, Ohio, and Virginia. It will be mostly Pennsylvania which will have about $50 million in the fund.

STATE RESPONSE TO EMERGENCIES

Mr. YATES. Do the states have any authority to respond to abandoned mine emergency situations?

Mr. BEASLEY. They can write that into their programs, but they have chosen not to; so that remains the authority of the Secretary.

Mr. YATES. Why have they chosen not to?

Mr. BEASLEY. There is no clear statement I can make about that. The states have seemed to assume that to be the prerogative of the Secretary. Such authority has not been written into the three programs that we have approved.

Mr. YATES. Would it help you to have authority to respond to that kind of situation?

Mr. BEASLEY. Yes. As a matter of fact, in the State of Illinois we have funded a rapid-response team, and that has been very helpful.

Mr. YATES. Wouldn't it be helpful if you make it a requirement that they do it? You say it would be helpful. Why don't you require them to do it?

Mr. BEASLEY. To this point we have been able to handle the emergency situations. We have totaled about $6 million this year, and we have the capability to handle that.

Mr. YATES. You are not going to have the capability if we approve the budget requested. You will only have one-and-a-half people per state.

Mr. BEASLEY. The emergency is a Federal program which has adequate personnel.

Mr. YATES. I don't understand your answer.

Mr. BEASLEY. We have the staff capability under the Federal funding to conduct the emergency program. It would be helpful if the states had that, as they have in Illinois, but that is not necessary.

Mr. YATES. When does it become necessary? Does it become almost necessary when you only have one-and-a-half million employees to deal with the problem?

Mr. BEASLEY. No, the one employee per one-and-a-half is for the State grants.

Mr. YATES. And this is the Federal funding we are talking about now?

Mr. BEASLEY. Yes.

Mr. YATES. Will you have enough people to conduct that?

Mr. BEASLEY. That has worked very well. We have enough people for that.

Mr. YATES. You will have in 1982 as well?

Mr. BEASLEY. Yes, sir.

Mr. YATES. Why?

Mr. BEASLEY. It isn't that big. It is only six million this year, and the numbers are not that big.

RURAL ABANDONED MINE PROGRAM

Mr. YATES. What about the Rural Abandoned Mines Program—program planning, coordination and management? You want $840,000. How much of the money goes to the Rural Abandoned Mines Program?

Mr. BAILEY. $4.3 million.

FEE COLLECTIONS

Mr. YATES. You are to collect $200 million in fees annually.

Mr. BAILEY. About that.

Mr. YATES. Do you have any problems in collecting that money?

Mr. BAILEY. It is not all collected, but we are working on it.

Mr. BEASLEY. That is a part of our program. We feel we are getting 95 percent compliance. At least 95 percent fee compliance.

Mr. YATES. Does this mean you are taking in about $190 million?

Mr. BEASLEY. About $223 million is projected for 1982.

Mr. YATES. Does that money go to the Treasury?

Mr. BEASLEY. Yes, it goes to the Treasury.

Mr. YATES. Do you have any problems? Why isn't it 100 percent?

Mr. BEASLEY. Our experience to date shows that about two percent of the operators underestimate what they owe us, and another two percent simply don't report; so that is 96 percent.

Mr. YATES. Do you have any kind of a cooperative mechanism in the states to collect the fees?

Mr. BEASLEY. No, sir.

RESPONDING TO EMERGENCIES

Mr. YATES. How do you take care of an emergency situation that arises for Interior reclamation projects?

Mr. BEASLEY. A typical example is: there is a traumatic event of subsidence in somebody's yard or basement. They notify us or the state. We send an inspector or reclamation specialist to the site. He assesses the degree of danger. He assesses whether it constitutes an emergency. If it does, he has the Regional Director declare that an emergency. We then are authorized to use certain contracting authority so that we can get contractors there within hours at times,

and we often do. We have many instances where we have acted within 24 hours.

Mr. YATES. Is the program moving as quickly as it should be?

Mr. BEASLEY. We are very happy with the abandoned mines program.

USE OF COOPERATIVE AGREEMENTS

Mr. YATES. Why do you use cooperative agreements so often?

Mr. BEASLEY. The philosophy was that we wanted to use the State capability to help them develop their capabilities as much as we could so that when they got their moneys, they would have their staff in place; they would have their experience behind them, so they could hit the ground running. It has worked very well. We use about two-thirds of our money in cooperative agreements to the states.

Mr. YATES. Why not with Indiana?

Mr. BEASLEY. We have difficulty with the legal people there. It stops us from using the cooperative agreement. I think it is because they feel it may jeopardize their position concerning the regulatory program.

BUREAU OF MINES PROJECTS

Mr. YATES. Will the OSM/BOM agreement remain in effect in fiscal year 1982?

Mr. BEASLEY. Inasmuch as it will take that amount of time to complete the projects they have funded under the $16 million moved to them in 1981.

Mr. YATES. Did you say it will be in effect?

Mr. BEASLEY. They will be completing many of those projects.

Mr. YATES. Do you have any authority that isn't available to the Bureau of Mines?

Mr. BEASLEY. Our emergency contracting authority is not available to the Bureau, and that is what allows us to act quickly in emergency situations.

Mr. YATES. Has your staff worked with the Bureau of Mines?

Mr. BEASLEY. We have many people working with the Bureau of Mines.

FEDERAL PROJECT WORKLOAD

Mr. YATES. Your budget justification indicates that you will have about 50 emergency projects and 98 projects in high priority workload categories. What projects will remain there in the next fiscal year?

Mr. BEASLEY. We have many extreme-danger items. We have a pipeline with some $80 million worth of projects moving through from identification to completion. Most of those will go unfunded simply because of the lack of funding to handle this project, and they are all Priority One projects.

Mr. YATES. We have had that pipeline for years, haven't we?

Mr. BEASLEY. Yes, sir.

EMERGENCY PROJECTS WORK PLAN

Mr. YATES. Have there been any cases of where your Priority One projects have resulted in some kind of a calamity?

Mr. BEASLEY. We have had several instances where we have had to move the project from Priority One to emergency because of weather. In other words heavy rains might impound water behind a slag dump, make us change our priority ranking and have us act immediately. We have had to move between priorities.

Mr. YATES. How often does that happen?

Mr. BEASLEY. Not a great amount of time, but it is a not-uncommon occurrence. It isn't often, but it is not unusual.

Mr. YATES. What support capabilities do the states have?

Mr. BAILEY. We feel it is very good. We think many of the states run their reclamation program out of the regulatory department, if you will, and a lot of that same expertise is available.

Mr. YATES. Are you giving up any Federal work in order to meet the State reclamation workload?

Mr. BAILEY. No, sir.

CENTRALIA FIRE

Mr. YATES. What is being done about the Centralia fire?

Mr. BAILEY. Mr. Chairman, the Secretary of the Interior agreed with the Governor of Pennsylvania that we would spend about a million dollars and move 25 or 26 families, and purchase their homes and relocate them. These homes are in a 16-acre plot near the outcrop of the coal. They are getting some gases in the houses.

Mr. YATES. How much will it cost?

Mr. BAILEY. About $1 million.

Mr. YATES. Do you have the money available?

Mr. BAILEY. Yes, sir.

RAMP OVERSIGHT

Mr. YATES. What is your oversight authority for the rural abandoned mine program?

Mr. BEASLEY. We work with the RAMP people to do joint field inspections and reviews of projects. They have a well developed review program, and we join with them on certain projects to look at them and see how they are being done.

Mr. YATES. Who is going to do the reclamation work in states where there is no State program?

Mr. BEASLEY. The Federal program will handle that.

Mr. YATES. Are you prepared to do it?

Mr. BEASLEY. Yes, sir.

Mr. YATES. Do you have the money to do it?

Mr. BEASLEY. We will be doing most of the emergencies. We won't conduct a complete program; no, sir.

Mr. YATES. You are not decreasing staff, even though the program is being cut by $6 million? Does that make sense? We are talking about the RAMP program.

Mr. BAILEY. Mr. Burns will speak to that.

Mr. BURNS. Mr. Chairman, in this fiscal year we had about 147 permanent full-time people working on the rural abandoned mine program. With the $4.3 million level we will have approximately 95 people working on the program. We will accomplish that through a

re-direction of our staff. What we would do is reassign them to other conservation activities.

Mr. YATES. You are streamlining them?

Mr. BURNS. RAMP is one of many programs administered by SCS. We have other places to use those employees.

Mr. YATES. Are you funding any new contracts in fiscal year 1982?

Mr. BURNS. The $4.3 million will not enable us to fund any new contracts. It will service existing contracts and projected modifications of those contracts.

TAX PROBLEMS WITH RAMP

Mr. YATES. How much of a problem has it been that your RAMP grants are considered to be taxable income?

Mr. BURNS. To date a large share of the RAMP contracts have been on public lands, and therefore not subject to the tax restraint.

With the Secretary of Agriculture's determination that the RAMP program payments are for purposes of restoring the environment, many of the landowners now are deciding to go ahead with the RAMP contracts. We are having no problems signing contracts because of the tax issue.

Mr. YATES. How much of RAMP projects fit into Priority One?

Mr. BURNS. Five hundred ninety-eight applications are in RAMP Priority One, out of 2,876 on hand.

COST-EFFECTIVENESS OF RESTORATION

Mr. YATES. In appraising your projects is any consideration given to the cost-effectiveness of the project?

Mr. BURNS. Yes, the cost-effectiveness of the solution is a part of the technical determination made when developing a reclamation plan. We also have provision for reducing the level of cost-sharing for the participant depending on the benefit derived.

Mr. YATES. Mr. Beasley, can you answer that question, too—how much consideration you give to the cost-effectiveness of your projects?

Mr. BEASLEY. The answer is the same. When we pick the appropriate remedial measure, we have to look at that. We are, however, going to look beyond that and attempt to develop a more cost-effective approach. Perhaps not doing the whole job, but say 80 percent, with nature taking over from there.

There are several approaches we are looking at now to expand the effectiveness.

SMALL OPERATOR ASSISTANCE

Mr. YATES. What are the major problems in getting significant numbers of applications for the Small Operator Assistance Program?

Mr. CLOSE. We are still having trouble getting an exact feel for why many operators don't apply. We have many reasons offered to us, but I wouldn't endorse any one of them as being the one sure reason. For example, many operators simply say they do not wish to accept what they regard as a Federal handout. Others fear the strings which are attached or may be attached to it. Some may not

have heard of it although we are making great efforts to get the word out.

Mr. YATES. Could you tell us how many applications have been received within the last three months?

Mr. CLOSE. I have a breakdown for the total period. We have approximately 600 applications. I can furnish for the record exactly how many.

[The information follows:]

SMALL OPERATOR ASSISTANCE PROGRAM APPLICATIONS

Question. How many applications for assistance have been received from small operators during the last three months.

Answer. In the SOAP, 138 applications have been received nationwide during the period December 31, 1980–March 31, 1981. At the end of December, applications received totaled 478. At the end of March 1981, the total stood at 616.

STATE SERVICES

Mr. YATES. What services do the states provide for the money they receive under the program?

Mr. CLOSE. The states are, in most cases at the present time, developing the small operator program which they are running as part of their permanent program. That involves setting up means of contacting laboratories to do the work, getting bids and contracts, identifying operators, and processing applications.

We make grants to states separately for the cost of the laboratory work.

EXECUTIVE DIRECTION

Mr. YATES. You are asking for a $500,000 increase for development of a program on information, namely a financial management system. How much is in the base for this system?

Mr. CULP. Mr. Chairman, at the present time, the Bureau of Mines provides our accounting support, including support to the fee collection program, and we are paying them, in fiscal year 1981 $1.8 million for that support service.

Mr. YATES. What will the costs be for developing the new system?

Mr. CULP. Approximately $1 million.

Mr. YATES. How about annual operating costs?

Mr. CULP. At this point, it is hard to be precise, but we don't think they will be any more than the current system costs.

Mr. YATES. Are you going to be able to handle the reduction from 233 to 186 in executive direction staff by attrition?

Mr. CULP. We expect to be able to do that; yes, sir.

Mr. YATES. Gentlemen and ladies, thank you very much.

We have some questions for the record, and Mr. Murtha has some additional questions, answers to which we will ask you to provide.

[The information follows:]

COMMITTEE QUESTIONS

Rural Abandoned Mine Program

Question: How does the Rural Abandoned Mine Program (RAMP) differ from the rest of the abandoned mine reclamation programs?

Answer: Like the Federal, State and Indian Lands Reclamation Programs, RAMP is authorized by Title IV of P.L. 95-87 and funded from the abandoned mine land fund. However, Section 406 charges the Secretary of Agriculture to enter into agreements of not more than 10 years with landowners and others "having control of the land for the period of the agreement to provide for the control and prevention of erosion and sediment damage from unreclaimed mined lands and to promote conservation and development of soil and water resources of unreclaimed mined lands and lands affected by mining."

RAMP has certain limitations the other programs do not:

- Participation must be voluntary;
- Land users must sign a 5- to 10-year contract based on a reclamation plan prepared by the land user with SCS technical assistance;
- Financial assistance is limited to 320 acres per landowner, and the amount received per acre is reduced if acreage exceeds 120 acres per landowner;
- Eligible acres are limited to abandoned coal mine lands only;
- Eligible uses of reclaimed acreage is limited to woodland, wildlife habitat, range, hay or pasture, cropland, non-commercial recreation land or natural area;
- Participants must make a declaration of financial burden; and
- Cost share rates are based on the amount of offsite benefits, financial burden on the participant, and income producing potential of the selected use of the reclaimed area.

Up to 20 percent of the funds accruing to the abandoned mine land fund annually may be transferred by the Secretary of the Interior to the Secretary of Agriculture to carry out the program. Funds must be appropriated.

Question: What progress have you made in reclaiming abandoned mine lands?

Answer: RAMP is operating in 20 of the 29 States with potentially eligible lands. The nine not participating do not have an application for assistance or have received only priority three

applications which are not being funded until priority one and two applications near completion. The following chart indicates program status as of 10/1/80 except as otherwise noted.

- Number of Applications Received --- Priority 1 - 598
  Priority 2 - 964
  Priority 3 - 1,314
  Total - 2,876

- Number of contracts signed --- 137

- Number of health and safety hazards eliminated --- 83

- Number of contracts ready pending additional funds as of 3/1/80 --- 60.

Question: (a) What funding is requested in FY 82 for the Rural Abandoned Mine Program? (b) What did SCS ask for?

Answer: (a) $4.3 million in new budget authority is requested for FY 82. (b) $30 million was the USDA budget request submitted to USDI.

Question: Is the amount proposed the full 20 percent of the funds collected in the trust fund?

Answer: No. Twenty percent would be approximately $40 million.

Question: (a) Could the balance of the 20 percent funds accumulating in the trust fund be appropriated to USDA-SCS this year and (b) if so could SCS use the full amount?

Answer: (a) The difference between a full 20 percent transfer of funds deposited in the trust fund through FY 1981 and the amount received by SCS to date is just over $100 million. These funds could be appropriated to SCS within the language of PL 95-87, Section 401(c)2, which states: "For use under Section 406, by the Secretary of Agriculture, of up to one-fifth of the money deposited in the fund annually and transferred by the Secretary of the Interior to the Secretary of Agriculture for such purposes."

(b) Existing personnel constraints would not permit the rapid adjustment required in staffing to effectively utilize the $100 million this year. It would require 272 staff years at the local field offices to efficiently utilize this amount if appropriated evenly over a 5- year period. Currently, SCS has 147 staff years assigned to RAMP. Within current personnel ceilings for SCS, the maximum amount which could be effectively utilized is $30 million in FY 1982. This would provide funding to handle modification and servicing of existing contracts and the preparation and funding of 93 new high priority contracts (6 percent of the remaining high priority applications) to eliminate 116 safety and health hazards.

Question: What can this subcommittee do to ensure that USDI will provide adequate emphasis to full funding of RAMP this year and in future years? Could funds be appropriated directly to USDA?

Answer: May we address the second part first? Because the wording in Section 401(c)2 of PL 95-87 states "... up to one-fifth of the money deposited in the fund annually and transferred by the Secretary of the Interior to the Secretary of Agriculture for such purposes," a direct appropriation would be questionable. However, appropriation language could be included to state the committee's desire for full funding, utilization of the $100 million accumulated funds, and/or address a specific amount to be transferred to the Secretary of Agriculture.

State Program Status

Question: Please bring the Committee up to date on the progress of the States in achieving primacy in operating their State programs

-- Specifically, would you please address the problems surrounding the eight States who are enjoined from resubmitting State programs.

-- When do you now expect to have approved State programs for the eight enjoined States?

-- Once the injunctions are lifted, how long will it take to get the State programs in place?

Answer: As of February 1, 1981, sixteen States had received full or conditional approval of their State programs. Under Section 503(d) of SMCRA, ten States have been enjoined from enforcing or resubmitting their programs. Oklahoma and West Virginia have received conditional approval of their programs, but each has been enjoined from enforcing its programs. Eight other States have been enjoined under Section 503(d) from resubmitting their programs after the initial decisions not to approve them.

A State normally has sixty days from the date the initial decision is published to resubmit its program for approval. After an injunction is lifted, a State will have between seven and sixty days to resubmit its program for approval, the exact number depending on how long after the initial decision the injunction was issued. The Secretary then will have an additional sixty days to review the program and render a final decision.

Once the injunctions are lifted and the State programs are resubmitted and approved, the programs will be effective on the date the Secretary's approval decision is published in the Federal Register. It will take as many as two years to have a program move through the transition from the interim to full implementation of the permanent program. Repermitting, however, is to be accomplished within eight months of approval.

A chart is attached detailing the pertinent dates and anticipated action for each of the enjoined States.

STATE	DATE	INITIAL/FINAL DECISION	COMMENTS	DATE INJUNCTION TO BE LIFTED (Approximate)	DATE PROGRAM TO BE EFFECTIVE (Approximate)
Alabama	10/16/80	Disapproval	503(d) injunction issued for one year on 11/20/80 to allow the State additional time to prepare its program.	7/1/81	10/1/81
Illinois	10/31/80	Partial Approval	503(d) injunction issued on 12/11/80 expires on 6/11/81. It is likely to be extended an additional six months to 12/11/81, although the State has been working on its program and a resubmission is possible.	12/11/81	3/1/82
Indiana	11/25/80	Partial Approval	503(d) injunction issued for one year on 7/26/80.	7/26/81	12/1/81
Kentucky	10/22/80	Partial Approval	503(d) injunction issued on 10/31/80 for an indefinite period.	10/31/81	3/1/82
Ohio	10/1/80	Disapproval	503(d) injunction issued for one year on 11/25/80.	11/25/81	2/1/82
Oklahoma	10/10/80 1/19/81	Partial Approval/ Cond. Approval	503(d) injunction issued for an indefinite period on 1/9/81. The Oklahoma legislature rescinded the State regulations on February 12, 1981. A hearing on the injunction scheduled for March 30, 1981, was cancelled and rescheduled for May 11, 1981.	No Later than 1/9/82	When injunction is lifted

STATE	DATE	INITIAL/FINAL DECISION	COMMENTS	DATE INJUNCTION TO BE LIFTED (Approximate)	DATE PROGRAM TO BE EFFECTIVE (Approximate)
Pennsylvania	10/22/80	Disapproval	503(d) injunction issued for one year on 11/26/80. The PA Department of Environmental Resources announced on 3/12/81 that it would appeal the injunction to the PA Supreme Court. It appears likely that the injunction might be lifted during the next several months, but an exact date cannot be predicted.	No Later than 11/26/81	3 months after the injunction is lifted
Tennessee	10/10/80	Partial Approval	503(d) injunction issued for an indefinite period on 12/5/80.	4/30/81	7/1/81
Virginia	10/22/80	Partial Approval	503(d) injunction issued for one year 12/3/80.	12/3/81	3/1/82
West Virginia	10/22/80 1/21/81	Partial Approval/ Cond. Approval	503(d) injunction issued on 2/13/81 is not likely to be lifted until its expiration date of 9/19/81.	9/19/81	9/18/81

The estimated dates when programs may become effective are "worst case" projections. The Department is working with these states to secure primacy as soon as possible. It is probable that many will assume primacy before the dates given.

Conditional Approvals of State Programs

Question: What progress are you making in moving from conditional approvals to unconditional approvals for the sixteen States who now have conditional primacy? When do you expect to have the conditions removed?

Answer: There are varying schedules for the thirteen States with conditional approval to meet the conditions specified in the Secretary's decision. A State usually has a longer time to make statutory changes than regulatory changes. Some of the States, including Wyoming, Arkansas and Missouri, have submitted changes to satisfy conditions. These changes currently are being reviewed by OSM and decisions on their adequacy will be made in the course of prescribed rulemaking procedures. Some statutory changes are not due until early 1983.

Recently OSM surveyed the thirteen States with conditional approval to ascertain which conditions the States might have difficulty in meeting by the specified deadlines. Based on the responses from seven of the States, the Secretary is proposing a rule to grant varying extensions to them. Some States indicated that they did not need extensions.

Matching Eligibility for Regulatory Grants

Question: Provide for the record a list of the States showing which States have 80%, 60% and 50% eligibility remaining for program grants and the years when the States will be eligible for these percentages.

Answer: The attached chart indicates by State the eligibility for matching percentages of funds for the current fiscal year and the next three fiscal years. These figures represent current projections and may change for some States depending on the actual date of permanent program approval and/or further program development grants.

For the first year of either a permanent program development grant or an administration and enforcement grant for an approved permanent program up to 80% Federal assistance of the total cost is provided, for the second year up to 60% Federal assistance is provided, and for any subsequent years up to 50% Federal assistance is provided. The two types of grants are linked for determining the fund ratio. That is, the matching percentage of Federal assistance through an administration and enforcement grant is reduced to the extent a State has received program development grants.

Cost Sharing Percentage Eligibility

STATE	FY 1981 1/	FY 1982	FY 1983	FY 1984
ALABAMA	*	80%	60%	50%
ALASKA 2/	80%-5 mos.	80%-7 mos. 60%-5 mos.	60%-7 mos. 50%-5 mos.	50%
ARKANSAS	80%-8 mos. 60%-1 mos.	60%-11 mos. 50%-1 mos.	50%	50%
COLORADO	50%	50%	50%	50%
ILLINOIS	*	80%	60%	50%
INDIANA	*	80%	60%	50%
IOWA	60%-8 mos.	60%-4 mos. 50%-8 mos.	50%	50%
KANSAS	60%-8 mos.	60%-4 mos. 50%-8 mos.	50%	50%
KENTUCKY	*	50%	50%	50%
LOUISIANA	60%-10 mos. 50%-2 mos.	50%	50%	50%
MARYLAND	60%-9 mos.	60%-3 mos. 50%-9 mos.	50%	50%
MISSISSIPPI	60%-11 mos. 50%-1 mos.	50%	50%	50%
MISSOURI	60%-10 mos.	60%-2 mos. 50%-10 mos.	50%	50%
MONTANA	50%	50%	50%	50%
NEW MEXICO	50%	50%	50%	50%
NORTH DAKOTA	50%	50%	50%	50%
OHIO	*	80%	60%	50%
OKLAHOMA	60%-8 mos.	60%-4 mos. 50%-8 mos.	50%	50%

1/ Figures based on date primacy achieved

2/ Assumes approval of program development grant

* Section 503(d) injunction; assumes that State obtains primacy at beginning of FY 82

Cost Sharing Percentage Eligibility

STATE	FY 1981	FY 1982	FY 1983	FY 1984
PENNSYLVANIA	*	80%	60%	50%
TENNESSEE	*	80%	60%	50%
TEXAS	60%-1 mos. 50%-11 mos.	50%	50%	50%
UTAH	60%-1 mos. 50%-7 mos.	50%	50%	50%
VIRGINIA	*	60%	50%	50%
WEST VIRGINIA	80%-8 mos.	80%-4 mos. 60%-8 mos.	60%-4 mos. 50%-8 mos.	50%
WYOMING	50%	50%	50%	50%

Permits Under Federal Programs

Question: From the January budget to the revised March budget, the permits processed go from ten to five for Federally administered State regulatory and exploratory programs. What has happened to bring about the revised workload? Do the new numbers reflect what you will be able to do or does it reflect what you anticipate the workload to be?

Answer: The projection was revised to reflect the latest information on the anticipated workload in the Federally administered State regulatory and exploratory programs. Under a complete Federal program, as is intended for Georgia and Washington, persons seeking to engage in surface coal mining and reclamation operations must submit an application and obtain a permit for those operations. For a Federal program covering coal exploration activities, as will be promulgated for Massachusetts, Rhode Island, Michigan and Oregon, any person who intends to conduct coal exploration only needs to apply and obtain the written approval of the Director of OSM.

The most recent estimate is that in Washington there are two active surface mining operations which will need to be permitted when the Federal program is promulgated. In Georgia there is one operator who wishes to obtain a permit and start surface mining operations and two others who have indicated they might seek to mine. No other interest has thus far been manifested in additional mining in each State. Modest coal exploration activities are anticipated in Massachusetts, Rhode Island, Michigan and Oregon. Thus, due to the limited extent of current and anticipated mining, the budget was revised to indicate a reduction in the number of permits to be processed.

Coordination with Other Agencies on Federal Land Activities

Question: Listed as a major element of the OSM Federal Lands Program in coordination with, and assistance to, the Bureau of Land Management and the U. S. Geological Survey on leasing functions. Please describe the nature and extent of the coordination and assistance to BLM and Geological Survey.

Answer: OSM's responsibilities under SMCRA are incorporated into the Department's Federal Coal Management Program. Responsibilities of BLM, USGS, and OSM are defined in a 3-way MOU entitled "Management of Federal Coal." Specific OSM responsibilities pertaining to Federal coal leasing are:

Land Use Planning Including Federal Coal Lands Review Process

a. Provide available data on lands being assessed as unacceptable for further consideration for coal leasing; as arranged, assist in inventorying potential coal development areas using the Secretary's unsuitability criteria, and assist in analyzing the data.

b. Furnish BLM available information, comments, and recommendations on Federal lands being assessed, using the Secretary's unsuitability criteria, within thirty (30) days of request unless another mutually acceptable time is established.

c. Participate in public meetings as requested.

d. Provide coordination to obtain consistency and compatibility between State and Federal procedures and criteria used to assess and designate lands unsuitable for surface coal mining.

e. Advise BLM of apparent discrepancies or inconsistencies between its Federal lands review process and both the State anf Federal petition processes.

Prelease Process (Activity Planning and Tract Selection Process)

a. Participated on tract delineation and regional coal terms.

b. Participate with BLM and GS in preparing a site specific EA and regional coal EIS, and in the preparation of lease stipulations.

c. Provide assistance in the preparation of EIS's as arranged.

d. Furnish available data and information to GS as requested on reclamation factors to be considered in determining a coal resource economic value.

Preference Right Lease Applications

a. Participate in field examination and development of an EA or EIS and lease stipulations.

b. Provide BLM with information, data and recommendations to assist in assessing reclaimability.

To date, OSM has provided BLM with adequate coordination on Federal coal leasing, but OSM has not provided technical assistance as fully as was intended. Past OSM priorities have emphasized approval of State programs and cooperative agreements, and the review and approval of mining and reclamation plans. As these activities are completed and the lead for review of mine plans is shifted to the States, OSM intends to fully meet its responsibilities. Consequently, OSM has nationally allocated $504,000 (7 percent of this budget activity) and 10 FTE (16 percent of the positions related to this budget activity) for this activity in FY 1982.

Indian Lands Program

Question: What is the status of the draft legislation which would enable the tribes to regulate coal mining and exploration on their own lands?

Answer: Draft legislation as required by Section 710 of the Surface Mining Control and Reclamation Act of 1977 has been prepared. An initial draft was made available for public comment. It was subsequently revised based on the comments received. A new draft incorporating the revisions is now being reviewed by the Department.

Inspection and Enforcement Support Personnel

Question: Between 40 and 45 percent of the Inspection and Enforcement staff are classified as program support personnel.

-- How do these people support the inspectors?

-- The ratio of program support personnel to inspectors increases from 40% to 45% from October 1980 to September 1982. At the same time Executive Direction and Administration increases from 16% to 22% of the manpower. Please explain to the Committee why the administrative and support staff ratio increases relative to the size of the inspection staff.

Answer: The types of direct support personnel and their functions are listed below:

Executive, Managerial and supervisory positions -	Fully responsible for the overall operation and effectiveness of the inspection, enforcement and assessment programs within their jurisdictions.

Staff Reclamation Specialist positions -	Guide inspectors in inspecting, reinspecting and field testing when special, technical problems exist on a minesite.
Enforcement Specialist positions -	Clarify enforcement policy, report on litigation setting forth new policy, provide expert direction in handling difficult enforcement matters in a State.
Assessment Conference Specialist and Assessor positions -	Submit decisions to I&E managers pertaining to the amount of an operators' penalty based on an inspector's record and oral statements.
Program Assistants secretarial, clerical positions -	Typing, recording, budgeting and filing responsibilities.

For 1982, the number of direct support positions will decrease by 80 and the number of allocated Executive Direction and Administration positions will decrease by 22. While these are very substantial reductions of 58% and 38% respectively, the ratio of support personnel to inspectors increases slightly as the question indicates. There are two primary reasons for this:

-- The enforcement workload resulting from an inspection often is not completed until a year or more after the inspection itself if an operator avails himself of the various administrative procedures available, i.e. a conference, an appeal to the Board of Hearings and Appeals, etc. Thus the enforcement staff will still be completing interim regulatory program work throughout Fiscal Year 1982 and in some cases into Fiscal Year 1983. Thus the number of assessors and conference officers, and their clerical support cannot be reduced immediately in proportion to the reduction in inspectors.

-- Support staff requirements, particularly the Executive Direction and Administration requirements, do not decrease in direct proportion to the program staff because many of these requirements are dictated by the existence of OSM as a bureau-level entity. For example, OSM needs a Director, Equal Opportunity Officer, Budget Officer, Regional Directors, etc. and these requirements do not decrease (or increase) in direct proportion to program changes.

State Monitoring

Question: How much of your resources will be devoted to monitoring State inspection and enforcement?

Answer: Approximately 72 percent of the requested budget and manpower is for monitoring State inspection and enforcement. This equates to $6.95 million and 116 positions including the appropriate

share of the executive direction and administration allocation. The remaining 28 percent of the resources will be devoted to citizen complaints, Indian lands programs, Federally-administered programs in Georgia and Washington, and meeting requests for assistance from the States.

Remanded and Suspended Regulations

Question: For the record, please provide a brief description of the permanent program regulations that have been rescinded or suspended.

Answer: The following describes the regulations remanded by District Court ruling and voluntarily suspended by OSM.

Subjects/Issues

Remanded:

- Require the State to use the same civil penalty point system as OSM.
- Requirement to obtain all permits prior to August 3, 1977.
- Definition of "mine plan area".
- Data requirements for fish and wildlife.
- Application requirements for soil surveys for lands other than prime farmlands.
- Citizen access to mine site before performance bond release.
- Bond forfeiture without refund for amounts not needed.
- Decrease in farm income as test is unlawful repeal of "small acreage" exemption from prohibition or interruption of farming.
- "No material damage" requirement should apply where exemptions apply.
- Regulations exceed authority by requiring actual grazing.
- Regulations unlawfully require that postmining land used for prime farmland must be cropland.
- Regulations improperly extend period of responsibility for revegetation.
- Letters of commitment required for alternative postmining land uses.
- Prime farmland requirements improperly applied to underground mining (upheld generally, but remanded to promulgate an exemption).

- Improper use of "high levels of management" in measuring restoration of prime farmland.

- Cross-sections, maps and plans for underground mining.

- Approximate original contour regulation must provide flexibility for settled files.

- Regulation on run off from reclaimed areas not supported by technical literature.

- Distance limitations for blasting.

- Air quality regulation.

- Road classification system.

- Provision for replacement of underground water supply.

- Authority to require notice of intent for exploration operations removing less than 250 tons.

- Postmining land use regulations do not allow restoration of land to condition before mining.

Suspended: - Limit on statutory exemption for operations of 2 acres or less.

- Exemption of existing structures from permanent enforcement standards.

- Definition of public road.

- Protection of places eligible for listing on the National Register.

- Definition of "irreparable harm".

- Exemption from revegetation requirements for a long term intensive.

- Bonding.

- Water quality.

- Use on non-toxic, non-combustible material for cover.

- Ecologic samplings of overburden on areas where facilities will be located without coal removal.

- Prime farmland grandfather clause.

- Underdrains.

- Monitoring of recharge capacities for underground mining areas.

- Most bulk density standard for soil compaction for prime farmlands.

Long-term Research Needs

Question: Please identify the longer term analytical needs that are addressed through the research activities of other agencies.

Answer: The Office of Surface Mining (OSM), participates in an annual formal research program analysis with several Federal agencies. The procedures for this review have effectively been implemented with the Bureau of Mines, U. S. Geological Survey and U. S. Fish and Wildlife Service. Research programs are exchanged and coordination between OSM and the Department of Energy, Environmental Protection Agency, Tennessee Valley Authority and Department of Agriculture, however, formal review procedures have not been detailed or implemented.

A partial listing of longer term research activities which assist in addressing OSM requirements and are undertaken by other Federal agencies follows:

a. Bureau of Mines:

(1) Blasting - Several projects are underway to develop technical data relating to the impact of mine blasting relative to ground vibrations, noise and air shock.

(2) Fugitive Dust Control - Evaluation of fugitive dust control measures.

(3) Coal Waste Disposal - Evaluation of coal waste stability problems, methods to prevent spontaneous combustion and acid water leachates.

(4) Subsidence Control - Development of improved techniques to place coal waste underground for subsidence control and to eliminate surface disposal.

(5) Mined Land Reclamation - Evaluation of overburden handling practices and equipment to effectively achieve post-mining land use needs in an economical manner and to evaluate alternative practices.

b. U. S. Geological Survey:

(1) Hydrologic Studies - Evaluate the impact that mining experts on the surface and groundwater resources in the various geographic regions and to assist in the identification of improved mining procedures to minimize this impact.

(2) Hydrologic Data - Collect and assemble water resource data to assist OSM, State regulatory agencies and industry in determining the hydrologic consequences of mining.

(3) Overburden and Coal Analysis - Preliminary research program has been sketched to formulate a comprehensive 5 year investigation to develop data and geological parameters for identifying rock formations containing high concentrations of hazardous elements.

(4) Mapping - Provide up-dating of maps as identified by OSM for inspection and enforcement activities and assist in developing training material and instructions for inspectors.

c. U. S. Fish and Wildlife Service:

(1) Biological Impact - Support study efforts to develop criteria and data relating to the impact on mining of the aquatic and terrestrial biological community and their environment.

(2) Biological Enhancement - Demonstrate alternative reclamation practices whereby industry may economically reclaim mined lands.

Abandoned Mine Reclamation Fund

Question: The effort to reclaim abandoned mines now has many players, including the States, the Soil Conservation Service, the Department of Energy, the Bureau of Mines and the Office of Surface Mining. Since you are the funnel through which most of the reclamation funds flow, please explain to the Committee why it is necessary to have so many groups involved.

Answer: The majority of the reclamation effort will be by the States/tribes. The Office of Surface Mining will concentrate on reclamation projects that will not be undertaken by a State or tribe. Emergency reclamation projects, multi-State projects, R and D Projects and high priority projects in States without an approved program (Washington, Georgia, Michigan, Rhode Island, California, etc.) are examples of such projects. The Office of Surface Mining will continue to utilize, when appropriate, expertise found in other Federal agencies. The Soil Conservation Service fulfills the specialized need to promote the conservation of rural lands. This is accomplished through a cost-sharing program with individual land owners.

Question: Given this level of unappropriated receipts (424 million estimated by the end of Fiscal Year 1981), why does the Administration not move at a faster rate to take care of the problems that we know exist?

Answer: It is anticipated that the State programs will be the primary delivery vehicle for needed reclamation work, with direct Federal reclamation limited to those projects where Federal agencies have unique jurisdiction, capabilities, and authorities e.g. multi-State projects, R&D projects, emergency projects, projects in States without approved programs, and cost-sharing projects under the rural lands program. Most of the unappropriated balance ($286 million) is State program entitlement funds which the States are not eligible to receive until their regulatory and reclamation programs are approved.

Question: In the States' permanent program, what standards must the States follow to administer the reclamation grants?

Answer: The States must abide by Titles IV and V of the Surface Mining Control and Reclamation Act of 1977; OMB Circular No. A-102 Revised - Uniform Administrative Requirements for Grants-in-Aid to State and Local Governments; Abandoned Mine Land Reclamation Program Implementing Rules; the State Plan; and OMB Circular No. A-87 Revised - Cost Principles for State and Local Governments.

Question: For the record, please provide the staff resources each State currently has and plans to have in FY 1982 to operate the State reclamation grants. Also, provide an estimate of what percent of the State reclamation grants will be for administrative costs.

Answer:

State	Staffing		Adm. Costs Percentage 1/
Region I	1981	1982	
Maryland	1	3	7%
Pennsylvania	8	45	25%
Virginia	15	27-33	16%
W. Virginia	10	20	5%
Region II			
Alabama	14	32	15%
Kentucky	36	60	10%
Tennessee	9	18	25%

1/ It should be noted that States have no cost experience for working under an Abandoned Mine Lands Grant; therefore, administrative cost percents are best estimates.

State	Staffing 1981	Staffing 1982	Adm. Costs Percentage
Region III			
Illinois	6	16	10%
Indiana	29	40-63	10%
Ohio	8	16-20	10%
Region IV			
Arkansas	1.5	3	75% 2/
Iowa	-0-	1.5	30%
Kansas	-0-	1.5	30%
Missouri	4	6	20%
Oklahoma	2	5	20%
Texas	1.5	4	15%
Region V			
Colorado	4	8	45%
Crow Tribe	5	5	50%
Hopi Tribe	5	5	45%
Montana	2	2-3	37%
Navajo	-0-	5	52%
New Mexico	10	10	35%
North Dakota	5	3-5	14%
Utah	-0-	3	35%
Wyoming	3	3-5	13%

Question: You mention in the justifications new mechanisms for coordinating States, Interior and RAMP program you plan to develop and implement in Fiscal Year 1982. What are these mechanisms?

Answer: Actions are being taken to insure that OSM, RAMP and the States take a more positive role in the State reclamation coordinating committees. A project tracking system is operational for all Interior projects currently underway and identified. We propose to use the system to incorporate RAMP and State projects into this tracking system in Fiscal Year 1982. Information from the tracking system and the National AML Inventory will be utilized by the committees to formulate program plans and agreements to assure a coordinated reclamation effort.

Question: For the record, please tell the Committee what the $300,000 increase for enhancement of the fee collection system is.

Answer: We want to make certain that we are maximizing the collections with our current staff. To accomplish this we anticipate contracting for the development of programs to help us select and prioritize our compliance review activities and to refine

2/ The high administrative cost for Arkansas is due to the small amount of funds available, approximately $200,000, coupled with first year start up costs.

our compliance check procedures. As a part of this process we anticipate making several improvements to the existing fee collection data system which is operated for OSM by the Bureau of Mines under an interagency agreement. The current fee collection system was hastily developed in 1977 to meet the immediate basic recordkeeping requirements. It lacks many refinements needed to maximize collections; for example, a timely automated billing process, and routines for using company history to identify possible compliance problems. The increase is entirely for procedural and systems improvements to be developed under OSM and BOM contracts.

Question: For Fiscal Year 1981, you indicate that all available resources have already been committed. With State reclamation grant money sitting unused, why have you not requested a supplemental or come to the Committee for reprogramming?

-- Do you have plans to come forward with a reprogramming?

-- How would you take care of an emergency situation that may arise?

Answer: The Department is currently considering reprogramming a portion of the anticipated State grant funds that will be unused in FY 81 to Interior and RAMP projects. This reprogramming would allow OSM to carry out emergency projects and fund those extremely dangerous projects that are evaluated and awaiting funding. Section 102 of the General Provisions provides an altenative for financing emergency projects which may arise. Under this alternative, unobligated funds in other activities may be utilized for emergency projects only.

Question: Initial progress in getting the Federal reclamation program started was slower than anticipated "because of under-estimating the time between project identification and initiation and delays in OSM staffing."

-- Please tell the Committee what you have done to alleviate these initial problems, and

-- How long does it take between project identification and initiation?

Answer: The initial problems in getting the Federal reclamation program started have been alleviated by the following measures:

1) The authorized staff has been hired;

2) Project selection criteria, selection procedures, and personnel assignments for the selections have been formalized; and

3) OSM personnel now have the required experience to expedite the initiation of projects.

Reclamation projects are identified and proposed for funding within a time frame of three to six months. Emergency reclamation projects are exceptions that receive immediate response.

Question: You have initiated a number of cooperative agreements with the States.

-- Explain to the Committee how those cooperative agreements work.

-- Why have you chosen to use the cooperative agreements so extensively?

-- Have you used the States as a delivery mechanism because your staff resources have been minimal?

-- Why have there been no cooperative agreements with Indiana?

Answer: Cooperative agreements are legal instruments reflecting a relationship between the Federal Government (OSM) and a State or local government. They are drawn for the purpose of transferring money, property, or services to State or local government to accomplish a Federal purpose or need. Letters-of-Credit are generally issued by the United States Treasury to the State or local government, who, in turn, usually contract with private organizations or individuals for goods and services to accomplish the intent of the agreement. Cooperative agreements are administered within OSM in accordance with procedures prescribed in the Office of Management and Budget Circular A-102.

OSM has elected to use cooperative agreements extensively so that the States can obtain experience in carrying out abandoned mine lands reclamation projects. This will prepare them to more effectively initiate their State reclamation grant programs when they receive approval of the State reclamation program. It is also true that OSM could not have proceeded with all of the projects currently underway without the assistance of State personnel to develop project proposals, because OSM did not have adequate staff without assistance from the States.

Indiana has elected not to enter into cooperative agreements with OSM for abandoned mine land reclamation projects because they have a legal suit against OSM on the regulatory program, and they believe that entering into such agreements might jeopardize their position under this litigation.

Question: Since you have not requested a separate appropriation from the reclamation fund for the Bureau of Mines, what role do you envision for the Bureau of Mines in FY 1982? Will the OSM/BOM agreement initiated this year remain in effect in FY 1982? What authorities do you have that are not available to the Bureau of Mines? To what extent has your staff come from the Bureau of Mines?

Answer: OSM anticipates that the Bureau of Mines (BOM) will continue administering reclamation projects initiated in Fiscal Year 1981 utilizing funds from the sixteen million dollar passthrough appropriation. Many of the Fiscal Year 1981 projects are just now beginning; most are long term, high cost activities, requiring a multi-year time frame. We also anticipate adding additional projects in Fiscal Year 1982 commensurate with full utilization of the project management resources of the Bureau.

a. The OSM/BOM Fiscal Year 1981 Cooperative Agreement currently covers projects utilizing the Fiscal Year 1981 appropriated monies. The agreement is expected to be amended and to remain in effect as new projects are added in Fiscal Year 1982.

b. The authorities exercised by OSM that are unavailable to BOM, briefly stated, are:

Immediate response to emergency reclamation field conditions, grants management, realty and appraisal, fee collection, corporate auditing, and civil and criminal enforcement activities regarding abandoned mine lands reclamation.

c. The nationwide Abandoned Mine Lands staff is a multi-discipline group of specialists with background in several Federal agencies and the private sector. Approximately 18% of the OSM staff had prior experience conducting reclamation activities for the Bureau of Mines.

Rural Abandoned Mine Program

Question: For each $110,000 of the RAMP program, the Soil Conservation Service (SCS) has one staff person. Why is it necessary to have this ratio in SCS when you use $1.5 million per position ratio for the States?

Answer: For the State programs, the technical work leading to the actual physical reclamation is handled through grants from OSM and is considered part of the financial assistance costs. The same technical work in RAMP is handled by SCS staff and is considered as technical assistance costs. This results in a higher ratio of staff per unit of funding in SCS but is offset by lower contract costs to reclaim a specified area. Due to the different program administration procedures, staff per unit funding does not provide an accurate comparison.

Administration procedures for RAMP are dictated by program design. RAMP was established as a separate abandoned mine land reclamation program by PL 95-87 to assist, primarily, the small rural landowners reclaimed abandoned coal mined lands on their property. The program was designated to be administered by USDA-SCS because SCS has an established, effective system of delivering technical and financial assistance to this group of eligible participants in every county of the United States where abandoned lands occur. Included in this system is technical expertise and 40 years of experience in reclamation of lands disturbed by mining.

To effectively utilize this delivery system, the law provided several operational details for RAMP that were not specified for the State grant programs administered by OSM. Therefore, OSM can provide grants to States or for individual contracts for all phases of the reclamation work on a site. This requires only staff to evaluate and approve State programs and manage grants. As stated above, SCS utilizes their internal staff structure and expertise to carry out all the necessary activities except the actual physical construction and reclamation onsite. This includes establishing eligibility and priorities on all applications received (2,876) to determine order of funding, planning the total reclamation package, reclamation specifications, contracting for reclamation, quality control of construction, and certifying completion.

Question: In the past, some potential recipients of RAMP grants have not accepted them because the grants have been considered taxable income.

(a) How much of a problem has this been?

(b) What efforts are underway to solve this problem?

(c) Please describe the type of projects RAMP has been funding?

(d) What portion of RAMP projects fit into priority 1?

Answer: (a) The problem you refer to is that IRS considers all payments made for reclamation of private abandoned coal mined lands as gross income to the landowner whether payments are made to the landowner or not. This situation has been explained to all 2,876 applicants so that they may determine whether they prefer to undertake a reclamation contract or not. In past years, this has been a problem for many potential participants. However, due to the activity described in part (b) below, this is no longer a limiting factor for RAMP. The demands for assistance now far exceed funding available for RAMP reclamation in FIscal Year 1981. As no additional contract funds are proposed for RAMP in Fiscal Year 1982, the backlog of contracts ready to be signed as funds are available cannot be reduced.

(b) Section 543 of the Revenue Act of 1978 (Public Law 95-600) amended the Internal Revenue Code of 1954 to provide that certain payments, or portions thereof, received through Federal or nonfederal programs can be excluded from gross income for Federal

tax purposes. These exclusions apply to the extent that the Secretary of Agriculture determines the payments, or portions thereof, are made primarily for the purpose of conserving soil and water resources, protecting or restoring the environment, and other specified uses, to the extent that the Secretary of Treasury determines that the payments do not increase substantially the annual income derived from the property associated with the payments. RAMP was one of the programs specifically mentioned in the amendment.

Agriculture has published a determination that the RAMP payments are primarily for the purpose of protecting and restoring the environment. However, Treasury has not published the rules setting forth the criteria for determining a "substantial increase in annual income." At this time, they are pending final review and signoff in the Office of the Secretary of the Treasury and should be published soon.

(c) RAMP has funded basically the same type of reclamation as OSM. They are high priority extreme or imminent danger applications existing within the 20 States participating. A reclamation committee consisting of SCS, OSM, State reclamation authorities, and others interested in reclamation, assist in determining the order of contracts for funding. This is a very selective process to assure funds are used for the most critical problems first. Typical reclamation being funded is sealing of open shafts or tunnels in close proximity to people; elimination of hazardous highwalls; safe containment or removal of hazardous wastes and structures; correcting subsidence problems resulting in destruction of property and creating public health and safety hazards; and abating contamination of public water supplies. The above mentioned problems account for over 50 percent of the applications on hand (2,876). By the end of Fiscal Year 1981, approximately 191 will have been funded.

(d) Essentially, all of the contracts are priority one except in States that do not have priority one applications but do have priority two, imminent danger to life and public health safety and welfare, applications. As of October 1, 1980, 103 of the 137 projects signed were priority one. The priority two sites funded are the most critical ones and hard to distinguish from priority one work. SCS has evaluated and assigned a priority to 2,876 applications. Under the criteria established, 21 percent (598) were categorized as priority one, 34 percent or 964 were assigned a priority two rating.

Approaches to Increasing Reclamation Program Benefits

Question: Several ideas for increasing the public benefit of Abandoned Mine Land expenditures have been discussed. Among these ideas are (1) shared costs of reclamation for operators remining previously mined areas: (2) change in land use as an alternative to reclamation; and (3) increasing the fund by sale of acquired reclaimed land.

Answer: (1) Remining of abandoned mine lands now occurs only when a mine operator finds that the value of recoverable coal exceeds the cost of reclaiming the abandoned mine. OSM could encourage more

mining of abandoned mine land by defraying part of the costs of reclamation and thereby make mining of abandoned mine lands economically feasible for a mine operator. The result could be increased reclamation and resource recovery at reduced costs. The major obstacle to adopting a policy of encouraging this type of mining is Section 403 of the Act, which gives highest priority to protection of public health, safety, general welfare, and property from extreme danger from adverse effects of coal mining practices. To the extent that mining of abandoned mine lands is feasible as part of priority reclamation projects, the office can encourage it. The OSM presently has sufficient authority to implement this policy of encouraging mining of abandoned mine lands.

(2) The public benefit from reclamation could be increased by policies which systematically determine the multiple use needs which could be satisfied by reclaiming abandoned mine lands. The minimum level of reclamation required to convert abandoned mine land to land uses which are in high demand could be established. A system could be devised to determine land uses, in keeping with the objectives of the Act, which could better serve public need by reclaiming to a level short of return to pre-mining conditions. By determining the land use needs of a community, reclamation funds may be saved by avoiding complete reclamation. These funds could then be used for reclamation of other lands. The present law does not prevent adoption of more specific policies on post-reclamation land use.

(3) P.L. 95-87 expresses a policy in Section 407, which is implemented in 30 CFR 879, that restricts acquisition or condemnation of real property so that use of the AML Fund will give priority to reclaiming lands rather than acquiring lands. Lands can be acquired under Section 407 of the Act if the Secretary or the State, pursuant to an approved State Program, determines that land acquisition is necessary to successful reclamation and will serve recreation and historic purposes, or provide open space benefits. Where such acquired land is deemed suitable for industrial, commercial, residential, or recreational development, Section 407 permits sale under a system of competitive bidding at no less than market value. Money received from such sales is deposited in the AML Fund and can be used for reclamation of other lands. To encourage land acquisition for the purpose of resale to make a profit that can be used for further reclamation would require re-interpretation of present OSM policy and possible amendment of 30 CFR 879 and Section 407 of the Act. While the idea is theoretically feasible it runs counter to present Interior Department policy of restricting land acquisitions. Moreover, there is presently no barrier to private interests acquiring abandoned mine lands, reclaiming them, and reselling them at a profit.

Executive Direction and Administration

Question: Provide for the record the formula you use to distribute executive direction and administration costs to the various programs.

Answer: The formula is based on the assumption that executive direction and administration expenses support the mission activities in proportion to the numbers of personnel in the mission activities

and the dollar magnitude of those activities. Personnel and dollars are given equal weight. Mission activities which do not finance OSM personnel are excluded from the distribution. For Fiscal Year 1982 the formula was initially developed for the Carter budget, and then modified by a separate calculation for the changes in the Reagan budget. The following table shows the calculation in percents.

Financing Activities	% of Mission Dollar	% of Mission Personnel	Average Percent	Assesments (000's)
		CARTER BUDGET		
State & Federal Programs	20.0	26.1	23.1	3,673
Inspection and Enforcement	17.6	27.0	22.3	3,546
Technical Services	8.5	14.0	11.2	1,781
Mineral Institutes 1/	.4	1.1	.8	127
Fund Management	7.5	16.2	11.8	1,876
Interior Projects	44.2	12.5	28.4	4,515
AML Technical Support	1.8	3.1	2.4	382
Total	100.0	100.0	100.0	15,900
		Reagan Modification (Reductions)		
State & Federal Programs	12.5	11.5	12.0	-152
Inspection and Enforcement	31.7	61.5	46.6	-593
Technical Services	6.5	11.5	9.0	-295 2/
Mineral Institutes	N/A	N/A	N/A	-127

1/ OSM administration component only

2/ Includes an adjustment of $180,000 to shift financing for technical publications from Executive Direction and Administration to Technical Services.

Financing Activities	% of Mission Dollar	% of Mission Personnel	Average Percent	Assesments (000's)
	Reagan Modification (Reductions)			
Fund Management	---	---	---	---
Interior Projects	49.3	15.5	32.4	-413
AML Technical Support	---	---	---	---
Total	100.0	100.0	100.0	1,580
Revised request				14,320 3/

Question: Provide the Committee with the staffing levels and budgeted amounts for the Office of Equal Employment Opportunity, Public Affairs, and Congressional Affairs for both FY 1981 and FY 1982.

Answer: The budget levels for these units are as follows:

	Fiscal Year 1981		Fiscal Year 1982	
	Staff	$	Staff	$
EEO 1/	10	$410,000	8	$330,000
Congressional Liaison	2	80,000	3	130,000
Public Affairs 1/	9	400,000	10	450,000
TOTAL	21	$890,000	21	$910,000

Question: There is a $500,000 increase to finance the transfer of approximately 35 personnel to meet the needs to consolidate functions and geographic locations.

-- What functions are being consolidated? Why?

-- What field sites are being elimiated? Why?

-- When do you expect these changes to take place?

-- For the record, please provide an object class distribution of the $500,000 increase?

Answer: Plans to consolidate functions and eliminate some offices are presently being formulated. Currently OSM has five regional offices. Maintaining this number of field locations will not be

1/ Includes Headquarters and Regional Office Personnel.
3/ The estimate by activity in the revised budget is the result of subtracting the effect of the Reagan modification from the Carter budget estimates.

efficient or economic with the reduced staff projected for State primacy. Most options currently being considered would reduce the total number of field locations to 15 to 20. We are also considering alternatives for internal realignments within offices to better reflect the changing mission under State primacy. Because a wide range of options are being considered it would be premature to speculate on which specific offices will be eliminated. When the planning process is completed, OSM will promptly advise the Committee of the specific actions to be taken. The changes are expected to occur at the beginning of Fiscal Year 1982.

The object class breakdown for the employee transfer request is:

Personnel Benefits	310,000
Travel	120,000
Transportation of things	70,000
Total	$500,000

Question: Since the Federal involvement in the administration of the program changes significantly as the States achieve regulatory primacy, what are your plans to reorganize the agency?

Answer: OSM is working on reorganization plans to submit to the Secretary in May. We will promptly advise the Committee of these plans when they are completed. Also please see the answer to the previous question.

Questions from Mr. Murtha
Acid Mine Drainage Cooperative Projects

Question: Since the acid mine drainage abatement program is now in OSM jurisdiction and the Corps of Engineers has the expertise in this area, would OSM be willing to work in a dual agency program with the Corps of Engineers to complete projects such as the Clarion River Basin Acid Mine Drainage Abatement Program?

Answer: OSM is willing to work with the Corps of Engineers on the Clarion River Basin Program and in other similar project areas. Before being funded, each reclamation project must be evaluated and ranked according to the priorities mandated by the Surface Mining Control and Reclamation Act.

Rural Abandoned Mine Program

Question: Although the Rural Abandoned Mine Program (RAMP) is run by the Soil Conservation Services, what role does OSM play in the planning of the RAMP?

Answer: OSM has three primary roles. First, RAMP program development was closely coordinated with OSM as the Section 406 abandoned mine reclamation rules and regulations were promulgated. RAMP has rules and regulations for its operation, but these are to

be compatable with Part 874, 30 CFR Chapter VII of OSM rules and regulations which cover the general reclamation trust funds. Therefore, SCS submits their budget requests as a part of the OSM package. Last, SCS is accountable to OSM for these funds. SCS provides information on the accomplishments of expenditures and other data to satisfy this accountability.

In the field, RAMP has established a State reclamation committee in each State. SCS utilizes this committee to help verify application priorities, funding, order of RAMP contracts and to determine which abandoned mine reclamation program can most effectively handle a specific type of job. This committee consists of representatives from OSM, State reclamation agencies, SCS, and others interested in reclamation within the State.

Question: It is our understanding that in my Congressional District alone there are 65 applications that have been received, and over $3.1 million worth of projects are in the planning process. Why has money been deleted from the Fiscal Year 1982 program, when this is not tax revenue, rather it is money collected from fees that are collected for the abandoned mine reclamation fund. It is my understanding that the fund is building up at the rate of $200 million per year -- if this is so, why did the Department of the Interior delete $10.28 million from the RAMP in Fiscal Year 1982 budget request?

Answer: The request was reduced from $10.3 million to $4.3 million in President Reagan's revisions to President Carter's budget. This was one of the changes made as part of the Economic Recovery Program effort. Unappropriated monies in the fund remain available for appropriation and obligation in future years.

Question: Could we have a complete and detailed report on SCS operation and function in RAMP since its beginning?

Answer: The requested report follows:

General

RAMP is authorized by Section 406 of the Surface Mining Control and Reclamation Act (SMCRA) for the purpose of reclaiming the soil and water resources of rural lands adversely affected by past coal mining practices. The program is administered by the U. S. Department of Agriculture (USDA), Soil Conservation Service (SCS), and may use up to one-fifth (20 percent) of the money deposited in the Abandoned Mine Reclamation Fund. Total appropriations made available to RAMP since the beginning of the program total $25.2 million or 5 percent of available funds of which $14.5 million were available for use during Fiscal Year 1980.

The program provides technical and financial assistance to land users who voluntarily enter into 5- to 10-year contracts for the reclamation of up to 320 acres of eligible abandoned coal-mined lands

and waters. A reclamation plan is required for financial assistance under the program. The plan is prepared by the land user with SCS technical assistance and sets forth the objectives, type, and amount of reclamation required.

RAMP Operations

A total of 2,876 program applications involving 91,000 acres of eligible abandoned lands has been submitted to SCS by land users within 20 States. All of these applications have been processed and assigned a priority for assistance: 596 are classified as priority one, 964 are classified as priority two, and 1,314 are classified as priority three. Approximately 18 of these applications were referred to the Office of Surface Mining (OSM) for reclamation under the emergency provisions of the Federal program. SCS is also provided technical assistance under a cooperative agreement with OSM to implement an $850,000 contract in Kansas.

To date, SCS has signed a total of 137 contracts for the reclamation of 2,899 acres, which obligated $14.8 million. Of this amount, 74 contracts totaling $8.0 million were signed in Fiscal Year 1980. Technical and financial assistance in Fiscal Year 1980 used approximately 93 percent of the available funds. Reclamation is completed or underway on 57 of the contracts and 843 acres have been reclaimed. The reclamation has eliminated 83 health and safety hazards, improved water quality or visual quality on 462 acres, and provided wildlife habitat on 163 acres. Costs of reclamation average $107,836 per contract exclusive of the technical assistance required.

The determination that payments under RAMP are made for the purpose of protecting or restoring the environment was issued by USDA on 1/2/81. This is step one of a two step process that will aid taxpayers in identifying the amount of cost-share payments that may be excluded from gross income. The Internal Revenue Service is responsible for establishing criteria for determining the amount of the exemption (step two). These regulations should become available in Fiscal Year 1981. Many land users have in past years been reluctant to sign program contracts until the income tax status of Federal cost-share payments is fully determined. However, this trend is not changing. A large number are proceeding with contracts after discussing the tax law amendment with their tax consultants.

A table summarizing program progress by State is enclosed.

	No. by Priority 1	2	3	Total No.	Acres	Total No.	Acres	No. FY 1980	Dollars 1/ Obligated FY 1980	Acres Reclaimed	No. Hazards Eliminated
Alabama	19	5	39	63	793	13	268	10	859,782	0	0
Arkansas	15	40	21	76	2,256	6	65	1	(427,493)	0	0
Illinois	14	110	113	237	16,286	4	32	2	52,152	0	0
Indiana	50	26	52	128	2,921	7	198	4	106,618	128	6
Iowa	19	64	196	279	8,463	8	208	4	850,605	102	9
Kansas	1	8	70	79	4,160	0	0	0	0	0	0
Kentucky	47	145	99	291	5,858	8	300	1	175,776	57	1
Maryland	4	9	16	29	353	3	33	3	475,000	13	4
Missouri	1	20	47	68	5,402	3	200	0	0	0	1
Montana	1	9	1	11	910	0	0	0	0	0	0
North Dakota	19	38	6	63	1,884	1	80	1	57,382	12	1
Ohio	24	107	355	486	17,087	20	166	14	1,008,973	67	4
Oklahoma	15	17	3	35	1,787	3	208	3	452,988	0	0
Pennsylvania	290	253	151	694	13,621	22	329	15	2,510,180	67	32
South Dakota	0	3	2	5	235	2	55	2	246,372	0	0
Tennessee	0	9	11	20	930	12	79	3	102,000	37	7
Texas	0	24	2	26	727	15	484	8	396,825	341	14
Virginia	2	2	7	11	90	0	0	0	0	0	0
West Virginia	68	75	121	264	7,000 2/	5	34	0	57,423	7	3
Wymoing	9	0	2	11	220	5	160	3	1,055,310	12	1
Total	598	964	1,314	2,876	90,983	137	2,899	74	7,979,893	843	83

1/ Financial Assistance including $221,000 for modifications of 1979 contracts exclusive of technical assistance.

2/ Estimated

Mineral Institutes

Question: Can you furnish for the record the status and the progress of the mining and mineral resources research institute program? In your opinion, what would be the cost effective funding level and capability of this program in Fiscal Year 1982.

Answer: Since the initiation of the program in Fiscal Year 1978, 31 universities in as many States have been designated as Mineral Institutes. With the allotment fund grants of $100,000 per year per institute, the schools have purchased needed equipment, hired additional faculty and initiated research work which in many cases has been augmented by additional grants from industry. With scholarship and fellowship grants awarded at the annual rate of $54,000 per institute, the schools had awarded 297 undergraduate scholarships, 150 graduate fellowships and 15 post-doctoral fellowhips through Fiscal Year 1980. A total of 134 research grant awards for $8.0 million were made in Fiscal Years 1979 and 1980. These competitive grants have addressed solutions to problems in the areas of exploration; extraction; processing; development; mining and mineral technology; supply and demand; conservation and best use; economic, legal and social aspects of mining; reclamation; and mineral research.

The Mineral Institutes were one of several programs and activities of the Department which were reduced or discontinued as part of the Economic Recovery Program because the programs are not uniquely Federal and the States and /or industry can assume responsibility. OSM supports this position. Disregarding Economic Recovery Program priorities, a minimum cost effective level for the 31 institutes program would be $6.0 million consisting of allotment grants at $110,000 per institute ($3.4 million total), $1.1 million for fellowship grants (undergraduate scholarships would be discontinued), $1.2 million for continuation of research projects initiated in prior years and $300,000 for program administration. A minimum program containing new research starts would require an additional $2.5 million or $8.5 million total.

College and University Research Support

Question: For the record, please provide a summary of Bureau of Mines, Department of Energy, and Environmental Protection Agency support of colleges and universities in the minerals field.

Answer: The following summaries describe DOE's, EPA's and the Bureau's support of college and university research in the minerals field.

CONTRACTS AND GRANTS TO COLLEGES AND UNIVERSITIES

Bureau of Mines
FY 1978 - 1982

The attached summaries show obligations for grant and contracts, by college and university by major Bureau programs for fiscal years 1978, 1979, 1980, and 1981 through March 24, 1981. Estimated obligations by program for the remainder of fiscal year 1981 are included also. For fiscal year 1982 under the Reagan Administration proposed budget, estimated obligations for contracts to colleges and universities are as follows:

Program	1982 Est. Obligations
Minerals Health & Safety Technology	$3,000,000
Minerals Environmental Technology	1,400,000
Mineral Resources Technology	600,000
Minerals Information	200,000
Total	$5,200,000

The Bureau discontinued the awarding of grants during fiscal year 1979 as a result of passage of P.L. 95-224. Under the definitions provided for in this law, Bureau sponsored projects undertaken by colleges and universities fit the criteria for contracts, rather than grants.

The Bureau does not let grants to anyone, including the 31 Mineral Institutes designated by the Office of Surface Mining. The Bureau does let contracts to many of the universities and colleges that have been designated as Mineral Institutes, however. In many instances, Bureau contracting relationships predated the designation of a particular institution as a Mineral Institute. The fiscal year 1980 contract summary included in this package identifies those institutions that have been designated as Mineral Institutes by the OSM.

Bureau of Mines
Contracts to Colleges and Universities 1/
FY 1981 Estimate

College/University	Minerals Research: Minerals Health & Safety Technology	Minerals Research: Minerals Environmental Technology	Minerals Research: Mineral Resources Technology	Minerals Information	Total
Carnegie-Mellon University	$ 200,000	$ --	$ --	$ --	$ 200,000
Colorado School of Mines *	--	--	68,882	--	68,882
John Hopkins University	--	--	--	110,058	110,058
Michigan Technological University*	33,028	42,598	--	--	75,626
Morehouse College	--	--	29,480	--	29,480
New York University	3,401	--	--	--	3,401
Pennsylvania State University*	114,790	--	--	--	114,790
Queens College	--	--	--	9,975	9,975
Spelman College	--	27,233	--	--	27,233
South Dakota School of Mines and Technology *	--	--	38,385	--	38,385
Texas Technological University	227,312	--	--	--	227,312
University of California *	--	106,301	39,270	--	145,571
University of Massachusetts	15,000	--	--	--	15,000
University of Nevada *	--	94,116	--	--	94,116
University of Oklahoma *	63,887	--	--	--	63,887
University of Pittsburgh	21,429	--	2,128	--	23,557
University of Texas *	--	89,015	--	--	89,015
University of Utah *	--	54,236	--	--	54,236
University of Washington*	--	94,707	--	--	94,707
University of Wisconsin	--	--	77,291	--	77,291
Virginia Polytechnic Institute *	--	51,753	--	--	51,753
West Virginia University*	107,411	--	--	--	107,411
Total thru 3/24/81	786,258	559,959	255,436	120,033	1,721,686
Estimated, 3/25 - 9/30/81	1,213,742	840,041	344,564	79,967	3,478,314
Total FY 1981 estimate	3,000,000	1,400,000	600,000	200,000	5,200,000

1/ Includes an estimated $100,000 for close-out grants to colleges and universities.

* Mineral Institutes (12)

U.S. Environmental Protection Agency

1. The objective of the mining/minerals research program is to assess, develop, identify, and verify control technology for extraction of non-renewable energy resources which will assure that the recovery of the nation's fuel reserves is conducted in an environmentally acceptable manner. To this end, research continues on equipment, extraction methods, and pollution control technology to prevent, control, and abate the discharge of environmental pollutants from both point and nonpoint sources. Pollution sources under consideration include facilities for exploration and extraction of coal, uranium, oil shale, oil and gas.

2. Total dollars for FY '81 - $3,270,700.
   Total dollars for FY '82 - $3,037,000.

3. Projects in colleges/universities

   - University of Wyoming - Bioassay of oil shale mine water. $30,000.
   - Tennessee Technological University - Analysis of Tennessee oil shale and overburden. Planned for FY '81 - $20,000.
   - Montana State Consortium - Evaluation of surface and groundwater at potential strip mine sites. Phase two. - $225,000. (North Dakota State, University of North Dakota and University of Wyoming are participating)
   - Same as above. Phase three planned for FY '82 - $450,000.
   - Texas A & I University - Environmental Assessment of Uranium mining operations. Planned for FY '81 - $47,000.

U.S. Department of Energy
Office of Coal Mining
University Projects

As of April 27, 1981, DOE's Office of Coal Mining is currently (or anticipates shortly to be) sponsoring 34 research and development projects at 21 universities. Eleven projects were funded prior to FY 1980. Fifteen were funded in FY 1980 for $2.8 million. In FY 1981 eight new and three continuations have been (will be) funded for $2.2 million; and an additional $0.3 million has been set-aside to support approximately 12 universities for studies by graduating seniors on coal mining and preparation subjects. Total committed funding for FY 1981 is projected at $2.5 million.

These university projects are largely concentrated in basic coal technology research areas of underground and surface coal mining and coal preparation, and were awarded by DOE after positive evaluation of proposals submitted by respective university researchers. With the anticipated reduction in DOE coal mining and preparation research in FY 1982, support for university research through the Office of Coal Mining is not expected to exceed $1.0 million and may result in termination before completion of selected current projects determined to be of low priority. The projects are summarized on the following pages.

UNIVERSITY PROJECTS FY 1980-1981

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
University of Alaska 13350	Washability of Alaskan Coals	3-01-78 - 1-31-82	Washability testing of samples taken from various coal seams in Alaska.	50	-
University of Alabama 30278	Reconnaissance Processing of Impounded Coal Wastes	9-15-80 - 9-15-81	Identify sample, test and realize the fine coal refuse impoundments in Alabama to determine the (1) quantity and quality of coal in place and of the recoverable coal (2) sample and evaluate current coal preparation plant and discharge into impoundments and (3) use the developed techniques and methodology to obtain similar data in other states.	221	-
MIT 13014	Magnetite Recovery in Coal Washing by HGMS Task #`s 5 & 6	8-10-79 - 2-15-82	Determination of whether throughput rates achieved in a previous DOE-funded study of magnetite recovery by HGMS can be increased by a factor of four.	-	451
Auburn University 14287	Wet HGMS Tests	8-28-79 - 10-01-81	Develop and test HGMS processes capable of separating pyrite from pulverized coal as high throughput rates. Test on effectiveness of moving matrix in and out of magnetic field of 70 kilogauss to separate unsized powdered coal from pyrite.	-	-

University & Ipmis	Title	Dates of Contracts	Description	Funding FY 80	Funding FY 81
University of Utah 11419	Coal Flotation Chemistry	6-17-79 - 9-30-81	Investigation of depressant and collector absorption reactions occuring during coal desulfurization by a pyrite flotation technique. Characterization of distinct inorganic sulfide minerals common with coal and evaluation of effectiveness of various promoters and collectors.	63	-
University of Houston 14306	Determination of Sulfur Groups in American Coal	6-01-79 - 6-29-82	Quantitative determination of organic sulfur groups in coal, through evaluation of three or more alternative designs, development of a bench-scale system, calibration of the system and testing of a limited number of American Coals in the system.	-	-
Montana State 14173	Surface Mining Optimization Model	9-30-80 - 9-30-81	Modify and expand a computer-based surface mining and reclamation planning system to provide a practical planning tool for mine operators that can be used for both short and long-range mine planning, readily adaptable to the mining industry and DOE minicomputer systems.	185	-

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University & Inmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Penn State University 14184	Computerized Planning Models	8-11-80 - 8-10-82	Revision of the Penn State Master design simulator in order to more efficiently plan and design underground coal mines. Simulator will be applied to three case study situations and a user`s manual will be developed. Subsystems will also be modified in light of new mining technologies.	-	-
Oklahoma State 13340	High Reliability Miner Hydraulic System	9-18-78 - 10-15-81	Identify, test, and document an improved high technology, highly reliable hydraulic system for the AES and Miner-Bolters. Provide a design manual suitable for underground mining machines. Develop computer models for underground machine hydraulic systems.	-	180
Oklahoma State 12204	Contaminant Diagnostic Monitor	9-01-78 - 10-01-81	Design, fabricate, and test a CDM capable of providing an operator alert when the hydraulic pressure duty profiles for an operating shift. Determine if hydraulic components are being used beyond their rated conditions.	-	-

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Oklahoma State 12559	Monitoring Mining Equipment Hydraulics	3-21-77 - 9-20-81	Determine temperature profiles for a hydraulic system over the operating shift. Determine hydraulic pressure duty profiles for an operating shift. Determine if hydraulic components are being used beyond their rated conditions.	-	-
Missouri University 12542	Longwall Water Jet Cutting Machine	5-07-75 - 7-31-81	Further trials with and development of the Water Jet Cutting Machine to prove the prototype head design.	-	-
Illinois University 12177	Geologic Investigation on Roof and Floor Strata	9-22-76 - 11-15-81	Monitor the geological environments during development and longwall extraction at Old Ben #24. Develop techniques for the prediction of the location of coal balls with the seam. Complete the geologic mapping of Old Ben. Conduct various tests on borehole samples.	50	29
University of Pittsburgh 30089	Chemical Cleaning of Coal	10-1-78 - 09-30-80	Investigate Kinetics of oxydesulfurization in select coal cleaning processes.	25	-

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
North Carolina State 30145	Distribution of Organic Sulfur in Coal	9-12-80 - 9-17-81	Development of an analytical instrument capable of determining the distribution of organic sulfur functional groups in coal.	150	-
University of Pittsburgh 14291	Improved Dewatering Methods	6-08-79 - 6-30-82	Formulate models for predicting the efficiency of mechanical dewatering, the rate of dewatering, the residual moisture content of dewatered coal refuse and for suggesting improved mechanical dewatering methods.	190	205
Princeton University 13153	Short Residence Time Hydropyrolyses	10-01-79 - 9-30-82	A fundamental study of the hydropyrolyses of small coal articles at high pressure and short residence time will be conducted to develop chemical and physical rate processes governing yields and product distributions.	-	-
University of Pittsburgh 30144	Computer Simulation Coal Plants	6-15-80 - 8-31-82	Development of a classifier module revision of the existing crusher module and development of a liberation prediction module, all in support of the research effort to improve the DOE Coal Cleaning Simulator.	209	-

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Southern Illinois 14146	Mining/Reclamation Monitoring Handbook	9-30-80 - 9-30-82	Development of a user's manual for implementing existing techniques with a view towards reducing the coals incurred by the surface mining industry in maintaining environmental quality during mining, in reclamation and in compliance with environmental regulations.	250	-
Michigan Technology 11198	Vibration Induced Fatigue	10-01-75 - 10-30-81	Study the fundamental causes of high cycle fatigue cracking and around the joints of large dragline booms. Determination of the loads and the influence of certain design details associated with stress concentrations.	-	-
Southern Illinois 20091	Special Research Contract		Support Services include providing engineering services of ten faculty members on a quarter time basis, librarian services at the CMTC library and computing services in support of the research, technology, and engineering functions at CMTC.	-	533

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 91
University of Minnesota 14198	Jet Booster Pumps	8-31-80 - 10-31-81	This contract will conduct tests which will determine preferred dimensions and operating parameters for the combined peripheral jet pump and a centrigual pump when serving as in-line boost pump for transporting raw coal slurry in horizontal and vertical pipelines.	139	-
University of Pittsburgh 42255	Project Engineering Services	4-14-81 - 4-14-83	Provide professional technical support services to DOE. Develop pre-task specifications, professional analyses of test results for Mine-Roof Support Sub-Facilities of the METS.	-	98
University of Colorado 00093	Mining Design	- -	Defining needed scientific research for the understanding and mitigation of the environmental impacts of Western coal development and the recommended mechanism needed to implement the research program.	-	100*

*To be awarded

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Columbia University 00018	Models in Coal Management	5-10-81 - 10-01-82	Determination of the impact of decision technology on policy and decision-making within the Federal coal management program, ascertaining the relative importance of behavorial, organizational, and systems-specific factors in determining implementational success.	-	163
Colorado School of Mines 14281	Western Energy Opportunities	6-15-79 - 3-31-81	Complexities and impacts associated with the development of energy extraction facilities in rural western states. Provide first hand field exposure to federal legislative and executive staff in energy policy and programming area.	15	-
Colorado School of Mines 14189	Mine Planning for Oil Shale		Conceptual and design studies for alternative major oil shale mine development.	120	165
Colorado School of Mines/Research Institute FE00092	Microbiological Factors	8-81 - 3-82	Investigate the microbiological development in reclaimed mined land correlated with macrophyte establishment and soil development along a topsoil gradient. Will complement work done on the physical and chemical aspects of optimum topsoil depth and indicate which microflora are associated with currently used grasses for revegetation purposes.	-	56*

*To be awarded

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Colorado School of Mines 14193	Rotary Cutter Machine	9-80 - 9-82	Improve the efficiency, extraction rate, and availability of boring machines for raise, shaft, and tunnel excavation through an increased understanding of the effect of cutterhead design, cutter design and cutter layout on boreability.	422	-
Carnegie Mellon 14186	Management Practices	9-80 - 7-84	Examine the relationship between underground coal mining productivity and human resource utilization and managerial practices.	387	-
Colorado School of Mines 14220	Water Jet Assisted Cutterhead for Coal	9-79 - 9-82	To design, test, and evaluate a high efficiency cutterhead for use on a coal mine entry development machine. High efficiency is to be obtained by utilizing dragnets assisted by low pressure water.	-	-
Colorado School of Mines 12462	High Speed Drilling	6-76 - 11-81	Develop a system for high speed drilling of roof bolt holes, with the ability to drill one-inch or smaller diameter holes.	-	-

University & Ipmis	Title	Dates of Contract	Description	Funding FY 80	Funding FY 81
Colorado School of Mines 14179	Rock Mechanics Instrumentation	9-80 - 1-87	Determine rockmass response to sequential mining of each upper and lower lift panels with the emphasis on monitoring the changes in the in-situ stress field; provide capability to meet unusual situations during mining so that remedial measurements could be instituted quickly; formulate design guidelines for future operations.	500	300
Colorado School of Mines 13342	Experimental Design for HTRF	9-78 - 5-81	Define a research program for the operation of the Hydraulic Transport Research Facility. Obtain engineering data for the design of efficient, economical, and reliable raw coal haulage systems.	-	30

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