



UNITED STATES GENERAL ACCOUNTING OFFICE

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ENERGY AND MINERALS
DIVISION

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JANUARY 27, 1982

RELEASED

The Honorable Patricia Schroeder
House of Representatives

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Dear Ms. Schroeder:

Subject: GAO's response to DOE's comments on EMD-81-108, "Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities" (EMD-82-36)

On August 4, 1981, we issued a report to the Congress entitled "Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities" (EMD-81-108). That report, which was prepared at your request, noted that major changes are required in the safety and health oversight program at the Department of Energy's (DOE's) contractor-operated nuclear facilities. These changes are required to ensure that safety, health, and environmental standards are met. We recommended a major reorganization of DOE's safety and health program to increase oversight and independence. We also recommended other actions to correct specific program deficiencies and suggested that the Congress consider legislation to require the Nuclear Regulatory Commission (NRC) to review the safety of a number of DOE nuclear facilities, including several defense-related activities.

At your request, we did not obtain DOE's comments on our report. Instead, you asked DOE to provide you with its comments directly. On October 7, 1981, DOE provided those comments. You subsequently requested that we respond in a separate letter to the following four DOE criticisms of our report.

--"GAO fundamentally misunderstood the philosophy of DOE's approach to safety and health."

--"The GAO report did not note the fact that the NRC capability resides essentially in one area, light water commercial power reactors, and that the NRC lacks expertise in the technology associated with DOE production nuclear reactors and operations. Given this limited NRC technical expertise, it is unclear how NRC involvement would improve the safety of DOE's nuclear facilities or enhance the public perception of the safety record of these facilities--a record that compares very favorably with that of non-DOE facilities."

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--GAO did not "* * *" sufficiently note the high cost in effort and dollars that would be imposed as a consequence of any such review and evaluation by NRC. In DOE's view, this cost would not provide a commensurate benefit."

--"As GAO recognized, NRC oversight of this facet of DOE's defense responsibilities could result in serious interference with overall national security."

Following is our response to those specific criticisms. A detailed response to all of DOE's comments will soon be issued as a supplement to our issued report. This supplement will be delivered to you under separate cover and should be considered as an integral part of our earlier report.

DOE'S SAFETY AND HEALTH PHILOSOPHY

In stating that GAO failed to understand DOE's safety and health philosophy, DOE reiterated its view that safety and health is the responsibility of operating contractors and program management. DOE also explained that safety and health overview and policy promulgation is the responsibility of the Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness.

Pages two and three of our report explained DOE's philosophy. That philosophy is one with which we basically agree except it does not go far enough. We agree that day-to-day safety in the workplace is the responsibility of the operating contractor. In addition, we agree that program managers must constantly be aware of safety and health considerations. However, DOE's safety and health personnel located at headquarters and field offices lack the authority and independence to effectively carry out an independent regulatory and oversight function. This function should have the authority to ensure that safety and health regulations and standards are being enforced. The Congress saw the need for this independence and authority in the commercial nuclear industry and responded by creating NRC.

At DOE's headquarters, health and safety personnel lack the authority and independence to ensure implementation of safety and health standards and requirements. A recent DOE reorganization of the safety and health program has done little to improve that situation. The Operational and Environmental Safety Division--responsible for safety and health protection at all DOE facilities except nuclear reactors--reports to the Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness through several layers. This Division is buried too low organizationally to be effective. DOE's reorganization elevated one segment of the Division--the nuclear reactor safety group--to report to the Assistant Secretary. This move did not substantially alter the authority or independence of the

program. Safety matters must still compete with the programs and activities promoted by the program Assistant Secretaries. For example, because of conflicts caused by the need to obtain the concurrence of program Assistant Secretaries, requirements promulgated by safety personnel have taken as long as 4 years to issue. Moreover, DOE headquarters and field safety personnel informed us that these "requirements" are not mandatory. As a result, their implementation is not uniform.

In addition, DOE's safety and health personnel located at field offices do not have the independence to effectively provide safety and health regulation for DOE's nuclear operations. At some locations, safety and health field staff report to field office personnel with direct responsibility for production. This situation presents the opportunity for a conflict of interest between safety and production. Even in field locations where safety and health personnel report directly to the field office manager, the manager is ultimately responsible for production. Thus, because production goals often conflict with safety and health objectives, independence is lacking.

Therefore, we still believe DOE should establish a high-level, NRC-like, safety and health group to ensure the consistent implementation of safety and health regulations and standards. We believe this group should report as a staff function to DOE's Under Secretary. This arrangement would be similar to the organizational management used by the former Atomic Energy Commission (AEC) where the safety and health group reported directly to the General Manager (roughly equivalent to DOE's Under Secretary). This management appears to have provided a better framework to provide the authority the current program lacks.

In addition, field safety and health oversight personnel should report directly to the headquarters safety and health group. This arrangement in no way relieves the operating contractors or program managers from responsibility for day-to-day safety and health matters, but does offer better assurance that those managers and contractors uniformly enforce safety and health standards and requirements.

NUCLEAR REGULATORY COMMISSION
INVOLVEMENT IN DOE'S SAFETY PROGRAM

In our report (pages 45 through 47), we stated that DOE's efforts to assure the design safety of its older facilities are inadequate. DOE's safety analysis program, designed to provide such assurance, receives relatively low priority. Thus, many facilities have yet to be reviewed. In addition, safety analyses which have been performed were found to be inaccurate and incomplete. We suggested that the Congress consider legislation requiring NRC to review and evaluate--on a pilot program basis--a number and a

variety of DOE's nuclear facilities and processes, including a detailed review of plant operations, the contractors' design safety analysis methodology and report, and actions taken to mitigate hazards.

DOE did not agree with this suggestion, questioning NRC's expertise to conduct such a review and evaluation program, the cost of the effort, and the national security implications of implementing the program.

NRC has expertise to enhance
DOE's safety record

DOE was not convinced that NRC involvement in DOE's design safety program would improve the safety of DOE's nuclear facilities. It stated that

"* * * the GAO did not note the fact that the NRC capability resides essentially in one area, light water commercial power reactors, and that the NRC lacks expertise in the technology associated with DOE production nuclear reactors and operations. Given this limited NRC technical expertise, it is unclear how NRC involvement would improve the safety of DOE's nuclear facilities or enhance the public perception of the safety of these facilities."

We strongly disagree with DOE's statement that NRC expertise is limited to light water commercial reactors. While it is true that a large portion of NRC's attention is focused on light water reactors, NRC is and has been involved in a wide variety of nuclear activities. NRC has conducted safety reviews of DOE's Fast Flux Test Facility, the Light Water Breeder Reactor, the Fort St. Vrain high temperature gas reactor, and the Power Burst Facility (a fuel test facility). NRC is currently conducting a licensing review for DOE's Clinch River Breeder Reactor. NRC licenses uranium hexafluoride conversion facilities (the fuel process prior to uranium enrichment), nuclear fuel fabrication plants, spent fuel storage facilities, advanced fuel facilities, and plutonium processing facilities. NRC conducted preliminary licensing steps for DOE's High Performance Fuel Laboratory at Richland, and NRC conducts design reviews for naval reactors and the Navy's spent fuel activities. NRC has staff with special expertise including criticality experts, environmental engineers, health physicists, chemical engineers, and fire safety and emergency planning experts.

While it is true that NRC is not intimately familiar with the exact combination of processes at many DOE facilities, we believe that NRC has the capability to conduct the recommended

reviews, given that sufficient background material is made available. During our review work, we questioned NRC officials concerning their capability to conduct these reviews. These officials agreed that the capability certainly existed within NRC.

We would also point out that the expertise available within NRC would appear to greatly augment the expertise currently available within DOE. Although DOE takes issue with a statement contained in our report (page 33 of the report) concerning the lack of DOE expertise, closer inspection shows that our report clearly describes this as a finding noted during a DOE study of safety and health at DOE's nuclear reactors 1/. As stated in our report, this DOE study found that the nature of nuclear technology warrants reactor safety overview organizations with unique, technically qualified management whose nuclear expertise is beyond question. At DOE headquarters, however, the nuclear safety overview technical staff has been reduced from 17 in 1976 to 4 in 1981. The DOE study also found that although technical capability at DOE field offices varied widely, it was generally weak and inadequate. For example, at one field location, a safety analysis report could not be reviewed due to lack of technically capable staff.

GAO's suggestion for NRC oversight of DOE facilities would minimize additional cost

Our suggested legislation requiring an NRC safety review of DOE nuclear facilities was also viewed unfavorably by DOE from a cost and effort perspective. DOE commented that GAO did not

"sufficiently note the high cost in effort and dollars that would be imposed * * *. In DOE's view, this cost would not provide a commensurate benefit."

In our report, we did not include a detailed cost/benefit analysis. We did, however, comment, in general, on the cost and effort involved in NRC reviewing DOE facilities. On page 44, we noted that

"* * * NRC and OSHA regulation of DOE's nuclear facilities would provide the most program independence, uniformity, and public confidence that DOE's facilities are safely operated. Practical concerns, however--such as classification, budget limitations * * * somewhat mitigate the desirability of this alternative." (underscoring added)

1/"A Safety Assessment of Department of Energy Reactors," March 1981, DOE/US-0005.

As a more reasonable approach, therefore, we suggested a program requiring NRC to review a limited number and a variety of DOE nuclear facilities. We noted the budgetary impact on page 46.

"Although such a review will undoubtedly involve the commitment of additional staff resources, * * *."

We note that DOE's comments have not provided any additional insight into the cost/benefit of NRC participation. We believe that the NRC review of such a sampling of DOE facilities will limit the initial extent of the budgetary impact and will provide an indication of the cost effectiveness of pursuing such a review at all DOE nuclear facilities.

NRC has, in the past, also advocated a similar approach. In 1979, NRC studied extending NRC's licensing or regulatory authority to include DOE waste storage and disposal activities. During our review, an NRC official told us that although they did not intend to evaluate DOE's safety, health, and environmental regulations and programs, the staff found that DOE safety, health, and environmental oversight were inadequate. The study concluded that there appeared to be benefits--in the form of increased safety, health, and environmental protection--associated with NRC regulation of DOE waste management activities. At the same time, however, NRC noted that such regulation would be accompanied by unquantifiable increased costs. Therefore, NRC recommended a pilot program to determine, among other things, if the benefits from NRC oversight would outweigh the costs involved.

In short, the judgment that must be made is whether the benefits of NRC oversight--in the form of increased safety, health, and environmental protection and, perhaps just as important, increased public confidence--are worth the cost. A pilot program such as we and NRC have suggested would help the Congress make that judgment.

NRC oversight of DOE's nuclear facilities would not seriously interfere with national security

NRC involvement--of any sort--in DOE's nuclear weapons activities has nearly always been strongly opposed by DOE on the grounds that it would compromise national security. Our suggestion for NRC review of plant operations, the design safety analysis methodology and report, and actions taken to mitigate hazards at several DOE facilities also found disfavor within DOE based on national security implications.

In this regard, DOE's comment was to state that GAO accurately noted that an NRC role could have an adverse impact on DOE's national security mission in that the number of people with access to classified/restricted and nuclear weapons data would increase substantially. Apparently, DOE does not agree with our assessment that the impact could be minimized.

There are a number of options available which offer potential for NRC involvement with an acceptable national security impact. Limitation of the program to several DOE nuclear facilities initially decreases the amount of classified information available to NRC personnel by a considerable amount. In addition, the impact can be further diminished by limiting access to classified material to a small group of NRC employees. In any event, the impact on DOE's national security mission could not be characterized as substantial, as all participating NRC employees involved would have undergone background investigations and obtained clearances for dealing with classified information.

In past testimony before the Congress, DOE has argued against NRC involvement in DOE nuclear activities based on NRC's inability to make tradeoffs between safety and national security. That argument appears invalid. Prior to 1975, AEC combined both the nuclear promotion and regulation activities for nuclear energy. A sharp division existed, however, between these two activities and the regulatory group was, in effect, an independent organization. In the late 1960s and early 1970s this regulatory arm of AEC, which subsequently became NRC, conducted studies to compare several AEC reactors to licensed facilities. NRC officials informed us that although reactors at Savannah River and Hanford were found to be deficient in several respects and were effectively unlicensable, they concluded that the operations were justified because they were in the national interest. We believe this case shows that an independent regulatory body, such as NRC is capable of handling classified information and recognizing the relative importance of DOE's national security mission.

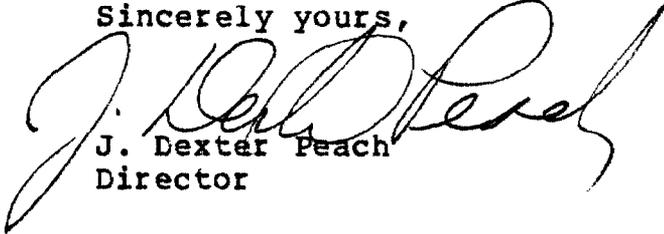
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In summary, nothing in DOE's arguments causes us to change any of our positions or recommendations. DOE's criticisms were rather broad and frequently did not specifically address the basic points we raised. Thus, DOE failed to provide specific facts to support its position. We believe our position has been reinforced by DOE's own reactor safety study and hope that DOE will reconsider its position and take action to improve its safety and health program.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time

we will send copies to interested parties and make copies available to others upon request. Also, as you requested, we will soon begin a detailed review (1) comparing our report with DOE's reactor safety study and (2) evaluating the adequacy of DOE's specific actions in response to both of these studies.

Sincerely yours,



J. Dexter Peach
Director