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THE DEPARTMENT OF ENERGY'S PUBLIC INFORMATION PROGRAMS: MAJOR CHANGES NEEDED

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REPORT

PREPARED BY THE STAFF OF THE

SUBCOMMITTEE ON ENERGY RESEARCH AND PRODUCTION

OF THE

COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

SECOND SESSION

Serial LLL

DECEMBER 1980

Printed for the use of the Committee on Science and Technology

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1980

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, D.C., December 1980.

Hon. DON FUQUA,
Chairman, Committee on Science and Technology,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: I am forwarding herewith a report entitled "The Department of Energy's Public Information Programs: Major Changes Needed." This report summarizes the results of an extensive evaluation of the balance and objectivity of the public informational and educational programs of the Department of Energy (DOE). The report was prepared at my direction by the Subcommittee staff.

The report identifies a general lack of balance and objectivity in the DOE's educational programs and concludes that the programs heavily emphasize renewable forms of energy, especially solar energy, and largely ignore central station energy sources, particularly nuclear energy or depict them in an unfavorable light. While renewable energy forms are an important resource which should be developed, the DOE has fostered the erroneous and dangerous public perception that they can play a major role in the near term in meeting national energy requirements, and that further development of central generating stations is unnecessary and undesirable. The most disturbing revelation of this report is the active support of anti-nuclear groups by the DOE's Office of Consumer Affairs. This practice is counter to Congressional intent and must be stopped.

The report recommends a number of corrective measures which I support in principle. Only through an effective and unbiased program for public information and education can the DOE expect to fulfill its energy supply mission.

It is my hope that this report will be of significant value to the Committee, the Congress, and others who must deal with matters relating to the energy future of our Nation.

Sincerely,

MIKE MCCORMACK,
Chairman, Subcommittee on Energy Research and Production.

ACKNOWLEDGEMENT

The Subcommittee staff which is directed by Steve Lanes, has, over the past year, evaluated the public informational and educational programs of the DOE and prepared this report. The Subcommittee Chairman gratefully acknowledges the contribution of Gordon Chipman, Technical Consultant on the Subcommittee Staff who organized and carried out this study and the assistance provided by Dr. David Attaway and James Talentino, Congressional Fellows, and Committee Intern Tim Peckenpaugh.

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I. SUMMARY AND CONCLUSIONS

In response to a concern expressed by the Subcommittee on Energy Research and Production on the availability of balanced information on energy sources, the subcommittee staff undertook a detailed study of the Department of Energy's public information programs. This report describes the study and the findings and recommendations reached by the staff.

A number of disturbing and highly questionable practices directed at inhibiting the further development of central-station energy sources, and particularly nuclear energy, were uncovered in the Department. These include funding of activities of antinuclear groups and the removal from distribution and the destruction of public documents on nuclear energy. The broad range of these practices indicate a serious failure of the DOE in carrying out its public education mission.

The findings and recommendations resulting from this study are briefly itemized below for the convenience of the reader and followed by a narrative summary of the full report.

Findings

- The Department of Energy's programs for public information and education do not reflect an objective, balanced, or realistic view toward energy resources and the problems and opportunities in meeting the Nation's requirements for energy.
- The Department's informational and educational programs largely ignore coal and nuclear energy or depict them in an unfavorable light.
- Many of the Department's programs in public information and education foster the erroneous and potentially dangerous public perception that decentralized, renewable energy, can play a major role through the rest of this century in meeting national energy requirements, and that further development of centralized energy and in particular nuclear energy is unnecessary and undesirable.
- Most publications on nuclear energy that were produced by the DOE's predecessor agencies have been destroyed and almost all new publications deal with solar energy, other types of renewable energy, and conservation.
- The DOE does not have a policy for managing publications and public information that ensures balance and integrity.
- Through a number of its programs, the DOE has been discouraging the development of central power stations and encouraging the use of decentralized renewable resources.
- The DOE has not implemented any public information programs which would support the purposes of the Fuel Use Act and the Oil Backout Bill of the 96th Congress.
- The Office of Consumer Affairs (OCA) plays a key role in public information and education and controls or influences most Departmental activities directed against central energy sources and nuclear power while aggressively supporting decentralized, renew-

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able energy resources. The OCA's bias against nuclear energy in particular is nearly unanimously supported by the members of its Consumer Affairs Advisory Committee.

- The DOE is providing financial support primarily through the OCA to organizations which are strongly and actively opposed to central power stations and nuclear power.
- Through its biased actions, especially in public education, the DOE is preventing the development and implementation of policies that will assure adequate supplies of energy.
- The control of the DOE advisory committees should not be entrusted to any organization which has a clear political or technical bias or constituency on energy matters.

Recommendations

- The DOE should establish, at the highest level, an effective policy and the appropriate procedures, for assuring a balanced program of public information and education on all energy forms, consistent with their place in the Nation's overall energy mix.
- The Department of Energy should replace its programs in public education and information with new programs that reflect an objective, balanced and realistic view toward energy resources and the problems and opportunities in meeting the Nation's requirements for energy. The Department should suspend most of its existing public educational activities until new programs can be developed. Among other things, these new programs should be based on the further development of existing energy sources and the development of alternatives to these sources where the existing ones are unable to meet energy needs.
- The Department of Energy should establish procedures for consistent across-the-board review and control of all its public education programs, its publications for the general public, and its use of the mass media. The programs should not be under the control of any office within DOE which has a recognized political or technical bias on energy issues.
- The Department of Energy should stop providing grants and awarding contracts for activities in public information and education until it can review existing programs and procedures, and establish policy and procedures for developihg requests for proposals, reviewing proposals, and managing grants and contracts that will insure an objective, balanced and realistic view of energy issues.
- The Department of Energy should not provide grants or award contracts to any organization that has as a purpose the opposition to development or use of any significant source of energy.
- The Department of Energy, through new public educational and informational programs, should fulfill its statutory obligations by turning away from highlighting the negative and controversial aspects of central station energy sources including nuclear power and toward publishing the facts on these energy forms, as well as undertaking education programs directed at increasing public understanding and allaying unrealistic fears associated with nuclear energy. An even-handed treatment should be applied to all energy sources.

The availability of balanced information on energy resources has been a longstanding concern of the Subcommittee on Energy Research and Production. In particular, the Subcommittee has noted a scarcity

of information on nuclear energy. This lack of readily available and reliable public information on nuclear energy and the public's distorted perception of it suggested the need to examine the Department of Energy's (DOE) programs for public education and information—in part, because the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974 place responsibility for disseminating information on energy resources, including nuclear energy, on the Department.

In reviewing the DOE public information programs, it became apparent that the paucity of reliable information was not limited to nuclear energy, but extended to all central-station energy sources. Accordingly, this report addresses the broader issue with a focus on nuclear energy as the key example.

That the public is seriously misinformed about nuclear power is apparent from the inaccuracies that abound in statements by citizens and from their exaggerated fear of radiation. The depth of this misunderstanding is apparent in the public's perception of risks, which ranks the risk of death or injury from cigarette smoking and driving automobiles far below that from nuclear power, which has yet to claim its first victim from radiation exposure.

Inflation, economic recession, and shortage of petroleum during the 1970's have wrought major changes in the public's view of how to generate and use energy in industry, at home and for transportation. A major national effort has been undertaken to reduce our dependence on the uncertain flow of foreign oil and the Federal Government is playing the leading role in this effort, primarily through programs of the Department of Energy. The magnitude of this effort is measured yearly in billions of Federal dollars for research, development, demonstration, commercialization, and promotion of various types of energy.

Realistic analyses of the energy picture of the United States show that the Nation cannot now afford to ignore any potentially viable energy resource if it is to remain militarily secure and politically independent. The luxury of choosing from among alternative ways of producing energy is years in the future. All proven technologies for producing energy must be used into the next century, even while improving the methods of reducing their adverse impacts. Thus, during the next few decades, reliance on conventional sources of energy must be increased in order to meet the demands of a healthy economy and to reduce levels of imported petroleum. Eventually, solar small-head hydroelectric, geothermal and other renewable energy sources may contribute significantly to the supply of energy in the United States. However, the combined contributions of these resources by the year 2000 is projected to contribute only about six percent of our total requirements for energy.

In this time of demonstrated need for the development of conventional energy sources, the public is being led to believe that it can decide on the basis of impacts and benefits which form of energy to use, while, as this report found, it is not being properly prepared for making decisions but is being manipulated with misleading technical information and emotional appeals in regard to energy.

In assessing the nature of the DOE's activities in public education, the subcommittee staff found that these activities heavily emphasize renewable forms of energy, especially solar energy, and largely ignore centralized energy sources or depict them in an unfavorable light. There is strong evidence that this emphasis is a manifestation of an

entrenched bias against central power stations and nuclear energy in particular among major segments of the Department. While the development of renewable energy is a legitimate and worthwhile endeavor, those opposed to centralized power systems have greatly extrapolated that need to the conclusion that it is the only acceptable energy source. This bias is partly expressed by the many ways in which the Department fosters the erroneous and potentially dangerous public perception that decentralized, renewable energy can play a major role in the immediate future in meeting national requirements for energy, and that further development of centralized power, particularly nuclear power, is unnecessary and undesirable. Despite the passage of the Fuel Use Act and the proposal of a major initiative in the form of the Oil Backout Bill during the 96th Congress, the DOE public information programs are not aimed at public education on the relative risks and benefits of burning coal for electric power generation. That new coal and nuclear generation plants could displace as much as 3 million barrels of oil and gas (in oil equivalents) used daily to generate electricity is not brought out in the DOE's public information.

A similar but broader conclusion was reached by the Public Energy Education Task Force, an independent non-governmental group which found that many of the DOE's public informational activities are inadequate. They specifically stressed that "a national energy education program should recognize and accommodate the multiplicity of possible solutions to energy questions" and suggested that some educational programs of the DOE are "too biased." The media's focus on the controversial aspects of issues has compounded the problem of unbalanced and misleading information from the DOE. The highlighting of controversy associated with nuclear power has contributed to the public's distorted fear of radiation.

The bias against centralized energy sources is evidenced in the DOE primarily through actions of the Office of Consumer Affairs, but also through action or inaction of the Office of Public Affairs and other offices in the Department. It is especially apparent in the kinds of publications that are produced and made available to or withheld from the public. For example, most of the publications on nuclear energy that were produced by the DOE's predecessor agencies have been destroyed and almost all new publications of the Department deal with solar energy, other types of renewable energy, and energy conservation. This unbalanced policy is a prime example of the failure of the Office of Public Affairs to implement a policy and corresponding procedures in the management of publications and presentations through the mass media that will result in reliable public information. Such a policy and the necessary procedures should be established at the highest level of the Department and implemented by one office; this office should have control of the quality of all Departmental publications, films, and radio and television spots intended for the general public. The information provided to the public should deal with all viable energy resources and should endeavor to provide a realistic veiw toward their use, their development and their potential for helping to meet national requirements for energy and should not reflect political or technical biases.

The problems of bias and imbalance are also apparent in the DOE's formal educational programs which, among other things, are aimed at developing curricular materials but include no activities dealing with nuclear energy and generally treat central generation of elec-

tricity in a negative light. Most of these educational programs are funded by the Office of Consumer Affairs, although some of the Assistant Secretaries also support educational activities. The records for educational funding for the last three fiscal years reveal almost no support for centralized energy sources and a very heavy emphasis on outreach programs dealing with decentralized technologies. This lack of balance is misleading and demonstrates the need for all educational programs of the DOE should fall under strict quality control.

Perhaps hardest to understand is the Department's funding of so-called educational activities by organizations which are publicly opposed to central generating stations and nuclear energy in particular. These organizations include some whose literature openly attacks nuclear energy and whose activities undermine development of new central generating capacity by, for example, attacking the financial structure of utility companies, especially in regard to their construction projects.

The Department of Energy should correct the deplorable state of its educational programs by suspending most of its existing public educational activities and replacing them with programs that reflect an objective, balanced and realistic view toward energy resources and the problems and opportunities in meeting the Nation's requirements for energy. The Department should immediately discontinue making grants and awarding contracts for activities in public information and education until it can establish a comprehensive program for developing requests for proposals, reviewing proposals, and managing grants and contracts that will insure a balanced view of energy issues. In addition, the Department should discontinue providing grants and awarding contracts to any organization among whose purposes is opposition to the development or use of any significant source of energy. The new program should address the special need to initiate activities that will properly inform the public on central generating sources and allay its unrealistic fears of nuclear energy.

This study found that many of the problems with the Department's programs in public information and education arise out of activities of the Office of Consumer Affairs (OCA), which is guided by the Consumer Affairs Advisory Committee. The evidence indicates that almost all the members of this committee are opposed to central generating stations and nuclear energy in particular, or believe that the government should play no role in properly informing the public about the full spectrum of energy issues, especially nuclear issues. The bias of the OCA and its Consumer Affairs Advisory Board make this office unsuitable as a key element in the Department's public educational efforts and this responsibility should be reassigned to a more appropriate office. In a broader context, the Department should establish procedures that will assure the membership of its advisory committees are balanced with an appropriate range of expertise and viewpoints and it should increase its efforts to fully analyze the technical and political biases of its advisory committees' recommendations. The control of the DOE advisory committees should not be entrusted to any organization which has a clear political or technical bias or constituency on energy matters.

Many advocates of decentralized renewable energy forms see drastic changes in the energy economy as the means of achieving

great social change, destroying the power of big business and the utilities and emplacing a simpler, socialistic lifestyle. Consequently, they are often active protesters of our present economic and political system and strongly attack centralized energy sources and utilities. In contrast many advocates of coal, nuclear power, and synthetic fuels development realistically see decentralized renewable forms of energy as playing an important role. They are, however, concerned that necessary growth in centralized power will be prevented, not by the development of decentralized power, but by its promotion as the "preferred alternative."

Recently, reports have come from the DOE indicating the need to move ahead aggressively with the near-term and long-term development of nuclear power in order to displace petroleum burned to generate electricity, to minimize the cost of electricity to the consumer and to meet our Nation's growing electrical energy demand. Unfortunately, this recognition has not been translated into any meaningful program or policy. This lack of action may result, in part, from undue Departmental sensitivity to the uninformed political and public opinion on nuclear issues and the willingness to sway with such opinion rather than to take well-reasoned, but perhaps politically unpopular corrective actions that could greatly aid the Nation in devising a workable policy on energy. The reluctance of the Government to foster the development of centralized power and the faltering public acceptance of these energy forms, particularly of nuclear power, is threatening the power plant industrial base and could threaten our society.

In a broader world view, the U.S. policy also could have serious consequences. Chancellor Schmidt of West Germany in speaking of the importance of nuclear power to international stability warns ". . . . I will point to the great danger, that if nuclear energy is not developed fast enough, wars may be possible for the single reason of competition for oil and natural gas."

If nuclear energy is to play a role in our struggle for energy independence, as it must, then the DOE and other agencies with responsibilities in this field, such as the Environmental Protection Agency and the Nuclear Regulatory Commission must provide sufficient and objective public information on central power stations and nuclear power. The current schizophrenic Governmental voicing of the need for nuclear development while promoting controversy over its acceptability is unfair to the American people, inconsistent, and outside the intent of the law.

II. INTRODUCTION

The availability of balanced information on energy sources has been a long standing concern of the Subcommittee on Energy Research and Production. In particular, the Subcommittee has noted a distinct lack of information on nuclear energy. As a result, thirty four members of Congress, many of them Subcommittee members called on the Department of Energy (DOE) in a letter dated November 8, 1979 "to establish a public information program on nuclear energy, which presents this energy source in a realistic and positive way, showing its significant present and future contribution to this Nation's energy supply." While the response from the DOE was supportive of the Congressmen's views, the Department has not as yet taken any responsive action. The failure to address public needs for information on nuclear power was acknowledged by the then Undersecretary of the DOE, Dr. John Deutch, during Congressional hearings when he stated "the Department has been very aggressive in publishing information pamphlets, and I have so supported that, as to conservation and solar energy, and we have not done the same thing for nuclear energy." [1] The resulting paucity of accurate information on nuclear energy and the distorted public view of it demonstrated the need to examine the DOE's programs for public education and information.

In reviewing the DOE's public information programs, it became apparent that the lack of such information was not limited to nuclear energy, but extended to all central station energy sources. As a result, this report addresses the broader issues related to central station energy sources with a focus on nuclear energy as the key example.

It is apparent that the public is seriously misinformed about nuclear power from the inaccuracies that abound in statements by citizens and from their exaggerated fear of radiation. The primary purveyors of public information on nuclear energy is the news media, whose focus on the controversial aspects of issues, has highlighted the negative, fearful aspects of nuclear power [2] with an understandable lack of coverage of its less sensational benefits. News coverage of this type compounds the problem of inadequate governmental information by producing a phobic or unrealistic fear,[3] a condition incompatible with retional decisionmaking.

The depth of this misunderstanding is apparent in the public's perception of risks. For example, in a survey reported in the September, 1979 issue of *Dun's Review*,[4] a sample of college students rated

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[1] Nuclear Energy Production in the Coming Decade. Hearing before the Subcommittee on Energy Research and Production of the U.S. House Committee on Science and Technology, September 20, 1979 (No. 86), p. 19

[2] The Media Institute, "Television Energy News Covers Nuclear Energy—A Ten Year Perspective", 1979, Chapter 6.

[3] Robert L. DuPont, *Nuclear Phobia—Phobic Thinking About Nuclear Power*, The Media Institute, March, 1980.

[4] "What Price Safety? The Zero-Risk Debate", *Dun's Review*, September, 1979, p. 53.

nuclear energy as being more dangerous to their health and safety than cigarette smoking or driving automobiles. Death statistics associated with each of these shows the distortion in this perception. For example, there are an estimated 100,000 deaths per year attributed to smoking, 50,000 deaths per year caused by automobile accidents and no recorded radiation-induced deaths from the use of commercial nuclear energy. Even statistical calculations of the effects of radiation from nuclear powerplants on public health show no significant consequences.

That many aspects of daily living unrelated to nuclear power involve exposure to radiation is not generally understood. For example, the average annual radiological dose to smokers is estimated at 8,000 mrem,[5] which is almost 200 times greater than the maximum dose received by any member of the general public from the Three Mile Island accident, the worst accident in the history of nuclear power. These examples suggest that the public's perception of nuclear power is so distorted that to change it, even with truthful and balanced information, will be exceedingly difficult.

The need for nuclear informational programs directed to the public and to specific groups was identified as a need of high priority in the 1979 report of the Interagency Task Force on the Health Effects of Ionizing Radiation.[6] It was also identified as a responsibility of the U.S. Radiation Policy Council in the President's memorandum to the Council on February 21, 1980.[7] This memorandum stated that the Council should "assure that the Task Force recommendations for developing information programs are carried out by the Federal agencies" and "provide central coordination for Federal information programs concerned with radiation." The President also stated that the Council should report to him on the status of Federal information programs no later than September 30, 1980. The Council's staff is planning to present a preliminary report to the Council at its meeting on December 18, 1980.[8] It is hoped that some of the problems identified in this report will be addressed soon by the Council.

In a broader sense, similar problems have been identified in the DOE's public informational programs concerning central station energy sources in general and in particular coal stations. The main element of the energy crisis is recognized as dependence on foreign imports and yet, except in the area of conservation and increased fuel economy of transportation, the DOE programs as presented to the public are focused on the introduction of decentralized renewable energy sources. For example, the near term reduction in use and importation of petroleum products through the replacement of oil and gas used in generating electricity with coal or other proven central station energy sources is not being called to the attention of the public. As a result, institutional and political barriers effectively block the development of new central power stations.

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[5] The Effects on Populations of Exposure to Low Levels of Ionizing Radiation. National Academy of Sciences, Committee on the Biological Effects of Ionizing Radiation, July 1980, p. 80.

[6] *Report of the Interagency Task Force on the Health Effects of Ionizing Radiation*, June 1979, Printed and Distributed by HEW, p. 80.

[7] Memorandum dated February 21, 1980 to the Chair of the Radiation Policy Council; from Jimmy Carter, President; Subject: Public Information Program on the Health Effects of Radiation Exposure, Sources of Radiation, and Ways to Minimize Exposure.

[8] *Progress Report and Preliminary 1981–83 Agenda* (RPC–80–001), U.S. Radiation Policy Council, Sept. 1980, p. 46.

A report prepared by the Public Energy Education Task Force, an independent non-governmental group, concluded that many of the DOE's public informational activities are inadequate. The study specifically stressed that "a national energy education program should recognize and accommodate the multiplicity of possible solutions to energy questions." [9] The report suggested that some educational programs of the DOE are "too biased" and that its "information may easily reflect the relatively narrow funding and political goals of particular program offices.[10] Indeed, another authority writes that "Mr. Carter . . . is sympathetic to those who oppose nuclear and . . . has given key decision-making jobs to some undisguised opponents of nuclear power."[11]

It is clear that the Department of Energy has a responsibility to disseminate information on nuclear power as well as other types of energy. For example, the Energy Reorganization Act of 1974 [12] states that information shall be disseminated subject to Chapter 12 of the Atomic Energy Act of 1954 [13] which specifically calls for disseminating information on atomic energy. The House Committee Report on this legislation [14] states that "Every reasonable effort should be made to speed information transfers to the public domain." The Senate Committee Report on this legislation [15] further notes that the "promotional functions" of the Atomic Energy Commission (AEC) are transferred to the Energy Research and Development Administration (ERDA), which became part of the DOE. These interpretational documents emphasize the DOE's responsibilities in promoting all forms of energy.

In order to assess the nature of the DOE's activities in public education and to encourage the development of a balanced program and a strategy for remedial action, the Subcommittee staff conducted a study of the Department's programs to develop and disseminate information on energy. These programs are administered largely by the Office of Public Affairs and the Office of Consumer Affairs. In addition to these offices, the Assistant Secretaries for Conservation and Solar Energy, Fossil Energy, Nuclear Energy, Resource Applications, and Environment, and the Director of the Office of Energy Research publish technical information on programs within their organizations. Non-technical educational publications of these offices are supposed to be reviewed by the Office of Public Affairs in order to comply with DOE Order 1340.1.

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[9] Public Energy Education, draft report prepared by the Public Energy Education Task Force Intergovernmental and Institutional Relations, DOE Jan. 3, 1999, p. 1.

[10] Ibid., pp. 5–6.

[11] Llewellyn King, "Nuclear Power In Crisis: The New Class Assault," *The Energy Daily*, July 14, 1978, p. 5.

[12] Energy Reorganization Act of 1974, Public Law 93–438, Section 1.

[13] The Atomic Energy Act of 1954, Public Law 83–703, p. 232.

[14] House of Representatives Report No. 93–70, p. 20, *Energy Reorganization Act of 1973*, to accompany H.R. 11510.

[15] Senate Report No. 93–980, p. 19, *Energy Reorganization Act of 1974*, to accompany S. 2744, p. 19.

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III. BACKGROUND

Understanding and evaluating the Department of Energy's programs for public information and education requires a general perspective of energy trends in the United States and the Federal programs directed at meeting national requirements for energy. Following is a brief attempt to provide this perspective.

Inflation, economic recession, and shortages of petroleum during the 1970's have wrought major changes in the public views of how to supply and use energy in industry, at home and for transportation. For example, the demand for petroleum has dropped by 7 percent over the last three and one-half years while the total demand for energy has grown by only about three percent.[16] The increasing importance of electric energy in this new era of forced and voluntary conservation of energy is evident by the 8 percent growth in its use over the same three and one-half years.[17]

A major national effort has been undertaken to reduce our dependence on the uncertain flow of foreign oil. Because shortages of petroleum threaten national security and promise economic disaster, the Nation has recognized a need to conserve energy and vigorously pursue development of technologies that can contribute to energy independence. The Federal Government is playing the leading role in this effort, primarily through programs of the Department of Energy. The magnitude of this effort is indicated by the following chart which shows allocation of the DOE's funds for research, development, demonstration, commercialization, and promotion of various types of energy.

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[16] DOE Monthly Energy Review, September 1980, DOE/EIA-0035(80-09), Executive Summary.

[17] Ibid., Chapter 3. This is considerably below the historical growth rate of almost 7 percent per year: however, the relationship of electric growth to GNP growth has increased during this period by about 2 percent while the relationship for total energy *decreased* by about 4 percent. This is indicative of the importance of electric power to the economic health of the nation.

FUNDING FOR ENERGY PROGRAMS, DEPARTMENT OF ENERGY AND OTHERS [18]

[In millions of dollars]

Program	Estimated budget authority	
	Fiscal year 1980	Fiscal year 1981 [3]
Fossil energy:		
Coal R. & D	742.0	1,045.0
Oil and gas R. D. & D	91.7	89.8
Alternative fuels production (S. 932, Public Law 96–294), title I	[1] 11,518,0	0
Total, Fossil Energy	12,351.7	1,134.8
Solar and Conservation reserve: [2] Authorized by the Energy Security Act, Public Law 96–294; appropriation, Public Law 96–126	1,000.0	0
Solar Energy:		
R.D. & D	552.7	597.4
Solar information [3]	[3] 0	[3] 1.4
Alternative fuels production (S. 932, Public Law 96–294) Title II DOE and USDA)	[1] 1,270.0	0
Other DOE programs (BES, elec. energy system., environment, energy storage system, SPS)	37.7	37.7
Other agencies (AID, Small Business, Farmers Home, EDA, Power Marketing /TVA, etc.)	535.0	572.0
Federal tax incentives (DOE estimates)	319.0	459.0
Solar bank/HUD [2]	0	[2] 45.0
Total, solar energy	2,714.4	1,712.5
Conservation:		
State and local programs	443.1	452.9
R.D. & D., etc	336.9	409.2
Total, conservation	780.0	862.1
Small-scale hydroelectric development (including loan guarantee program)	21.2	21.8
Geothermal energy (including geothermal resources development fund)	149.5	157.3
Nuclear energy:		
Fission programs, DOE R.D. & D	1,046.2	[4] 1,009.3
Remedial action programs, DOE	32.6	47.6
Uranium supply and enrichment activities, DOE [5]	243.6	31.8
Nuclear Regulatory Commission	400.9	454.0
Total, nuclear energy	1,723.3	1,542.7
Magnetic fusion	350.4	394.1

[1] Energy Security Reserve: $19 billion appropriated by P.L. 96–126 and P.L. 96–304; total amount available immediately = $12.788 billion; remaining $6.212 billion to be made available after June 30, 1982.

[2] Solar & Conservation Reserve (Bank): $1 billion authorized by S. 932, P.L. 96–294; amounts for various programs to be contained in future, specific appropriations acts.

[3] Within the Solar & Conservation Reserve, authorized by S. 932, P.L. 96–294, the following maximum amounts may be spent for the promotion of solar and conservation programs (Title V): FY '81 = $20 million; FY '82 = $15 million; FY '83 = $15 million; FY '84 = $7.5 million.

[4] FY '81 funding for fission includes $172.4 million for the Clinch River Breeder Reactor Project pursuant to continuing resolution, H.J. Res. 644, passed by Congress on December 15, 1980.

[5] Uranium enrichment funding is net after revenues.

[18] These are approximate figures summarized from the incomplete fiscal year 1981 Congressional budget cycle.

The Nation cannot now afford to ignore any potentially viable energy resource if it is to remain militarily secure and politically independent. The luxury of choosing from among alternative ways of producing energy is years in the future. Dr. Harvey Brooks, Chairman of the National Academy of Sciences' Committee on Nuclear and Alternative Energy Systems states that "the magnitude of uncertainty—technical, economic, and political—makes it unwise to commit ourselves to actions that might reduce our flexibility in the future".[19]

Unfortunately, when speaking of conventional centralized production of power from coal and nuclear energy, those who recommend limiting our options often glibly make statements that mislead the public. For example, in a draft fact sheet on coal prepared for the DOE, the future use of coal is questioned by stating that "If it is to become a more important component of the U.S. energy mix, serious environmental, social, health and safety problems must be overcome".[20]

This seemingly well-meaning statement erroneously conveys the impression that coal is dispensable and that insurmountable problems are associated with it. The subtlety and irresponsibility of this kind of communication is easily missed by laymen and experts alike. The resulting damage to public policy will be extraordinarily grave if the options for producing energy are reduced. For example, current projections[21] show that use of coal and nuclear energy must grow substantially in order to meet demands for energy in the year 2000, even if the current Administration's exceedingly optimistic goal of producing 20 percent of the Nation's power from solar energy is met and significant changes are realized through conservation.

Regional shortages of electric generation reserve margin are predicted within a few years if coal and nuclear plants under construction cannot be brought into operation on schedule. Serious regional electric shortages are predicted for the late 1980's even if these schedules are met.[22] The long time required to construct modern electric generating plants suggests that these shortages cannot be avoided without a shortening of this lead time. In seems clear that all proven technologies for producing energy must be used into the next century even while methods of reducing their adverse impacts are improving.

During the next fifteen years reliance on conventional sources of energy must be increased in order to meet the demands of a healthy economy and to reduce petroleum imports. The use of more efficient machinery, especially automobiles, alcohol and synthetic fuels and the development of viable electric automobiles can aid in reducing the use of petroleum. In addition, the equivalent of more than 3 million barrels of oil now used daily for generating electricity from

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[19] Physics Today, Sept. 1980, p. 9. Dr. Brooks further noted "It seems to me that no group of experts could responsibly develop (a single clear-cut path for energy policy); to do so would be to disguise their political preferences and personal conceptions of a desirable future society as an objective plan based on technical considerations".

[20] Draft Fact Sheet No. 2 "Burning Coal" prepared for the DOE Office of Consumer Affairs by the National Science Teachers Association, p. 1.

[21] The National Academy of Sciences CONAES Report, "Energy in Transition 1985-2010" December 1979.

[22] "Electric Power Supply and Demand for the Contiguous United States 1980–1989" June 1980, U.S. Dept. of Energy, DOE/RG0036.

oil and natural gas can be greatly reduced by increased use of coal and nuclear energy.[23]

Eventually, solar, small-head hydroelectric, and geothermal energies may contribute significantly to generation of power in the United States. However, the combined contribution of these resources by the year 2000, even assuming an aggressive development program manifested by the budget above, is projected to contribute only about six percent of our total requirements for energy.[21 24] This optimistic projection means that further development of conventional forms of energy must be pursued while developing the newer, often called "alternative," sources of energy.

A common misconception engendered by the lack of balanced information on energy is that solar technologies are risk-free and have no ecological hazards. Although these hazards have not been carefully characterized as yet, decentralized solar units, like any technology, involve some risk of fatality or public injury.[25] To deny this creates public misunderstanding and further accentuates the ever declining public acceptance of nuclear energy. In fact, a recent study has estimated the fatality risk from solar home heating as having essentially the same range as that from nuclear power when all aspects of using the energy source are considered.[26]

There are technical, political, institutional, economic and environmental problems associated with the development of all sources of energy, and continued research and engineering is necessary to resolve them. Some perspective on the nature of these problems can be gained simply by enumerating several issues under consideration for three types of energy.[27]

1. Coal

Environmental impacts of strip mining.
Atmospheric accumulation of CO_2.
Thermal pollution.
Atmospheric releases of toxic substances.
Occupational hazards to miners and power plant workers.
Solid Waste Disposal.
Acid Rain.
High Construction Costs for Power Plants.

2. Solar

Economics of producing energy.
Risks of accident in materials mining and fabrication and maintenance.

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[23] A recent DOE report "Electric Power Supply and Demand for the Contiguous United States 1980–1989", June 1980. DOE/RG0036, estimated that the failure to complete on schedule nuclear plants already under construction between now and 1985 could result in the use of some 700 million additional barrels of oil. "Reducing U.S. oil vulnerability, Energy Policy for the 1980's" November 10, 1980. U.S. Dept. of Energy DOE/PE–0021, p. IV–F–6. This report shows that more than 3 million barrels of oil a day in petroleum and natural gas equivalent are used to generate electricity. Failure to install new coal or nuclear generating facilities is preventing the backout of this petroleum.

[24] Annual Report to Congress 1979, Vol. 3, Energy Information Administration DOE/EIA 0173(79)/3, p. 175.

[25] Herbert Inhaber, "Is Solar Power More Dangerous Than Nuclear?", *New Scientist*, May 18, 1978, p. 3.

[26] Resources for the Future "Energy in America's Future, The Choices Before Us", 1979 p. 367, 368.

[27] These are the major impacts of the listed sources. In some cases, such as thermal pollution and nuclear waste disposal, the technical solutions are in hand. However, the political and institutional barriers to solution or public acceptance remain significant.

Compatability and impact of decentralized generation of electricity on distribution systems.[28]

Reliability.

Use of large land areas.

Environmental damage from fabrication and use.

3. Nuclear

Release of radioactive materials.

Accident Risks.

Waste disposal.[29]

High construction costs.

Thermal Pollution.

Public attitude.

Proliferation of risks.

The roles of the private sector and the government in developing energy for the future are highly confused. On the one hand, in order to meet projected needs for energy, utilities will have to rely on expansion of capacity to produce power from coal and nuclear fuels, and on the other, some public organizations and government agencies speak of alternative sources of energy as though they can immediately substitute for coal and nuclear energy. In fact, there are no fuels which can reliably substitute for coal and nuclear energy now or during the rest of this century. The public is being led to believe that it can decide on the basis of impacts and benefits which form of energy to use. However, only a public fully informed of the factors involved in properly comparing sources of energy can generate workable policies. This report will show that the public is not being properly prepared for making decisions but is being manipulated with misleading technical information and emotional appeals in regard to energy.

Many advocates of decentralized renewable energy forms see the drastic changes in the energy economy as the means of achieving great social change, destroying the power of big business and the utilities and implacing of a simple, socialistic life-style.[30] Consequently, they are often active protesters of our present economic and political system and strongly attack centralized energy sources. On contrast however, many advocates of coal, nuclear power, and synthetic fuels development realistically see decentralized renewable

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[28] This issue is not generally considered in assessing the development of decentralized, renewable electric energy sources. Control and protective devices in existing electric distribution systems are designed for the flow of power from the large central generator to the distributed loads. Feedback of power from distributed sources through the distribution system and to other distributed sources will require major changes in the existing distribution system at a potentially significant cost to the rate payer. The technical, institutional and economic solutions to this problem have not yet been determined.

[29] The problem of nuclear waste disposal has been consistently characterized as an unsolved [(and potentially unsolvable) problem which we will be handing down to many generations to come. In fact, the world scientific and engineering community is in general agreement that the technical solution to the safe disposal of radioactive waste is in hand. The following are among those organizations that have expressed such confidence:

American Physical Society,
National Academy of Sciences,
American Institute of Chemical Engineers,
Association for Cooperating in Engineering,
Government Accounting Office,
Electric Power Research Institute,
Natural Resources Defense Council,
Canadian Government Study,
Swedish Government Study,
Australian Atomic Energy Commission.

The true challenge to the disposal of radioactive waste is both political and institutional.

[30] For further discussion of this view, see "The Coercive Utopians: Their Hidden Agenda", H. Peter Metzger, Ph.D., Public Service Company of Colorado.

forms of energy as playing an important role. They are aware, however, of the exaggerated claims for the contribution these renewable forms of energy can make during this century and are justifiably concerned that *necessary* growth in centralized power will be prevented, not be the development of decentralized energy, but by its promotion as the "preferred alternative" when in fact there are no alternatives. There are, of course, many advocates of decentralized power who recognize the need for all energy forms, but their voices are weak in the Department of Energy.

IV. RESULTS OF THE EVALUATION

The Department of Energy sponsors and supports a myriad of diverse public informational programs and educational activities dealing with energy. However, these efforts are imbalanced and distinctly biased against central station energy sources in general and one form of energy in particular, nuclear energy. The study of the DOE's informational and educational programs indicates that they overemphasize the benefits and near-term potential of decentralized renewable energy technologies by failing to acknowledge their limited potential for contribution to near-term energy needs and their identifiable environmental, institutional and economic problems, and largely ignore centralized energy sources, particularly nuclear power. When nuclear power is mentioned, its controversial aspects are highlighted with little or no discussion of its beneficial aspects or its indispensability in the near-term. This bias, contributes to public misunderstanding of the relative risks and merits of the various sources of energy. The large financial commitment of the DOE to public education allows it to influence a substantial portion of the public. This is a responsibility that must be discharged carefully because decisions that may be made by a misinformed public can lead to severe consequences in our economic and political systems.

Because nuclear energy is the focus of much of the antipathy toward central generation of electricity, this report focused primarily on the nature and availability of public information on nuclear energy.

A. Activities of the Office of Public Affairs

The DOE's Office of Public Affairs (OPA) is charged with managing a comprehensive public communications program; reviewing requests for publication of proposed pamphlets, booklets, periodicals; establishing and chairing a Publications Review Board; and representing the DOE on matters concerning the content, need and distribution of publications.[31] These responsibilities include ensuring the accuracy and clarity of the publications. Specifically, the Office of Public Affairs is directed to review publications with particular attention to precluding those that (1) are misleading to the public. (2) are self-aggrandizing, (3) support commercial or political bias, (4) introduce controversial topics without proper balance, and (5) depart from policies of the Administration, Congress or the Department without identifying such a departure. The Office of Public Affairs, then, is in a position of considerable responsibility and influence over the content and quality of the Department's publications.

It should be noted that this responsibility does not cover the production of promotional films or any of the educational programs of

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[31] DOE Order 1340.1; 8–10–79; Management of Public Communications Publications and Scientific, Technical and Engineering Publications; Chapter III, p. 1.

the Office of Consumer Affairs. Thus, the lack of provisions for consistent, across-the-board control of informational and educational programs is a serious deficiency in the capability of the DOE to fulfill its responsibilities for properly informing the public on energy matters.[32]

Since August of 1976, the Office of Public Affairs has had more than 60 publications on nuclear energy destroyed.[33 34 35] Gradually, the supplies of the other publications on nuclear energy were depleted and the supplies have not been replenished. Currently, according to a survey conducted by the NRC,[36] the DOE only distributes two publications that specifically address nuclear energy. These two publications are made inconsequential by the scores of publications on renewable, decentralized energy sources.

As will be pointed out in the following sections, the Office of Public Affairs has had little success in implementing its charter in publications management. Because of limited manpower and lack of interest by other groups in the DOE, the planned Publications Review Board has never been formed. Consequently, there is no forum for those of divergent views within the DOE to work together in providing balanced information to the public. This Board should be established in order to pursue its mandated duties.

Because the Office of Public Affairs is able to control only those documents that are submitted to it for review and printing, the majority of the DOE's publications have not been reviewed for balance as required by the Department's own procedures. While this situation has been improving, the staff of four professionals in the Editorial Division of Public Affairs is insufficient to properly carry out its publications management function.[37] This is especially apparent when one considers the appeal process. When a draft publication is rejected by the Editorial Division for any reason, the originating office can appeal the decision to the Director of Public Affairs. The experience with the review of the Office of Consumer Affairs publication, "Energy Consumer," suggests that this process is ineffective. A number of editions of the "Energy Consumer" were rejected by the Editorial Division, but all ultimately were approved on appeal.

The DOE's formal educational program is controlled within the Office of Consumer Affairs. This program will be discussed later, but it is important to note that the Office of Public Affars has no review authority over them. Thus, the criteria and standards of excellence and balance applicable to public information need not be applied to educational activities in spite of the fact that curricular materials are being prepared for use in Grades K through 12.

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[32] An example of a film outside the oversight of OPA is a children's film being produced by KCET-TV in Los Angeles called. "Reach for the Sun" under a $240,000 grant from the Office of Conservation and Solar Energy of DOE: (Energy Insider, Vol. 3, No. 20, U.S. DOE, p. 1.)

[33] Letter dated August 19, 1976; from Edwin E. Stokely, Assistant Director for Communication Services, Office of Public Affairs, Energy Research and Development Administration; Subject: Information Booklets.

[34] Letter dated January 25, 1977; from Edwin E. Stokely, Assistant Director for Communication Services, Office of Public Affairs, Energy Research and Development Administration; to Heads of Fields Organizations, Energy Research and Development Administration; Subject: ERDA Booklets and Pamphlets.

[35] Letter dated April 14, 1977; from Edwin Stokely to W. Range, Assistant to Manager for Public Information and T. Bauman, Director, Public Affairs Office, Energy Research and Development Administration; Subject: Removal of Publications from Distribution.

[36] Letter dated June 24, 1980 from Edwin E. Stokely to Mr. Joe Fouchard, Director, Office of Public Affairs, U.S. Nuclear Regulatory Commission.

[37] The Publications Branch, under the Editorial Services Division of OPA is composed of four professionals and a branch chief. At this time (Nov. 80) there is no secretary for the branch.

This overall lack of centralized responsibility and control over the public informational activities of the DOE allows some offices to promote their own views and show their biases. Implementation of the DOE's existing managerial guidelines for publications, and expansion of them to include educational programs would be important in aiding the DOE with its responsibilities. Public confidence in the DOE and its ability to effectively contribute to development of reasonable public policies in energy would be greatly enhanced by a balanced, consistent program for public information.

B. Activities of the Office of Consumer Affairs

The Office of Consumer Affairs (OCA) is responsible for oversight of the DOE's consumer and energy education activities; for apprising the Secretary of potential impacts on consumers of initiatives under consideration within the DOE; for responding to citizen-originated initiatives; and for serving as DOE's advisory committee management officer.[38] In carrying out these responsibilities OCA exercises primary oversight for the direction of DOE's programs in consumer affairs, public participation, education on energy, and management of advisory committees. The Office of Consumer Affairs is to ensure that educators possess sufficient knowledge of energy fundamentals to adequately develop their student's understanding of energy; that the study and analysis of the effects of energy policy and regulation on citizens is undertaken; that Federal policies, programs and regulations are designed to provide reliable, safe, fair, and accessible energy systems; that the DOE's program elements produce and distribute materials to inform consumers about the DOE's responsibilities, services and procedures; and that the capability of field offices is adequate to serve as a front-line contact for support to communities. The Office of Consumer Affairs is in an extremely influential position with respect to formulation of informational and educational programs on energy.

1. USE OF MASS MEDIA

The Office of Consumer Affairs has recently commenced, through the mass media, a nationwide campaign promoting solar energy and conservation. Earlier this year, the DOE started offering 30 and 60 second television and radio spots on solar energy to 800 TV and 6000 radio stations. These spots serve primarily to give the viewer or listener a general awareness of solar technology and an impression that it can play a major role in meeting future energy requirements.[39] Also, the DOE Office of Conservation and Solar Energy recently provided a grant of $240,000 to KCET–TV in Los Angeles to produce a special children's show called "Reach for the Sun".[40] This massive effort to promote decentralized energy technology is pursued in spite of alarm among major segments of the scientific community many of whom realize that solar energy cannot play a significant role by the year 2000[41] and that reliance on exaggerated expectations

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[38] DRAFT Functional Statement of the Office of Consumer Affairs.
[39] Telephone conversation with Mr. McCrensky, a representative to the solar energy service campaign, Office of Conservation and Solar Energy, DOE.
[40] *Energy Insider*, Vol. 3, No. 20, U.S. Department of Energy, p. 1.
[41] National Academy of Sciences, Committee on Nuclear and Alternative Energy Systems, *Energy in Transition*: 1985–2010, 1979, p. 88.

for solar energy while de-emphasizing other forms of energy could result in the deployment of costly, obsolete technologies.[42] In sharp contrast to these efforts to promote solar energy, no television or radio spots on coal or nuclear energy have been offered and there are no plans to do so, despite the fact that nuclear power currently provides 12% and coal 50% of the nation's electricity, that continued growth of those sources is recognized as necessary to meet our future energy needs, and that one of the main reasons for nuclear powers current difficulties is the lack of public understanding of its benefits and risks.

2. CONSUMER AFFAIRS ADVISORY COMMITTEE

The Consumer Affairs Advisory Committee is a 35 member committee of private citizens which meets periodically to discuss energy issues that affect American consumers.[43] The objective of the Advisory Committee is to advise the Office ot Consumer Affairs on energy and educational policies.[44] An investigation of the Advisory Committee's recommendations shows that it is highly supportive of conservation and decentralized, low technology energy resources and blatantly opposed to nuclear energy and centralized utilities of the type that now provide the great majority of the nation's electrical energy requirements.

Critics of the Advisory Committee have deplored its actions and even characterized it as a radical, socialist group.[45] Certain actions of the Committee probably helped generate this view. For example without any apparent direction from the DOE, the Committee recommended at its meeting on May 3–4, 1979 "that the DOE formally conduct studies of . . . increased Federal or direct management of national energy supplies. Among the ownership issues the Committee identified for the study were: Nationalization of the oil industry, . . . and nationalization of electric generating capability . . .". While considering these actions is in no way improper, it is improper for a committee advisory to the government to be so heavily imbalanced in its views.

Several of the Committee's members, including representatives of the Solar Lobby and the Alternative Energy Research Organization, and the director of the New Mexico Solar Energy Institute, represent private organizations founded primarily to promote solar technologies. Almost all of the 35 committee members, including the Chairperson, were contacted by the Subcommittee staff and each indicated their belief that the Advisory Committee should heavily emphasize governmental funding for and research on conservation and renewable forms of energy.[46] No support was found for central power stations or nuclear energy.

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[42] "*When American Solar Goals Clash with Reality*". Philip Handler and Harvey Brooks, Letters, *The New York Times*, Thursday, March 27, 1980; in response to "Prestigious but Wrong Price Tag for Solar Energy", Gus Speth, Letters, *The New York Times*, Tuesday, February 26, 1980.

[43] DOE Charter of the Consumer Affairs Advisory Committee, Tina Hobson, February 28, 1979.

[44] Letter dated July 14, 1980 from Tina Hobson, Director, Office of Consumer Affairs, to Tim Peckinpauhg of the staff of the Subcommittee on Energy Research and Production.

[45] Ken Maize, "Stills and Socialism: That's DOE Consumer Advisory Committee", *The Energy Daily*, May 4, 1979, pp. 3–4.

[46] Memorandum dated October 16, 1980 from Tim Peckinpaugh to Steve Lanes. (Some of the Members of the Consumer Affairs Advisory Committee contacted include: Maggie Alston, Frank Collins, Steve Ferrey, Karren Hastings, Carter Henderson, David Miller, Shirley Sutton, Woodrow Taylor, Lee Webb, Mona Martin (Chairwoman)).

Several members of the Committee actually represent anti-nuclear groups. For example, one is a staff attorney from the National Consumer Law Center, an intervenor in the Seabrook nuclear reactor case, and another is the Director of the Public Law Utilities Group who has been an outspoken supporter of local anti-nuclear organizations.[47] Moreover, the subcommittee of the Advisory Panel that has jurisdiction over matters concerning nuclear energy is strongly opposed to further construction of nuclear reactors. All members of that subcommittee indicated that they were especially concerned about the economics of nuclear power and somewhat skeptical about nuclear safety and methods of disposing of radioactive waste. Several other members also indicated that they shared the opinion that nuclear energy is uneconomical and therefore cannot constitute a major source of future electricity.[48] This view is contrary to that shared by the majority of the engineering and financial communities as well as the electric utility industry.

The Consumer Affairs Advisory Committee's recommendations for energy education further indicate a bias against nuclear energy. All members contacted opined that since substantial financing of research and development is already provided to the nuclear industry, and since the nuclear industry has a great capability to provide public information on nuclear energy, the DOE should concentrate its funding on non-nuclear educational activities that lack industrial sponsorship. The Chairperson of the Advisory Committee explicitly said during a telephone interview with members of the Subcommittee's staff that she and several other Committee members fear that the DOE is spending too much money for educational programs on nuclear energy and insufficient amounts on educational activities on conservation. However, she had no data to substantiate this perception.

The Committee's negative attitude toward centralized energy and especially nuclear power is apparent through its resolutions. For example, those of February 3, 4 and 5, 1980 stated that "the Committee supports the urgent need for energy education (particularly in the conservation and solar areas) . . ." and "Committee members continuously supported local dissemination of information on decentralized energy production and conservation systems". To further this constricted approach to education, the Committee is seeking to have all of the DOE's educational projects reviewed and approved by the Office of Consumer Affairs, to establish a clearinghouse for Federal energy education programs, and to assume a leadership role in educational matters relating to energy by establishing and implementing a Federal Interagency Committee on Education. To promote these educational objectives, the Committee recommended at its meeting on October 29–30, 1979 that a "consumer achievement of the month award" be established to "promote energy conservation and alternate technologies the Committee wishes to advocate."

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[47] Listing of the Consumer Affairs Advisory Committee's Members, DOE, Consumer Advisory Committee, June 4, 1980.

[48] While this view is generally held among those opposed to nuclear power, the conventional wisdom is that nuclear power is the most economic electric energy source. This view was succinctly put by S. David Freeman, Chairman of the TVA at a conference sponsored by "The Energy Daily" on October 16, 1980. Freeman is quoted as saying "There is a lot of loose talk going around that nuclear power is uneconomic. Those folks haven't looked at the cost of building coal units that meet the New Source Performance Standards." He said that TVA's nuclear plants can produce a kilowatt-hour of electricity for three cents less than from a coal fired plant.

It is inappropriate and counterproductive for the Advisory Committee to espouse such biases on energy matters. Such action grossly misrepresents energy issues to the American consumers, the very people whose interests the Committee is supposed to serve. To assume that the further development of centralized energy technologies such as nuclear power or coal is not of interest or concern to the public is naive and counter to the intended function of the Office of Consumer Affairs. The actions of OCA appear to be more directed at molding public opinion than fostering public understanding.

The Office of Consumer Affairs' monthly publication entitled *Energy Consumer* further illustrates this bias. The heavy preponderance of articles on solar energy in *Energy Consumer* is readily apparent. The cover story of the August/September 1979 issue, for instance, is titled "A National Solar Strategy and Solar Resource Guide"; it is entirely devoted to demonstrating the importance of solar energy.[49] The October 1979 issue [50] is also completely filled with articles on conservation or solar technologies and every article in the February/March 1980 edition praises concepts for decentralized renewable energy.[51] On the other hand, the negative anti-nuclear sentiments of *Energy Consumer* are easily discernible in a recent issue devoted to energy education. One of the lead articles strongly condemns efforts of utility companies to educate local students on nuclear energy.[52] The article, authored by a representative of Ralph Nader's Center for Study of Responsive Law, berates the current nuclear industry's educational efforts and clearly shows a bias against nuclear energy.[53] The *Energy Consumer* had been justifiably characterized as "a terribly biased operation" and "an upfront anti-utility publication." [54]

Information on renewable decentralized energy sources is of significance to the public and should be included within any public information program of the DOE. However, such information presented to the exclusion of information on centralized energy sources is irresponsible.

3. EDUCATIONAL ACTIVITIES

The Department of Energy's educational effort includes no program for presenting an objective view of nuclear energy. In fact, according to the Department's annual status report for 1979, *Activities of the U.S. Department of Energy in Education*,[55] there are no educational activities that deal specifically with nuclear power. Yet, there are seven educational projects and programs on renewable forms of energy. Additionally, the OCA's published records of funding for public educational activities shows an emphasis on renewable energy resources to the exclusion of nuclear energy. The records also show no funding for educational activities of the Assistant Secretary for Nuclear Energy. The records of funding for FY 1979 and 1980 also reveal a

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[49] *The Energy Consumer*, DOE Office of Consumer Affairs, Aug./Sept. 1979.
[50] *The Energy Consumer*, DOE Office of Consumer Affairs, Oct. 1979.
[51] *The Energy Consumer*, DOE Office of Consumer Affairs, Feb. /Mar. 1980, p. 41.
[52] Sheila Harty, "Hucksters in the Classroom", *The Energy Consumer*, April/May 1980, U.S. Department of Energy, Office of Consumer Affairs, pp. 4–5.
[53] See *Energy Education Bulletin*, Atomic Industrial Forum, A Review of "Hucksters in the Classroom", Dec. 12, 1979.
[54] Dr. H. Peter Metzger, as quoted in *Reddy News*, May 1980. p. 13.
[55] Activities of the DOE in Education, Department of Energy, April 1980, DOE/CA–0002, pp. 3–5.

very heavy emphasis on outreach programs dealing with decentralized solar technology.[56]

Earlier efforts to address informational needs on nuclear energy resulted in publication of "Fact Sheets" which were characterized as stressing "the controversy and opposition rather than the technology" of nuclear power and accused of putting "the breeder and all nuclear power in the worst possible light." [57] These fact sheets are being rewritten by the National Science Teachers Association under contract to the DOE. While recent drafts [58 59] are not overtly anti-nuclear, they are riddled with meaningless and unnecessary phrases that connote a negative disposition toward nuclear energy. They unfairly place the burden of proof on nuclear power alone among energy sources to be shown unequivocally safe and economical. On the other hand, the draft of the Fact Sheet on biofuels for example strongly projects an overall positive image and suggests that gasohol is being unfairly opposed by those "who have seized on recent unfavorable net energy studies to downplay its potential." [60] It states unequivocally that conversion of free cornstalks or local wood to alcohol "is economically justified even if the total energy balance is negative." [61]

Putting nuclear energy in a defensive position while optimistically praising the unproven potential of other energy sources encourages the reader to assume *a priori* that nuclear power is a fundamentally flawed technology. The Fact Sheets fail to compare safety aspects of power from nuclear fission with other types of power generation and thereby prevent cultivation of a proper perspective on the relative risks associated with them.

A thorough examination of the DOE's educational programs confirms the apparent favoritism shown renewable energy sources and the bias against centralized energy sources. This pro-solar, anti-nuclear viewpoint is also put forward through the Department's Program for Faculty Development Projects in Energy Education. The objective of this program is ostensibly to educate secondary and primary school instructors on a wide variety and well balanced set of energy topics. Yet, even the guidelines that outline prospective educational activities are not objective and balanced. They place renewable energy resources at the top of the list of six major subject areas which do not even mention nuclear energy.[62]

In view of the slanted nature of this program's guidelines, it is not suprising that the workshop proposals were dominated with ideas for programs on conservation and solar energy. Of the 397 proposals submitted for this program in early 1980, the central topic of 70 was conservation, an important topic which requires public education; 20 dealt exclusively with solar energy topics; and only four workshops were specific to nuclear energy. The remaining 302 dealt in general with energy, the environment, and the economy.[63] Of the 96 approved

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[56] Office of Consumer Affairs Budget Justification, DOE Outreach and Institutional Intereaction Activities, FY 1979, 1980.

[57] Letter dated May 3, 1978 from Bill Perkins, Communications Manager, Atomic Industrial Forum, Inc., to John Fowler of the National Science Teachers Association.

[58] Draft copy of Fact Sheet No. 12, *Conventional Reactors*.

[59] Draft copy of Fact Sheet No. 13, *Breeder Reactors*, DOE.

[60] Draft of fact sheet on Biofuels, National Science Teachers Association under contract to the DOE, p. 18.

[61] Ibid. p. 20.

[62] Prospective Offerors, Faculty Development Projects in Energy Education 980, Education Programs Division, Intergovernmental and Institutional Relations Office, DE-PAOA-791R10223, p. 3.

[63] DOE Faculty Development Proposal Review, Computer Print Out, Dec. 21, 1979.

proposals for workshops in 1980, the topic of 33 was either solar energy or conservation, while only one specifically addressed nuclear energy. The remaining 58 were of general nature.[64] The lone project on nuclear energy was not even funded by the Office of Consumer Affairs, which funded the rest of these summer programs, but by the Office of the Assistant Secretary for Nuclear Energy.

In addition to this program, the DOE sponsors a broad range of other educational activities for public school teachers and pupils. However, the interdisciplinary materials on energy used in them are also largely devoid of discussions on or reference to nuclear power. For instance, at least two of these instructional packets produced for grade school and junior high school students by the National Science Teachers Association should discuss nuclear energy but do not. An example is the packet entitled, "The Energy We Use". Prepared for first graders, the packet makes no mention of nuclear power except in a play at the end of the booklet in which the atom is depicted as giving off "poisonous waste"; yet, there are lengthy descriptions and discussions of other forms of energy and no discussion of their "poisonous waste."[65] "Energy Transitions in U.S. History", for eighth and ninth graders, also makes no reference to nuclear energy, even though the sample final examination tests students on all other significant forms of energy.[66]

Furthermore, out of eleven award winning educational activities prepared by elementary and high school teachers for DOE, none deal with nuclear energy while two deal specifically with renewable energy resources.[67] An introductory activity for second and third grades entitled "Energy Units for Primary Grades" does not even include nuclear under "what are our main sources of energy?" and lists nuclear last behind solar, wind, and geothermal under "what are the energy sources of the future?" [68]. A series of grade school teaching aids called "Science Activities in Energy" [69] ignores nuclear energy completely, yet includes three packets on renewable energy including one clearly biased against nuclear energy. Book III of the "Easy Energy Reader" series, for instance, explicitly objects to nuclear energy because of concerns on safety, waste disposal, terrorism, and proliferation.[70] Yet, similar concerns are not mentioned in relation to other energy forms.

Battelle Columbus Laboratory's independent review and evaluation of the DOE's curricular materials on energy [71] corroborates the claim of favoritism toward solar energy vis-a-vis nuclear energy. This report found that curricular packages on solar energy are by

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[64] Directory of Faculty Development Projects in Energy Education—1980, Energy Workshops for Elementary, High School, and College Teachers, DOE, Office of Consumer Affairs, Education Division, DOE/CA–0003.

[65] *The Energy We Use: Grade 1*, Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy, Prepared for the Office of Consumer Affairs, Under contract EX–76–c–10–3841, Feb. 1980.

[66] *Energy Transitions in U.S. History*, Grades 8–9, Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy, prepared for the Office of Consumer Affairs, Under contract EX–76–c–10–3841, June 1979.

[67] *Award Winning Energy Education Activities for Elementary and High School Teachers*, DOE, Assistant Secretary for Intergovermental and Institutional Relations, Education Programs Division, Office of Education, Business, and Labor Affairs, August 1979, p. ii.

[68] Ibid. p. 2–3.

[69] Science Activites in Energy, prepared for the DOE by the American Museum of Science and Energy, Oak Ridge Associated Universities and assisted by Lawrence Hall of Sciences under Contract DE–AC05–760R00033.

[70] *Energy: What Can We Do Right Now?* Easy Energy Reader, Book III, DOE, EDM–1139, May 1930, p. 5.

[71] *Review and Evaluation of AOE Energy Education Curriculum Materials*, prepared by Battelle, Columbus, Ohio, for DOE, Office of Education, Business and Labor Affairs, under contract EG 77–C–01–6037, Oct. 9179.

far the most commonly distributed materials. Currently, no curricular materials focusing on nuclear energy are distributed by the DOE. An educational guide on nuclear power was prepared two years ago, but was never approved for publication. It is important to recall that when informational material on nuclear energy was readily available, there was a heavy demand for it. Battelle Columbus Laboratory also found that distribution of the Department's informational bulletins on conservation and especially solar energy far outnumber bulletins on nuclear energy. Also, Battelle reports that users by a margin of six to one perceive needs for additional information on renewable energy resources over information on nuclear energy. This relatively high demand for materials on renewable energy, especially solar energy, reflects the Department's exaggerated promotion of solar energy for satisfying near and mid-term requirements for energy. The availability of these materials on renewable resources has been widely publicized.

4. FUNDING OF ANTINUCLEAR ORGANIZATIONS

The Department of Energy is providing financial assistance to several groups that are outspokenly opposed to nuclear energy, a practice which is legally questionable. For example, the DOE's Office of Consumer Affairs summary of grants and contracts in FY '79 shows entries in the amounts $111,526 and $20,000 for the Environmental Action Foundation,[72] a highly vocal environmental activist group, which was founded by a prominent advocate of solar energy, Denis Hayes, presently the head of the DOE's Solar Energy Research Institute. The clearinghouse publishes and distributes several publications that are claimed to shrilly attack nuclear energy and electrical utilities.[73] One such publication is *Power Line*, a periodical outspoken in opposition to electrical utilities and the policies and programs supported by the utilities. *Power Line* has characterized the nuclear power industry as the "35 billion dollar habit,"[74] sardonically suggested that reactor makers and utilities view the recent turmoil in the Mid-East "as the best thing that's happened to (their) . . . industry in a long time,"[75] encouraged readers to purchase the Environmental Action Foundation's new book entitled "The Case Against Nuclear Power",[76] and notified readers of a job opening for a spokesman against nuclear energy.[77] Besides partially funding Environmental Action's clearinghouse, the DOE's Office of Consumer Affairs notified the public in its *Energy Consumer* of information available in *Power Line* and encouraged subscription to *Power Line*.[78]

This office also provided $27,400 to the National Consumer Law Center, a litigation center which was one of the three major antinuclear intervenors in the proceedings of the New Hampshire Public Service and the Federal Energy Regulatory Commission on the Seabrook nuclear plant. Although the funds were not provided for direct intervention against the nuclear power plant, but to oppose the

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[72] DOE Office of Consumer Affairs Contracts/Grant Summary of FY 1979 Transactions.
[73] H. Peter Metzger, *Government-Funded Activism: Hiding Behind The Public Interest*, presented at the 47th Annual Conference, Southeast Electric Exchange, March 26, 1980, p. 7.
[74] *The Power Line*, Vol. 5, No. 9, April 1980, Environmental Action Foundation, p. 1.
[75] Ibid. p. 8.
[76] *The Power Line*, Vol. 5, No 5, December 1979, Environmental Action Foundation, p. 6.
[77] Ibid, p. 8.
[78] *The Energy Consumer*, DOE Office of Consumer Affairs, May 1979, p. 15.

public utility's including in its basis for rates the costs of construction work in progress, they served to strengthen an organization actively opposed to nuclear energy.

Attacking the financial structure of utility companies, especially in regard to construction projects, has proven to be an effective tactic for inhibiting development of nuclear power and is used by many groups opposed to nuclear energy. If the DOE cannot identify organizations to address legitimate concerns of the Department that do not take active positions against established programs of the Department, then the basis for supporting nongovernmental organizations must be questioned. Unfortunately, certain activists and groups publicly opposing or supporting some action will base their case on issues which are not of real concern to them but which can be used to gain public emotional support for their views. It is precisely because of this problem that elaborate rules have been established to avoid conflicts of interest. It appears, however, that the OCA is either unaware of the ethical implications of these actions or has chosen to ignore them.

Another blatant example of the DOE's support for an organization overtly against nuclear energy was the support and endorsement of the recent Black Hill's Alliance International Survival Gathering, held July 18–27, 1980. It received a $10,000 grant from the Office of Consumer Affairs to defray the cost of organizing the event. The Black Hills Alliance's unsolicited proposal (#P80–00489) was approved by the Director of the Office of Consumer Affairs on April 9, 1980.[79] This Survival Gathering, which received endorsement from the Environmental Coalition on Nuclear Power,[80] was characterized by the press as a "conference on anti-nuclear tactics", and "a microcosm of the whole anti-nuclear movement".[81] During the ten day gathering, the four to five thousand participants were presented, through intensive educational forums, materials depicting nuclear energy as tremendously hazardous. They were entertained by the "Nuclear Regulatory Commission", a singing group which "added a special flavor" with its sarcastic name, and the "Plutonium Players" which "performed skits about the follies of nuclear energy to the delight of a mostly young audience." [82] This 1960's style anti-nuclear gathering was visited by the mobile exhibit on alternative energy, which is sponsored by the DOE and the Tennessee Valley Authority.[83]

The event was highly criticized by local residents of the Black Hill-area. One hundred thirty persons signed a petition to their Congressman protesting "the use of federal funds to subsidize and add credence to such organizations as the Black Hills Alliance and its survival gatherings".[84] The Black Hills Alliance is but one of the organizations strongly opposed to nuclear energy that the DOE works with. Others include Ralph Nader's Critical Mass, the Critical Mass Citizen Groups, the Grand Junction Public Energy Information Office, and the Union of Concerned Scientists.[85]

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[79] DOE Procurement/Financial Assistance Request—Authorization, Headquarters Procurement Operations, Office of Consumer Affairs, #P80–00489, April 10, 1980.
[80] News from the Environmental Coalition on Nuclear Power, Editor: Jim Perkins, July 1980.
[81] Sioux Falls Arqusleader, "Protesters Stress Nuke Education", July 27, 1980, p. 1A, 2A.
[82] *The Rapid City Journal*, "Gathering Concerts Draw About 6,000", July 27, 1980.
[83] The Rapid City Journal, "Gathering Participants Fold Tents, Drift Away", July 28, 1980, p. 1.
[84] Petition to Congressman James Abdnor, 2d District, South Dakota.
[85] Office of Consumer Affairs Budget Justification, Partial List of Organizations Working with Office of Consumer Affairs, DOE, April 18, 1980. Tab c.

The DOE's open involvement with such groups is tantamount to taking an official position in opposition to nuclear energy. Certainly, the DOE's financial assistance to groups opposed to nuclear energy represents an unacceptable conflict of interest and a potentially illegal misuse of its funds. The DOE may argue that they are not funding anti-nuclear activists (Black Hills Alliance being a notable exception) but eductional activities for groups, some of which may be opposed to nuclear energy. This falacious argument could be used, for example, to justify public financial support of the Communist Party, which has some public support and is capable of conducting educational activities. Clearly, the DOE has no authority to fund groups and activities whose purposes are in direct conflict with its statutory responsibilities or do not provide a balanced view on energy matters.

The availability and usefulness of federal funds for support of activities in opposition to nuclear energy is clearly shown in a "Resource Guide on Fundraising" for anti-nuclear groups, which states that Federal "grants for energy education can be used in part to educate people about the hazards of nuclear power".[86]

C. Activities of Other Offices in the DOE

The DOE's prejudiced views on energy production for the future as expressed through its Office of Consumer Affairs' educational and informational programs is just one facet of a more pervasive policy in the Department to comfort the American public with the false notion that requirements for energy can be met with conservation and renewable resources. In fact, the Department is actively discouraging utilities from adding new capacity, thus encouraging dependence on foreign sources of power.[87] These activities are in conflict with the national goal of becoming independent of foreign sources of energy and ignore all projections that call for a leveling of energy consumption only in the next century. These actions may also give birth to a critical shortage of electricity in various sections of the country as was previously noted.

These actions are being conducted under the umbrella of the Public Utility Regulatory Policies Act of 1978.[88] The purposes of the Act are to encourage conservation of energy supplied by utilities; optimization of efficency of use of facilities and resources by utilities and setting of equitable rates to electric customers.

This act is being implemented in a manner which may not meet these objectives. A policy spelled out in a recent memoranda from Deputy Secretary Sawhill illustrates this point.[89] This plan basically calls for the Economic Regulatory Administration (ERA) of the DOE "to expand the intervention program—to increase the attention our interventions give to supporting utility efforts to increase efficient use of energy and to promote renewable resources." The clear thrust of this initiative is away from centralized generating stations to alternative decentralized generation technology. This policy is partly in

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[86] NIRS Resource Guide, "Grassroots Fundraising", undated, Nuclear Information and Resource Service, Washington, D.C.

[87] *The Energy Daily*, August 8, 1980.

[88] Public Utility Regulatory Policies Act USC 2601.

[89] Memorandum from John C. Sawhill to Distribution in DOE, "Assistance to DOE Intervention Program in the Promotion of Utilities Support for Renewable Energy Sources and End-use Efficiency in Utility Regulatory Proceedings," July 30, 1980.

response to the inability of utilities to justify and build new generating capacity because of political and institutional barriers, mostly governmentally initiated. Utilities are being forced to consider solar power as competitive with coal and nuclear power, even though solar costs are actually much higher. While this imbalanced perspective has the beneficial effect of optimizing conservation and load sharing, it is clearly designed to hamper the development of centralized power.

This policy was apparently formulated for the Deputy Secretary of Energy by an aide who was previously employed by the Natural Resources Defense Council, an adamant opponent of nuclear energy. Bearing on this is disturbing evidence[90] that the Administration, by promoting political activity through financial support of private organizations and placement of prominent activists in regulatory and policy-making positions, is setting the Nation on a course leading to energy shortages of a magnigude that could lead to immense social upheaval.

Despite the passage of the Powerplant and Industrial Fuel Use Act of 1978 (P.L. 95–620) and the proposal of a major initiative in the form of the Oil Backout Bill (S. 2480) during the 96th Congress, the DOE public information program is not aimed at public education on the relative risks and benefits of burning coal for electric power generation.

The Department of Energy publishes and widely disseminates booklets, pamphlets, and "fact sheets" on selected energy topics. For example, it has recently published numerous documents and papers on solar energy, other renewable energy resources, and conservation. This is commendable in that the publications help to inform the general public on the benefits of conservation, ways to achieve it and the potential alternative energy sources that may contribute to our domestic energy production. However, there are few Departmental publications that properly explain centralized energy sources.[91] [92] In particular, they fail to explain the necessary contribution of nuclear energy to our nation's energy capacity now and in the future. Instead, the DOE's publications deal almost exclusively with decentralized, renewable forms of energy and specific ways to conserve fuel.

These publications are highly promotional of the decentralized energy forms and biased against the centralized forms, in particular nuclear energy. For instance, one pamphlet distributed in conjunction with the Department of Housing and Urban Development and entitled "Solar Energy and Your Home" explicitly questions the acceptability of nuclear power.[93] The pamphlet says "that we will not be able to find enough nuclear reactors to meet our growing needs before the oil and gas run out" and "nuclear energy exploitation raise(s) serious environmental issues." On the next page, the same pamphlet unequivocally praises solar energy by indicating that "solar energy systems are nonpolluting and ecologically harmless, and the sun's power is inexhaustible."[94] Another small booklet promotes passive

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[90] H. Peter Metzger, "The Coercive Utopians: Their Hidden Agenda", June 1979, Public Service Co. of Colorado, P.O. Box 840, Denver, CO 80201

[91] United States Department of Energy, Citizen Awareness Publications, Technical Information Center, Feb. 1980, EDM–350(12–79).

[92] *EIA Publications*, DOE, Energy Information Administration, Office of Energy Information Services, Feb. 1980, DOE/EIA–0149.

[93] *Solar Energy and Your Home*. Department of Housing and Urban Development, Office of Policy Development and Research, in Cooperation with DOE, Feb. 1980 HUD–PDR–183(12), pp. 3 & 4.

[94] As previously shown, all energy sources have environmental, safety, institutional and economic problems. These issues are being systematically ignored in discussions of soft energy technologies.

solar technology by referring to it as "a sound investment in the future," [95] and other publications promote energy storage, geothermal energy, alcohol fuels, wood fuel, and small hydroelectric power facilities. The DOE also distributes several glossy booklets encouraging home owners to install solar devices because they enhance the home's resale value.[96] [97] Additionally, the DOE circulates a two-page summary to instruct and guide local groups in activities promotional of renewable sources of energy.[98] A recent Solar Factsheet of the DOE offers this value-laden conclusion: "No other energy-producing device will save as much energy over as long a period of time as dependably as a passive solar building".[99]

Few of the publications address the technological, environmental, and especially economic problems associated with solar energy. The informational materials simply ignore many of the controversies that surround some low-technology, decentralized approaches to exploiting solar energy such as: ability to meet energy needs; economics, compatability with existing distribution systems; and hazards from manufacture and use.

Recently, the DOE initiated efforts to publish information for the general public on nuclear energy. However, this effort is dwarfed by current efforts in promoting solar energy. A booklet that was released in November of 1979 and entitled *Nuclear Power from Fission Reactors-An Introduction* is a purely instructional booklet produced by the Department's Office of Nuclear Energy Programs. Neither the Office of Consumer Affairs nor the Public Affairs Office made any contribution to the formulation of the small booklet nor do they distribute it. In dramatic contrast to the highly promotional publications on solar energy and conservation which are widely disseminated by these offices, the nuclear power booklet is written in an extremely dry and benign style. The booklet makes no effort to promote nuclear energy, nor even to describe its current role; its stated objective is merely given as "to provide a basic understanding of nuclear fission energy and different fission reactor concepts." A review of this booklet conducted by the Department's Office of Consumer Affairs inexplicably denounced it as being misleading and "vulnerable to criticisms from public groups." [100] These comments are similar to the written remarks solicited by the Subcommittee staff from active anti-nuclear groups.[101] [102] In contrast to this highly negative view, the booklet has been characterized by independent reviewers as a competent but too brief product.[103] The booklet is, in fact, a sterile presentation of only the barest facts about nuclear power.

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[95] *Passive Solar Heating*. Office of Conservation and Solar Applications, Systems Development Branch, Passive Solar Systems Development Program.

[96] *Selling the Solar Home '80*, Market Findings for the Housing Industry, Housing & Urban Development in Cooperation with DOE 1980, p. 25.

[97] *Solar Homes Sell*, Prepared for the DOE by the Southern Solar Energy Center, under contract DE-ACO2-79CS30166.

[98] *Reaching Up, Reaching Out: A guide to organizing local solar events*, Solar Energy Research Institute, Fall 1979, stock number 061-000-00345-2.

[99] David Holzman, *Passive Solar Buildings Soak Up Sun*, Housing and Urban Development, Office of Policy Development and Research in Cooperation with the DOE, Jan. 1979, p. 7.

[100] Tina Hobson, DOE Memorandum for Woody Cunningham and Jack Crawford on the Brochure, "Nuclear Power from Fission Reactors", March 13, 1980.

[101] Michael Faden, Legislative Counsel for the Union of Concerned Scientists, Letter to Congressman Mike McCormack, July 29, 1980.

[102] Letter dated June 25, 1980 from Richard P. Pollock, Director, Critical Mass Energy Project, to Congressman Mike McCormack.

[103] Letter dated June 22, 1980 from Joseph M. Dukert, Consultant, to Congressman Mike McCormack.

Another periodical of the DOE that less blatantly exhibits this biased viewpoint is a publication from the San Francisco regional office, *DOE Information: A News Summary*. A random survey of ten recent issues of *DOE Information* [104] revealed that many of the articles depicted nuclear energy in a relatively unfavorable light. One recent article, for example, reports that nine employees at a nuclear facility received radiation exposure and contamination even though the exposure was not above safe levels and caused no adverse effects. The same newsletter also reports a hand injury to the operator of a vending machine at a nuclear power plant and it further reports that a worker there required two stitches after he bumped his head.[105] Publishing these trivial events serves no other purpose than to cast a pall over nuclear power. This is irresponisble in the context of the contrasting treatment given to other energy technologies.

Two recent issues of *Energy & Education*, which is published by the National Science Teachers Association and funded and distributed by the DOE, also show a strong bias against nuclear power. The June, 1980 edition [106] for example, contains a book review praising the Union of Concerned Scientist's new book, *Energy Strategies Toward a Solar Future* which outlines a strategy for a future without nuclear energy. No reviews or books showing the need for nuclear energy were even mentioned, for example, the Resources for the Future's book *Energy in America's Future—The Choices Before Us*, and the previously mentioned National Academy of Sciences' CONAES Report. Several pro-solar energy articles appear in the same issue. Presentation of an unbalanced view of energy resources in a federally funded periodical is detrimental to public policy and education, especially since the intended audiences, primarily high school students and teachers, are particularly vulnerable to biased information. Again the approach of the Office of Consumer Affairs seems to be to mold public opinion rather than provide the facts for rational decision making.

The Department's propensity for providing unbalanced public information also is evident in more subtle ways. For example, the DOE's Office of Environmental Assessments recently published a handbook characterizing various energy technologies.[107] The handbook's emphasis is on environmental considerations and its purpose is "to present environmental characterization information in a useful format for environmental policy and planning analyses relating to energy technology development and deployment".[108] The publication claims "to represent the best available data on resource requirements and environmental effects for each principal technology considered".[109]

Under "Environmental Concerns" for "Open Pit Uranium Mining" it lists among other items "disposal of mine drainage water", "trace metal contaminants", "mine tailings disposition", and "accident risks—flooding, fire and washout, blasting, heavy equipment accidents

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[104] *Department of Energy Information*, issues #30, 31, 33, 34, 36 in 1979, and #10, 15, 18, 19, 20 in 1980.
[105] Department of Energy, *Information: News Summary*, Region IX External Affairs, No. 13-80, April 1980.
[106] *Energy & Education*, (June, 1980), Published by the National Science Teachers Association, Vol. 3, Number 5.
[107] *Technology Characterization: Environmental Information Handbook*, (DOE/EV0072), U.S. Department of Energy, June 1980.
[108] Ibid. p. vii.
[109] Ibid.

and pit wall failure".[110] It does not list these concerns for "Surface Coal Mining-Eastern", "Surface Coal Mining-Western" or "Surface Oil Shale Mining"[111] even though these concerns would apply similarly for all three types of surface mining. The handbook also includes under "Environmental Concerns" for "Underground Uranium Mining" "accident risks from failure of ventilation systems, flooding, electrocution, fire, accidents with heavy machinery for excavating and transporting rocks, blasting and failure of mine roofs and walls",[112] but does not list these concerns for "Underground Coal Mining-Eastern" or "Underground Oil Shale Mining",[113] for which they would also apply. Through omission these characterizations of environmental concerns would tend to favor the development of one centralized energy source (coal) over another (nuclear).

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[110] Ibid. p. 3.
[111] Ibid. pp. 27, 29, 143.
[112] Ibid. p. 5.
[113] Ibid. pp. 31, 145.

V. THE DOE'S VIEWS

The Department of Energy, especially the Office of Consumer Affairs, energetically defends its posture on nuclear energy. Numerous officials of DOE and private citizens involved in the Department's projects sincerely believe that the emphasis on decentralized energy and conservation programs and the lack of comparable informational and educational programs on nuclear energy is justified. Officials of the Department have argued that the nuclear energy industry and electrical utilities already have ample resources to adequately educate the public on the need for and benefits of nuclear energy.[114] Former Undersecretary Dr. John Deutch argued at Congressional hearings that we "can count on the private sector doing this (provide information on nuclear power) for us".[115] However, this view fails to recognize the effectiveness of government sponsored educational efforts and that they can be more effective because they are generally perceived as more credible and objective than industry.[116]

The enormous scope of the DOE effort to disseminate information was noted in the Office of Management and Budget 1980 Catalog of Federal Domestic Assistance. This report found for 1979 that more than 11 million pamphlets and booklets were distributed by DOE, 1,300 speaking invitations accepted and nearly 16 million people viewed agency exhibits.

The DOE has argued in defense of its biased educational activities that it must compensate for the past efforts of the Atomic Energy Commission (AEC) to promote nuclear power. Although promotion is one of its responsibilities, as previously noted, the DOE's views are inconsistent in that the actions of the Department's predecessor agencies, which are being criticized by the DOE and for which it believes recompense is demanded, are being aggressively utilized and expanded upon in its promotion of solar energy. If compensation for biased and distorted information is justified at all, the DOE should vigorously try to rectify the distorted view of nuclear energy that has developed over the past few years.[117] [118]

The DOE also has contended that because decentralized technologies and conservation require individual understanding and commitment, they are uniquely well suited for public educational material and programs. However, the need for public understanding

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[114] Letter dated August 18, 1980 from John M. Sullivan, Chief of DOE's Publications Division to Mr. Charles S. Shoup.

[115] Hearings before the Subcommittee on Energy Research and Production of the Committee on Science and Technology, U.S. House of Representatives. Pg. 19–20

[116] The Media Institute, "Television Energy News Covers NUCLEAR ENERGY—A Ten Year Perspective", 1979, p. 4.

[117] Resources for the Future National Energy Strategies Project, *Energy in America's Future: The Choices Before Us*, Johns Hopkins University Press, 1979.

[118] The Ford Foundation and Resources for the Future, Hans Landsberg, Study Group Chairman, *Energy, The Next Twenty Years*, Cambridge: Ballinger, 1979.

to permit the further development of centralized energy is at least as great as for development of decentralized energy. The generally negative public perception of the public utilities emphasizes this point. The concern expressed by the DOE over assuring that the controversies surrounding nuclear power are publicized also strongly emphasizes the great need for public understanding.

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