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SUPPLEMENT TO A REPORT BY THE

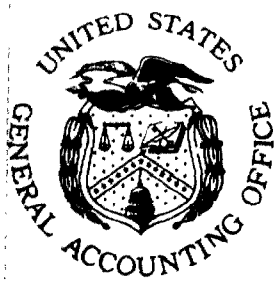
Comptroller General

OF THE UNITED STATES

Better Oversight Needed For Safety And Health Activities At DOE's Nuclear Facilities

This report supplement contains GAO's analysis and response to the Department of Energy's comments on the issued report. While disagreeing with many of GAO's recommendations, DOE did not directly address, in GAO's view, the primary issues contained in the report. DOE's comments have provided no basis for changing any of GAO's conclusions or recommendations.

GAO did not obtain DOE's comments at the time the report was issued pursuant to the request of Representative Patricia Schroeder. DOE provided its comments after issuance of the report.



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REPORT SUPPLEMENT:

GAO COMMENTS ON THE DEPARTMENT OF ENERGY'S REPLY TO THE GAO REPORT ENTITLED "BETTER OVERSIGHT NEEDED FOR SAFETY AND HEALTH ACTIVITIES AT DOE'S NUCLEAR FACILITIES"

This supplement to the report entitled "Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities" (EMD-81-108, Aug. 4, 1981) contains the Department of Energy's (DOE's) comments on that report as well as our evaluation of those comments. This supplement should be considered as an integral part of the issued report.

It is our normal policy to solicit and obtain DOE comments on drafts of reports concerning DOE activities. In this case, however, the requestor, Representative Patricia Schroeder, specifically asked that we not obtain DOE's comments. Subsequent to report issuance, DOE commented on the report.

Overall, DOE disagreed with most aspects of our report. DOE stated that we failed to understand its basic safety philosophy, failed to adequately emphasize its safety record, and presented misleading information. DOE also strongly disagreed with our suggestion that the Congress authorize the Nuclear Regulatory Commission to assist DOE in conducting safety reviews of its facilities.

DOE did not directly address many of the major issues covered in the report and often concentrated on peripheral concerns. Our report did mention DOE's safety record, and the examples contained in the report--which DOE claims are misleading--are supported by information provided by DOE. These, however, are not the major issues. Our major concern is that DOE's health and safety group lacks the authority and independence to ensure that safety and health standards and regulations are enforced. Thus, its program is not operating in a manner which will minimize the potential for future accidents.

DOE's comments provide no basis for changing any of our positions or recommendations. These positions, for the most part, are also supported by DOE's own reactor safety study. We are responding to DOE's comments because DOE did not address the primary issues discussed in our report, disagreed with many of our recommendations, and has given no indication that it will

further consider those recommendations. We hope that DOE reconsiders its position and takes action to improve its safety and health program.

Copies of this supplemental report are being sent to Representative Patricia Schroeder, other interested Members of Congress; cognizant committee and subcommittee chairmen; the Secretary of Energy; and the Chairman, Nuclear Regulatory Commission.

Contents

ABBREVIATIONS

AEC	Atomic Energy Commission
DOE	Department of Energy
FEMA	Federal Emergency Management Agency
NRC	Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

BETTER OVERSIGHT NEEDED FOR SAFETY AND HEALTH ACTIVITIES AT DOE'S NUCLEAR FACILITIES

D I G E S T

The Department of Energy (DOE) owns facilities for producing and processing special nuclear and radioactive material, developing and operating research reactors, producing nuclear reactor fuel, developing and fabricating nuclear explosives, managing nuclear wastes, and performing research. Operating these facilities involves some risk of worker injury or death from mechanical operations and industrial hazards--much the same as many other industries do--and from using toxic chemicals and handling radioactive materials. DOE's nuclear facilities, which are operated for DOE by contractors, are exempt from Nuclear Regulatory Commission and Occupational Safety and Health Administration safety and health regulation and oversight. 1/ Although DOE has historically had a good safety record, in terms of occupational injuries and radiation exposures, in the absence of such outside regulation and oversight, it becomes imperative that DOE maintain an aggressive program of monitoring and oversight to identify safety and health program weaknesses and prevent accidents. DOE has established a safety and health oversight program to provide independent, objective oversight of DOE's nuclear facilities; however, the organizational structure of its program inhibits independence and objectivity.

Representative Patricia Schroeder requested that GAO determine if the Nuclear Regulatory Commission or some other form of regulation would be preferable to the DOE oversight program currently in existence for safety and health matters at DOE's nuclear facilities. To determine what arrangement would provide

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1/Section 202 of the Energy Reorganization Act of 1974 provides an exception to this exclusion. The Nuclear Regulatory Commission has specific authority to license certain commercial and long-term, high-level radioactive waste storage activities.

the best safety and health oversight for these facilities, GAO reviewed the four functional program areas (occupational safety, emergency preparedness, facility design safety, and environmental monitoring) and sought to answer the following questions:

--Is DOE's program adequate to assure the employees at DOE's nuclear facilities are provided with safe and healthful working conditions? The short answer is "No." DOE needs to (1) improve its handling of employee complaints and safety and health violations and (2) develop a system for focusing oversight activities on high-risk hazards. GAO recommends that DOE take such action. (See pp. 6 to 13.)

--Is DOE providing adequate emergency preparedness guidance and assuring that DOE facilities are prepared to respond to nuclear accidents? The short answer is "No." DOE has provided limited guidance in this area. Overall, DOE does not know the status of the emergency preparedness programs at its facilities and needs to update their emergency preparedness to the post Three Mile Island state-of-the-art. GAO recommends actions to correct these, as well as several other, aspects of DOE's emergency preparedness program. (See pp. 14 to 27.)

--What actions is DOE taking to assure that its older facilities meet current safety criteria and standards? The short answer is "Very limited, if any." DOE's safety analysis program, designed to provide such assurance, receives relatively low priority and, as such, DOE is not aware of the level of design safety at many nuclear facilities. GAO recommends that DOE take several actions to expedite completion of safety reviews for all nuclear facilities. (See pp. 28 to 35.)

--How does DOE assure itself that information concerning radiological releases from DOE's nuclear facilities is accurate and reliable? GAO's answer is that DOE has little assurance. DOE currently relies heavily on data supplied

by its operating contractors. DOE needs to (1) provide guidance to the contractors to assure monitoring uniformity and (2) use independent monitoring data to verify data reported by the operating contractors. GAO recommends that DOE take such action. (See pp. 36 to 40.)

ALTERNATIVES FOR SAFETY AND HEALTH OVERSIGHT AT DOE'S NUCLEAR FACILITIES

The specific problems noted in DOE's occupational safety, emergency preparedness, facility design safety, and environmental monitoring programs warrant immediate corrective action. Some of these problems can be corrected by improved management techniques and a greater awareness of safety and health oversight. However, the underlying organization problems--a lack of headquarters authority and the decentralized nature of the program--may be the more serious problems over the long term.

GAO believes that several alternatives exist for improving the oversight at DOE's nuclear facilities. These range from reorganizing the entire safety and health function within DOE to having outside agencies provide safety and health oversight. Between these extremes lie various forms of cooperative oversight involving DOE and outside, independent agencies.

Each alternative has its own particular advantages and disadvantages. For example, an alternative advocating independent regulation of DOE's nuclear facilities by an outside agency would provide the surest increase in program independence and uniformity, and in the public's confidence that DOE's facilities are safely operated. Practical concerns, however--such as classification and access to nuclear weapons plants--mitigate the desirability of this alternative at this time.

Another alternative involves the reorganization of the safety and health organization within DOE. This alternative is very practical and does have potential for achieving the desired program

qualities. This alternative would also reduce safety and health competition with program offices and the safety and health organization would have the authority to mandate adherence to policy and standards. GAO, therefore, recommends that the Secretary of Energy elevate the oversight aspects of the headquarters safety and health organization to report, as a staff function, to DOE's Under Secretary.

Major changes are also required in the field/headquarters relationship. The current organization offers great potential for conflict between programmatic and safety and health activities. To increase program uniformity and to isolate field safety and health staff from program activities, DOE should reorganize those field organizations involved in safety and health oversight to report directly, and exclusively, to the elevated safety and health organization at headquarters. (See pp. 41 to 46.)

In response to a high-level DOE study of safety at DOE's nuclear reactors, DOE has plans for establishing a separate reactor safety organization. This organization, however, will be established at the same level as the existing safety and health program. GAO believes that this organization will do little to enhance the independence or authority of DOE's safety and health oversight program.

MATTERS FOR CONSIDERATION BY THE CONGRESS

Most of the problems noted during GAO's review can be corrected by reorganizing DOE's safety and health program and by implementing specific corrective action. One situation noted does not appear to be correctable by these actions, but does seem to be more suited to a cooperative arrangement between the Nuclear Regulatory Commission and DOE. In the past, DOE's efforts in ensuring the safety of its facilities have not been adequate. Of particular concern are those cases where safety analysis reviews have been conducted, but have failed to identify hazards which exist at the facility. A lack of technical expertise by DOE safety and health staff, acknowledged by DOE officials, may have

contributed to the incompleteness of these reviews. As a result, GAO believes that consideration should be given for an independent technical review of DOE's safety analysis program for nuclear facilities. Although such a review will undoubtedly involve the commitment of additional staff and resources, GAO believes that the Congress should consider legislation to require the Nuclear Regulatory Commission to review and evaluate a number and variety of DOE's nuclear facilities and processes, including detailed review of plant operations, the contractor's safety analysis methodology and report, and actions taken to mitigate hazards. This evaluation should also examine the adequacy of DOE's review of the safety analysis document. The Commission should report to the Congress on the results of its review and evaluation within 1 year. (See pp. 45 and 46.) Suggested legislative language to implement this program appears as appendix I of this report.

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As requested by Congresswoman Schroeder, GAO did not forward a copy of this report to DOE, the Occupational Safety and Health Administration, the Federal Emergency Management Agency, or the Nuclear Regulatory Commission for review and comment. The facts presented in this report were, however, discussed with DOE officials.

CHAPTER 1

GAO'S ANALYSIS AND RESPONSE TO THE DEPARTMENT OF ENERGY'S COMMENTS

On October 5, 1981, DOE responded to our report. This chapter presents our analysis of and response to DOE's general comments as well as to DOE's specific comments on each chapter of our report.

Generally, we find DOE's comments to be unresponsive to our report. Although DOE disagreed with most of our report, it did not directly address many of the major issues and often concentrated on peripheral concerns. In some cases, DOE's response is misleading or in direct contradiction to information we obtained from DOE during our review. Also of major concern is that DOE appears to be unwilling to accept that problems exist despite criticism from our report and from its own internal study.

DISCUSSION OF DOE'S OVERALL COMMENTS

DOE's overall comments focused primarily on two items. The first was that we did not understand DOE's basic safety and health philosophy and organization. The second major point was that our report did not recognize the excellent safety record at DOE's nuclear facilities. However, as discussed below and in our report, we did understand and agree with DOE's basic safety philosophy. Also, our report recognized the Department's safety record in a number of instances. However, neither of DOE's comments address the real issue in question--whether or not the Department adequately regulates its facilities to ensure that safety and health standards and regulations are enforced.

DOE's safety and health philosophy and organization

DOE stated that the basic premise of our report was that DOE's organizational structure inhibits independence and objectivity and that our report 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 managers. DOE also explained that the promulgation of policy on safety and health is the responsibility of the Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness.

Pages 2 and 3 of our report explained DOE's philosophy--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 and 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 and independence to enforce safety and health regulations and standards. The Congress saw the need for this authority and independence in the commercial nuclear industry and responded by creating the Nuclear Regulatory Commission (NRC).

At DOE headquarters, safety and health 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 organization 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 and health matters which affect DOE's program offices must still receive the concurrence of those offices. If the program office does not concur, a lengthy negotiation process results. For example, conflicts caused by the need to obtain the concurrence of program Assistant Secretaries have delayed issuance of advisory safety orders by as long as 4 years.

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.

We believe DOE should establish a high-level, NRC-type, 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 organizational arrangement appears to have provided the authority and independence DOE's 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 would provide a better framework for ensuring that those managers and contractors uniformly enforce safety and health standards and requirements.

DOE's safety record

As part of its overall comments, DOE also stated that our report failed to adequately recognize DOE's excellent safety and health record. As noted in our report (pages i, 2, 6, 36, and 41), DOE does indeed have a safety and health record equal to or better than most industries'. A good safety record is, however, no reason to be complacent, particularly in the nuclear industry. In the commercial sector, the Three Mile Island accident demonstrated that the lack of prior accidents does not necessarily indicate an excellent safety program. In that incident, the safety practices and procedures actually contributed to the problem. During our review of DOE's safety and health program, we noted inadequate safety and health policies and procedures which give us cause for similar concern.

DISCUSSION OF CHAPTER 2:
OVERSIGHT OF WORKER PROTECTION
NEEDS TO BE INCREASED

Our report often compared the Occupational Safety and Health Administration's (OSHA's) programs with DOE's program. DOE, commenting on that comparison, stated that

> "The GAO report states at page 12, 'We perceive no difference between the level of safety which should be provided for workers in private industries and DOE nuclear facilities.' DOE agrees with this point, but the report fails to note, as indicated earlier, that the protection afforded DOE contractor employees (as reflected in the available performance data) far exceeds that of private industry."

DOE agreed that workers at its nuclear facilities should be afforded the same degree of protection provided for workers in private industry. We disagree, however, that protection provided DOE contractor employees far exceeds that of private

industry. Our review revealed deficiencies in handling of employee complaints and informal treatment of violations of safety and health regulations. All of these deficiencies violated requirements placed on private industry by OSHA.

In regard to our review's criticism of DOE's handling of employee complaints, DOE stated

> "The GAO report also states at page 6, 'DOE needs to (1) be more responsive to employee complaints which may identify serious safety and health hazards; (2) treat safety or health violations in a more formal, uniform manner, including posting citations, setting time limits on corrective actions and following up to ensure prompt correction; and (3) systematically make use of available information to ensure that the most serious hazards are identified and eliminated before injury or exposure occurs.' In terms of the first two points, DOE Order 5483.1 establishes requirements for the investigation and response to complaints by DOE officials. This order clearly points out the requirements for posting violations, establishing abatement dates, assuring that corrective actions have been taken and handling 'imminent danger' situations. We do not believe that additional delineation of classes of violations such as 'serious' or 'other' is necessary to achieve more timely abatement of hazards, because the Field Office Managers already have the flexibility to assure such timeliness via other modes as discussed above. DOE agrees that systematic use of information is required and is currently upgrading a computerized Accident and Incident Reporting System in order better to analyze workplace hazard information and to prioritize future safety and health oversight activities based on the results of that analysis."

DOE's plans to implement a systematic hazard identification procedure are commendable; however, we are concerned that DOE still does not recognize major problems in its handling of complaints and safety and health violations. DOE Order 5483.1 clearly points out DOE's requirements for investigating and responding to employee complaints. This order provides a process which is equal to the complaint process for private industry's employees. However, our report and a prior GAO report 1/ seriously question the adequacy of the order's implementation. The examples discussed on pages 11 and 12 of this supplement demonstrate problems in handling complaints.

1/"Department of Energy's Safety and Health Program for Enrichment Plant Workers Is Not Adequately Implemented," EMD-80-78, July 11, 1980.

DOE Order 5483.1 also states requirements for handling safety and health violations. These requirements provide general guidance and permit a large degree of flexibility in implementation. Flexibility is a desirable characteristic in some cases. However, in this instance the "flexible" nature of the order and its lack of stringent requirements has created an environment where safety and health violations are being handled improperly. Abatement dates are not being established, and DOE employees are not ensuring that abatement actions have been taken. We believe that more explicit delineation of procedures must be taken to ensure employee safety and health protection.

DOE also disagreed with the words we used to describe the program priorities established by OSHA. DOE stated that

> "The GAO report states at page 6, 'In the private sector, OSHA gives employee complaints high priority among their activities, secondary only to imminent danger investigations and investigations of catastrophic or fatal accidents.' This statement is somewhat misleading in that it does not clearly point out the fact that OSHA has four priority levels for inspections, and that complaint investigations are assigned priority #3, which does not appear to be 'high' on the priority list. The OSHA inspection priorities, as prescribed by OSHA's compliance operations manual, are the following:
>
> First - Imminent Danger
> Second - Fatality/Catastrophe Investigations
> Third - Investigation of Complaints
> Fourth - Regional Programmed Inspections"

DOE's point in this instance is not clear. Our report clearly stated that employee complaints receive high priority at OSHA but are of lower priority than imminent danger and fatal or catastrophic injury accident investigations. OSHA employee complaint investigations are considered important enough to currently warrant allocation of over 60 percent of the workload (although in some years they accounted for more than 75 percent of the workload). Regional programmed inspections were not mentioned in our report, but are the lowest priority and comprise a considerably smaller percent of OSHA's workload.

DOE further commented to the effect that we did not understand its complaint program:

"As pointed out in the GAO report at page 6, DOE encourages complainants to attempt initial resolution of their complaints with their employers. In this situation, OSHA similarly attempts to encourage employees to resolve their safety and health complaints with their employers. An important point to note is that DOE procedures allow DOE contractor employees the option of filing complaints directly with the Department of Energy."

We recognize that in both DOE and OSHA, initial complaint resolution lies with the operating contractor. This is where the similarity ends. If an employee in private industry is not satisfied with the employer's complaint resolution, OSHA investigates. As first discussed in our report entitled "Department of Energy's Safety and Health Program for Enrichment Plant Workers Is Not Adequately Implemented" (see footnote on p. 9) and further confirmed in this report, DOE often relies exclusively on the contractor for resolution of complaints sent to DOE. DOE does not always investigate the complaints and does not ensure correction of the problem. This is particularly critical where an employee submits a complaint to DOE because the employee has not obtained satisfaction from within the company or because the employee desires anonymity.

DOE also cited two examples which it believed to be inaccurate and/or taken out of context. DOE wrote

"The two specific examples given of complaint resolution problems at the Rocky Flats Plant cited by GAO at page 7 contain erroneous information. In both cases DOE did investigate the complaints and determined that there were no serious hazards. Additionally, in the second example where supposedly there were 14 contaminated air incidents (alarms) in about 5 days, GAO failed to point out that in 13 of these alleged incidents, the radiation concentration guidelines were not in fact exceeded and in the remaining one it is questionable whether in fact the guidelines were exceeded. GAO also failed to mention that subsequent to these incidents, it was discovered that an employee had intentionally caused most or all of the false alarms in the air monitoring equipment. The employee was given a 30-day suspension and removed from plutonium areas for 1 year."

We find no basis in DOE's comments to question the facts presented in our report. Our information was obtained directly from the responsible safety and health officials. In the first example an employee noted an improperly installed filter on

a glove box. The employee reported this to his supervisor. Three days later, the area around the glove box was checked and found to be contaminated. DOE did investigate this incident and found an improperly installed filter. Respirator protection was prescribed, and the affected area was shut down. DOE did not, however, investigate the employee's complaint, which was a far more serious problem. The employee alleged that his supervisor allowed hazardous conditions to exist for 3 days to avoid a disruption to production.

In the second example, a complaint was filed alleging that workers performing certain glove box operations were--in 14 cases--exposed to air contaminated with radioactivity in excess of allowable standards. As stated in our report, according to the responsible safety and health officials, DOE did not investigate this complaint. Instead, DOE relied on an investigation conducted by the operating contractor which found that two of the incidents were false alarms. DOE informed us that because the 2 incidents were false alarms, the other 12 were probably also false alarms. We do not believe DOE can or should rely on the false alarm theory to explain all 14 contaminated air incidents--especially without an investigation to determine the origin of the remaining 12 incidents.

DOE commented on another example used in the report, stating that

> "In the case of the inoperable sump alarm problem at DOE's Richland Operations Office, described on page 10 of the GAO report, DOE's system for tracking and following up on inspection deficiencies was not adequate at that time and may have contributed to the overall delay in corrective action. This system has been improved to assure that similar problems do not recur. Also, in the case of the asbestos concern at Richland, we know of no instances of employee exposure to asbestos in excess of standards. In the November 1980 example, the Hanford Environmental Health Foundation report was in error and has subsequently been revised. All employees were wearing * * * approved respirators at that time."

DOE's actions to improve its system for tracking and following up on inspection deficiencies are commendable. We are still, however, concerned about the asbestos problem. As stated in our report, DOE has not conducted a comprehensive review of operations involving asbestos. It is not unusual, therefore, that DOE is not aware of any excessive exposures to asbestos. This was exactly the point of that section of

our report--that DOE is unaware of many safety and health hazards, in this case asbestos. In addition, we were concerned with DOE's statement that the Hanford Environmental Health Foundation's report had been found to be in error and was revised. The original 1980 report stated that two workers were exposed to airborne concentrations of asbestos in excess of 10 to 20 times the DOE allowable standard. One worker wore a disposable respirator--inadequate for proper protection in this type of work--during the entire operation. The other wore a similar respirator part of the time and an adequate respirator for the remainder of the time. In addition the report also stated that the use of respiratory protection should be relied upon only if engineering controls or changes in work practices are not practical. The firm recommended specific changes to the work practices to reduce the workers' exposures to asbestos. We discussed DOE's statement with the author of the original report. He confirmed that errors had been found and the report had been revised. However, he stated that the changes made were to correct typographical errors and provide additional, more detailed, information. He further stated that none of the information contained in the report concerning the respirators or the dosage levels was altered. We believe DOE's response to this example is quite misleading. An upcoming GAO review of DOE's actions to correct problems in its safety program will include a detailed review of the asbestos situation at Richland.

Our report noted that DOE handled many violations in an extremely casual manner. We recommended that DOE formally establish classes of violations based on danger to employees as well as establish requirements for posting violations, establishing abatement time frames, and ensuring abatement actions. DOE commented

> "Violations of standards noted on non-inspection visits to contractor facilities are not necessarily handled 'informally' as the GAO report suggests on page 10. For example, violations noted during appraisals are usually noted in the report or handled by separate correspondence with the contractor. Irrespective of the mode of notification--inspection, appraisal or other correspondence--abatement actions are required to be taken by the contractor, and a follow-up of significant violations is conducted by DOE." [Underscoring supplied.]

We realize that violations of standards noted on non-inspection visits are not always handled informally. Our objection is to any case where violations were treated informally. Despite DOE's stated requirements for abatement action and follow-up, such informal treatment has resulted in documented cases of not posting

violations or ensuring abatement. The sump alarm example on pages 12 and 13 of our report is a graphic illustration of repeatedly handling a violation informally, and repeated inaction to correct the problem. Once again, the problem lies not in the requirements, but in the implementation.

Finally, DOE disagreed with our observations concerning its use of "de minimis" violations. De minimis violations are defined as those which have no effect on employee safety. Recordkeeping violations, for example, are de minimis violations. DOE stated

> "In comparing DOE's procedures to those of OSHA for 'de minimis' notices, the GAO report at page 9, notes that DOE's 'Savannah River and Richland Operations Offices do not require contractors to post citations of de minimis violatons in the workplace, and Richland does not set abatement dates for de minimis violations.' The report does not, however, point out that OSHA also does not send de minimis notices to the employers or require posting or abatement. Instead, the notices are sent to OSHA Headquarters for review, analysis and possible future use. The 'serious' and 'other' type hazards classification scheme of OSHA ultimately determines the amount of fines levied against employers, but does not contribute to the timely abatement of serious hazards."

We believe that DOE may have misunderstood the thrust of our discussion of de minimis violations. We observed DOE using de minimis citations for violations which clearly jeopardize employee safety and health. This is a misuse of this type of citation, because it bypasses requirements for posting, setting an abatement date, and following up, thereby increasing the risk of employee injury. Discussions with OSHA officials revealed that OSHA rarely uses de minimis violations and, when used, are intended only for violations which have no direct bearing on employee safety or health.

DISCUSSION OF CHAPTER 3:
"DOE'S RADIOLOGICAL EMERGENCY
PREPAREDNESS NEEDS TO BE UPGRADED"

One of the primary findings in Chapter 3 of our report was that emergency preparedness functions within DOE were fragmented. DOE disagreed, stating

> "On page 16, the GAO Report suggests a centralized coordinated emergency preparedness program is needed at DOE Headquarters. The Department inherited from its predecessor agencies, and has maintained, an"

"effective, high level emergency preparedness program which emphasizes response to nuclear accidents. The success of this program was demonstrated in the Department's response to the TMI accident. The Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness manages the overall DOE emergency preparedness program for DOE-owned nuclear facilities and for response to non-DOE nuclear accidents. The responsibility for managing the emergency preparedness program for emergencies involving weapons and terrorist related nuclear emergencies has been assigned to the Assistant Secretary for Defense Programs in accordance with his nuclear weapons and security program responsibilities and because of his inherent expertise in dealing with these program areas.

"The Secretary's reorganization of February 24, 1981, provided for emergency preparedness policy making within the Department to be consolidated in the Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness and the designated Emergency Coordinator for the Department now reports to this Assistant Secretary. Three orders on Emergency Preparedness, replacing interim guidance which remained from the predecessor agencies, were published on August 13, 1981. The orders establish the policy and designate responsibility to appropriate offices. The orders also provide a mechanism for management of major emergencies through the Emergency Action Coordinating Team."

DOE commented that we failed to cite its excellent record in response to nuclear emergencies, such as the Three Mile Island accident. We are most concerned that throughout our audit work and in its response to our report, DOE failed to differentiate between emergency response and emergency planning. We are aware that DOE has teams trained to respond nationwide, within 24 hours, to a nuclear emergency. Our report, however, dealt with emergency planning--the program to provide for immediate on-site, local and State action in response to a nuclear emergency--not with emergency response. Without trying to minimize the value of DOE's emergency response teams, on- and near-site emergency planning is essential during the first few minutes of an emergency to provide for proper evacuations, notifications, and provision of medical and law-enforcement services.

We found that DOE's radiological emergency planning program has not received sufficient priority and, in the event of an accident at a nuclear facility, may not be prepared to adequately

protect the public, the environment, and property from the effects of a radiological release. DOE agreed with our recommendation to begin reviewing emergency preparedness programs at field offices and to emphasize a program of drills simulating nuclear accidents. We believe these actions will vastly improve DOE's ability to provide immediate on-site action in response to nuclear emergencies.

DOE also commented on its February 24, 1981, reorganization of emergency preparedness functions. The organization structure in existence after DOE's reorganization was the one which we reviewed and found to be fragmented. All field offices included in our review agreed with this assessment and commented that they did not know which group to turn to in order to obtain program direction. In addition, we found the designated emergency coordinator to be little more than a title, despite 5 years of evolution. Like other parts of DOE's safety and health program, the emergency coordinator has done little to ensure implementation of regulations and directives.

Our report also recommended that DOE provide support for the mission of the Federal Emergency Management Agency (FEMA). DOE agreed with our analysis that the primary reason for its lack of support was a staffing problem. DOE is taking steps to provide 32 additional staff.

We recognize that DOE issued three emergency preparedness orders on August 13, 1981. As requested by Representative Patricia Schroeder, we will be reviewing the adequacy and the implementation of these orders during an upcoming review.

DISCUSSION OF CHAPTER 4:
"ADDITIONAL EFFORT NEEDED TO ENSURE
SAFETY OF DOE'S OLDER NUCLEAR FACILITIES"

Our report concluded that safety analyses for DOE's older nuclear facilities were receiving low priority and, as a result, DOE cannot be aware of all hazards which may exist. DOE disagreed, stating

> "GAO stated at page 28 that although DOE began conducting safety analyses for existing facilities nearly 10 years ago, DOE has not established detailed program guidelines or timeframes for completion of these analyses, and as a result many facilities still have not been analyzed to determine what hazards exist.
>
> "In March 1979, DOE issued Order 5481.1, entitled 'Safety Analysis and Review System,' which established uniform requirements for the preparation and review of safety analyses for DOE operations."

"In accordance with this order all new nuclear facilities completed in the last 10 years (e.g., the Savannah River (SR) and Los Alamos National Laboratory plutonium facilities, the tritium facility at Sandia-Livermore), those in construction (e.g., Gas Centrifuge Enrichment Plant, Rocky Flats plutonium facility), and those in the design state (e.g., Defense Waste Solidification Plant at Savannah River, Waste Isolation Pilot Plant) have had or will have a Safety Analysis and Review prior to operation. In each case, the Safety Analysis and Review has been in preparation since the inception of the respective projects.

"Target completion dates pursuant to the Order have been established by the field offices for a Safety Analysis and Review for each existing nonreactor nuclear facility. A Safety Analysis and Review as performed by DOE is an extremely thorough, detailed and costly procedure. As examples of the current Safety Analysis Review activities for existing facilities, approximately $2-3 million per year is being expended by the Oak Ridge Operations Office at the three Gaseous Diffusion Plants in an effort which is expected to extend over the next 3 years. At the Y-12 Plant there is a $5 million effort extending through FY 1987, and at Oak Ridge National Laboratory the effort amounts to $2 million through FY 1985. The National Lead of Ohio review is expected to be finished in FY 1983 and AiResearch is completing a $225 thousand review this year.

"Each existing nuclear facility that has not had a completed Safety Analysis and Review has been subject to hazard analyses or evaluations conducted prior to startup and periodic surveillance and inspection efforts after startup. In addition, safety studies, evaluations, design reviews, etc. have been conducted to ensure that modifications, changes or operating problems are adequately understood and appropriate controls established. Thus, although safety analyses have not yet been completed for all existing nonreactor nuclear facilities, their safe operation has been assured by extensive reviews of the facilities, safety improvements, and an ongoing safety program for additional reviews and appropriate safety controls."

DOE's comments addressed its policy without specifically addressing the problem we raised. The basic facts have not changed. DOE's Order 5481.1 requires uniform safety analysis and reports.

However, despite 10 years of effort, many safety analysis reviews of DOE's older facilities will not be completed until the end of this decade. Additional full-time, dedicated staff would be needed to expeditite the completion of safety analysis reviews. Completing these reviews is important because many of DOE's facilities were built before modern nuclear design and construction standards were formulated. In addition, each DOE operations office conducts safety analyses differently. Safety analysis reviews conducted and reports issued by different field offices vary widely in methodology and content.

We disagree with DOE's statement that all facilities are covered by hazard analyses, evaluation, or safety reviews and therefore safe operation is ensured. At several locations, hazard analysis is merely an opinion as to whether or not any hazard exists at a facility. A DOE official responsible for the safety analysis program informed us that, without completed safety analyses, DOE was simply unaware of the type and seriousness of hazards at numerous nuclear facilities.

DOE's failure to specifically address the problems raised in our report is graphically illustrated by the examples on pages 31, 32, and 33 of our report. These examples identified instances where, even after safety analyses were completed, DOE and the operating contractor remained unaware of extremely serious safety and health hazards. DOE's comments did not address this problem.

It was because of DOE's failure to adequately carry out this function that we became skeptical of DOE's effort to comprehensively identify and correct potential safety and health hazards at its nuclear facilities. We continue to believe it is imperative to interject NRC's assistence and oversight--on a trial basis, at a limited number of facilities--into DOE's safety analysis process.

Our report noted that when DOE has performed a safety analysis review and has found a safety or health hazard, it has not always taken action to eliminate the hazard. DOE disagreed:

> "The GAO report at page 31 alleges that DOE does not always eliminate or mitigate identified hazards. Improvements are continually being proposed for DOE nuclear facilities. These improvements may be the result of a newly prepared SAR [Safety Analysis Report], an improved safety concept, good safety practice, or any combination of these. A review of the record since the Rocky Flats fire of May 1969 shows that DOE has expended significant funds for environment, safety, and health improvements. A major review program, the 'Fire Safety and Adequacy of Operation Conditions' program, begun in 1969, identified over $500 million in upgrading"

"projects throughout AEC. By December 31, 1972, nearly $62 million of the $500 million in Line Item projects alone had been completed. In addition, over $100 million has been expended for operating, capital equipment and general plant projects funds. The single largest project, Project 71-9, of this overall upgrading initiative included the construction of replacement plutonium facilities at Los Alamos National Laboratory and Rocky Flats. The fiscal year 1980 authorization by Congress of an additional $7 million brought the total for Project 71-9 alone to $287 million. Furthermore, DOE's review of authorized Line Item projects identified nearly $80 million for industrial safety and fire protection upgrading in the last 5 budget years alone.

"In summary, safety upgrading is a major and continuing program in all DOE operations and one that is conducted at a high level of expenditure."

Again, DOE has not addressed the basic problem identified in our report and has provided gross, overall statistics to support its committment to safety. The question is not how much is being spent but how much is being accomplished. While DOE and its predecessors have spent considerable funds and efforts in response to the 1969 Rocky Flats fire, we do not believe it is relevent to any discussion of safety analysis reviews. The actions cited were taken only after a disasterous fire at a DOE nuclear facility. The purpose of safety analysis is to identify and eliminate or mitigate hazards before an accident. Failure to properly conduct the safety analysis process leaves DOE in a position similar to that of the Rocky Flats fire--a position of only being capable of reacting after the hazard has occurred.

Our report cited a DOE study which concluded that DOE lacked the technical expertise to adequately perform its duties. DOE's response took issue with that statement:

"The GAO report found at page 33 that in some cases DOE safety personnel, both at Headquarters and in the field, lacked the technical expertise necessary to perform their duties. DOE does not agree that either Headquarters or field personnel to which this comment was directed lack the technical expertise necessary to perform their duties. Nevertheless, DOE recognizes the crucial importance of technical expertise in the safety area and is actively taking steps to enhance the quality of its safety expertise by, for example, emphasizing"

"a high level of technical skills in filling the previously discussed 32 new safety positions recently allocated to the field offices."

Although DOE takes issue with the statement contained in our 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 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 was 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.

DOE also took issue with an example which demonstrated a situation where DOE knew of a hazard, yet took no action to correct it. DOE stated:

"The GAO report at page 34 pointed to the plutonium processing facility at the Mound site at Miamisburg, Ohio, as an example of problems in the Safety Analysis and Review program. In this case the Safety Analysis and Review concluded that the plant could continue to operate without hazard to the employees, the public and the environment, except for the potential dispersing of plutonium oxide as a consequence of seismic and tornado events. The GAO report did not point out that, as a result, DOE relocated those processing operations having the potential for dispersion of plutonium oxide to new facilities at the Savannah River Operations and Los Alamos sites and closed the processing operation at Mound. The GAO report also incorrectly noted at page 34 that a $1.5 million project to upgrade the plutonium processing facility to resist tornadoes was not funded by DOE. Actually, the $1.5 million project was to relocate water towers that provide fire protection to part of the Mound site. The water towers could have failed in the event of a tornado, and possibly have fallen on the plutonium processing facility. This particular upgrade project was authorized in fiscal year 1980. Although these towers no longer represent a hazardous"

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

"situation with the relocation of the plutonium operation to Savannah River, the towers are still important for fire protection and are being rebuilt because of the tornado risk."

Much of the information DOE presents directly conflicts with information obtained from DOE officials during our review. In April 1981, DOE officials at the Albuquerque Operations Office (responsible for operations at Miamisburg) informed us that although DOE had moved some of the plutonium operation from Miamisburg, much of the operation still remained. During the same time frame, officials at DOE headquarters confirmed that movement of the water towers had not yet been funded despite being among the five highest priority safety projects for at least 3 years.

We also believe DOE's comments severely understate the hazard. According to DOE's safety analysis, the consequence of tornado or earthquake damage to the plant could be devastating, resulting in excessive radiological exposures, fatalities, evacuation of the general public, and damages of over $25 million.

In response to a request from Representative Patricia Schroeder to review DOE's actions to correct problems in its safety program, we will review DOE's actions concerning the plutonium processing plant at Miamisburg, Ohio, and will attempt to reconcile these discrepancies.

DISCUSSION OF CHAPTER 5: "OPPORTUNITIES TO INCREASE RELIABILITY OF RADIOLOGICAL MONITORING PROGRAM"

Our report noted that while DOE's operating contractors are reporting that their operations are conducted well within radiological environment standards, DOE's environmental-monitoring program lacks consistency from contractor to contractor and from field office to field office. We made several recommendations to increase program consistency. DOE commented:

"The GAO report suggests at page 40 that DOE issue radiological monitoring oversight (appraisal) requirements for mandatory application to all DOE facilities. In fact, DOE Orders 5480.1 and 5482.1 already make basic monitoring and reporting requirements mandatory at all DOE facilities. These Orders are supplemented by detailed guidance in DOE/EP-0023, to ensure that all substantive aspects of basic Departmental requirements are addressed.

"Flexibility, purposefully built into the program, is necessary for the effective and efficient operation of DOE environmental programs because of"

"the great variability in function and environmental setting of each DOE facility. Each facility is unique in regard to the types, quantities and forms of radionuclides that can be released to the environment. The characteristics of the receiving environments also vary from site to site. Such parameters uniquely determine the type, location, and frequency of sampling at each particular site. For example, in the case of domestic well monitoring, if a well is down-gradient and near a facility handling a highly mobile species such as tritium, sampling must be more frequent than if the well is near a facility handling a radionuclide that would move slowly in groundwater. Another important factor in determining intensity of environmental sampling is the in-depth nature of monitoring programs at DOE sites. That is, DOE facility effluents are monitored prior to and during their release to identify problems long before they can accumulate to measurable levels in offsite environmental media. Each point of release is assigned an operating limit which if exceeded would result in corrective action to prevent the release of unacceptable levels of radioactive materials to the environment. Therefore, emphasis is placed on ensuring immediate and reliable detection of radioactive materials in the effluents as well as in environmental media.

"Overall, DOE believes that it has an effective environmental monitoring program, but recognizes the need for diligence in ensuring reliability and quality in sample collection, analysis, evaluation, and reporting."

DOE's citation of orders 5480.1 and 5482.1 is somewhat misleading. These orders do little to provide a uniform, comprehensive radiological-monitoring program for DOE's nuclear facilities. DOE Order 5482.1 is a 9-page document which basically provides for periodic appraisals (evaluations) of contractors' environmental monitoring programs and lists a number of general factors to be considered in those appraisals. DOE Order 5480.1 contains a 3-1/2 page chapter on environmental pollution which--in very broad terms--delineates the overall environmental responsibilities within DOE. As stated in our report, DOE does have other guidance available for use by the operations offices. While this guidance is quite specific in places, it is general in others. More importantly, it is only guidance, and implementation is not required. In several of the locations included in our review, implementation was inconsistent with the DOE guidance.

We recognize that some flexibility is required because of the vast differencs among the facilities and their locations. What causes our concern is allowing so much flexibility that a facility such as the one at Rocky Flats, Colorado--in existence for 29 years--is just now studying whether milk and other substances should be monitored for radiation. We believe that DOE should provide minimum requirements--not guidance--for monitoring certain substances to better protect the environment and surrounding communities, and carry out sufficient oversight to ensure that the requirements are implemented.

DOE also commented on another of our suggestions:

"The GAO report suggests at page 40 that DOE develop a coordinated system whereby radiological monitoring data supplied by operating contractors is verified with data from State or local government agencies with monitoring capability. The use of State and local environmental data to verify DOE contractor monitoring results is one of the means that frequently are used by contractor and field office staff to check the correctness of contractor generated environmental data. DOE believes, however, that it has established more effective and efficient means of assuring data quality and reliability, in that the DOE contractor radiological monitoring programs are far more extensive and sophisticated than the respective State and local programs and therefore provide greater statistical quality in the contractor data. Further, the assurance of quality in DOE contractor environmental monitoring is far more fundamental than the comparison of a few data points derived by an independent agency. Of greater importance to DOE are: contractor management sensitivity to Quality Assurance (QA) needs; qualified contractor personnel; adequate funding; the existence of a contractor QA program in support of the monitoring and analytical program; written procedures for monitoring, analysis and QA; a well designed monitoring program; high quality equipment and facilities for calibration, monitoring, sampling and analysis; internal periodic self audit and assessment; use of laboratory standards and interlaboratory comparison services; independent overview (including appraisal) by DOE; and systems of records for the QA, internal audit and overview activities."

"It is important also to note that EPA, States, local jurisdictions, the press, and others routinely are provided copies of site environmental monitoring reports and have every opportunity to question any of the data reported."

We agree that the primary means of monitoring the environment surrounding DOE's nuclear facilities should be the contractors' own systems. What we are suggesting does not detract from DOE's current system, would not be difficult, and would not cost anything. We are not suggesting that other sources would necessarily be more reliable--although in some cases they may be--but are suggesting that DOE obtain environmental data on its plants from other sources which are already gathering such data. This would provide a simple, cost-free way of verifying environmental data submitted by the contractor. Such verification is especially important in today's nuclear climate where any release usually results in negative publicity. Such publicity can be a motive for erroneous reporting. In addition, many operating contractors operate under cost-plus-incentive fee contracts which can financially penalize these contractors for radioactive releases to the environment. We agree that the other factors listed by DOE as being important are very important; however, we fail to see their relevance to our point. We do not see how our suggestions conflict with carrying out DOE's other functions.

Finally, DOE took issue with our finding that published environmental summaries contained substantial errors which could have been corrected with data in DOE's possession. DOE stated

"The GAO report notes at page 38 that substantive errors occurred in a 1979 report concerning monitoring data at the Pantex Plant. The errors cited in that report are regretted, but they proved to be inconsequential. The errors occurred not in the 1979 report, as stated by GAO, but in the 1977 and 1978 reports. Dummy effluent data used to test a modeling program were inadvertently left in the program at the time the annual population dose was calculated for use in the site reports. As a result, the population dose was underestimated by a factor of ten. However, since the correct calculated dose was about 0.0001 percent of the permissible dose, either estimate of the population doses would have been inconsequential."

The differences in report dates is difficult to reconcile. Our records show the proper date of the report, provided by DOE officials, to be 1979. In any event, this is not a significant

point. What is significant is that DOE's argument seems to be that because the releases were not in excess of standards, the errors are not significant. This example demonstrates DOE's total reliance on contractor-supplied information and that DOE is not making use of other available information that could be used to verify its data. In this case, verifying data was available in-house, but DOE was not aware of the error. Another Federal agency noticed the error, using DOE's data, and brought it to DOE's attention. We continue to believe DOE should make use of all available data, internal and external, to verify operating contractor environmental data and reports.

DISCUSSION OF CHAPTER 6:
"CHANGES IN SAFETY AND HEALTH
OVERSIGHT FOR DOE'S NUCLEAR FACILITIES
CAN INCREASE INDEPENDENCE AND UNIFORMITY"

Chapter 6 of our report summarized our overall findings and concluded with a suggestion that the Congress consider enacting a cooperative program between NRC and DOE. The objectives of this program would be to allow NRC to review and evaluate a number and a variety of DOE's nuclear facilities and processes, including a detailed review of plant operations, the contractors' safety analysis methodology and report, and actions taken to mitigate hazards. This evaluation should also examine the adequacy of DOE's review of the safety analysis document. NRC should report to the Congress on the results of its review and evaluation within 1 year. At that time, the Congress could decide on the need for further NRC involvement.

DOE disagreed with our suggestion, stating:

> "In the brief discussion in the GAO report about possible disadvantages that would accompany an extension of NRC's regulatory authority to DOE facilities, it is accurately noted that NRC's role could well have an adverse impact on DOE's national security mission in that the number of people with access to classified/restricted data information and nuclear weapons data would increase substantially. Not sufficiently noted, however, is the high cost in effort and dollars that DOE believes would be routinely imposed as a consequence of any such NRC role, a cost that in DOE's opinion would not provide compensating substantial benefit. Also, 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.

"It must be understood that NRC has an arms-length relationship with its licensees and can only require actions for which there is authority under law. DOE, on the other hand, has a very tight control over the actions of contractors at its facilities. Many of these facilities have unique functions or specific military requirements. These facilities are government-owned; they are operated in accordance with government direction; and their overall level of safety is in accordance with funding actions taken by the Executive Branch and the Congress. In the past, substantial funds have been spent to upgrade facilities and to build new plants, such as the plutonium buildings at Rocky Flats and Los Alamos, which are in the forefront of protective design. Indeed, DOE provides NRC with data and expertise in developing its standards. In short, DOE is not just another nuclear operator but rather is a key element of the government's program to ensure the proper development and safe operation of nuclear power. Moreover, nuclear safety is a concern to which DOE's top management, including the Secretary, Deputy Secretary, and Under Secretary are all deeply committed.

"Indeed, the Secretary of Energy recently identified DOE's defense programs, including the safety aspects of those programs, as DOE's top priority. DOE has both the competence and the control necessary to make sure that the government-owned plants are operated safely, and its record compares favorably with any other segment of the industrial sector, including that regulated by NRC. Therefore, DOE sees little that would be accomplished by an NRC review of the DOE safety analysis program, and the attendent cost of such review would be very high."

DOE's arguments against NRC involvement in DOE's activities center on three issues, national security, cost and effort, and capability.

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. In this instance, DOE commented that we 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.

A number of options are available which offer potential for NRC involvement with an acceptable, short-term, national security impact. The program which we suggested is similar to a pilot program and would limit the program to several DOE nuclear facilities and to a specific time period. The effect of such a limitation would be to decrease 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. Thus, the impact of such a program on DOE's national security mission could not be characterized as substantial and, of course, all participating NRC employees involved would have to have already 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. This argument, in our view, is 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.

Our suggested legislation requiring an NRC safety review of DOE nuclear facilities was also viewed unfavorably by DOE from a cost and effort perspective. 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's 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.]

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 committment of additional staff resources, * * *."

DOE's comments have not provided, in our opinion, any additional insight into the cost/benefit of NRC participation. We believe that the NRC review of 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 its 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's 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.

Finally, DOE did not believe that NRC involvement in DOE's design safety program would improve the safety of DOE's nuclear facilities. We strongly disagree with DOE's statement that NRC expertise is limited to light water commercial reactors. It is true that a large portion of NRC's attention is focused on light water reactors; however, 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 hexaflouride 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. For example, NRC's staff include nuclear and 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. As stated previously, a DOE study found that DOE's nuclear safety overview technical staff has been reduced from 17 in 1976 to 4 in 1981. That study also found that although technical capability at DOE field offices varied widely, it was generally weak and inadequate.

DOE concluded by reiterating its committment to safety and emphasizing its safety record. We have already addressed those issues at the beginning of this chapter.

In summary, DOE's comments provide no basis for changing our positions or recommendations. In fact, DOE's criticisms were rather broad, frequently did not specifically address the basic points we raised, and failed to provide specific facts to support its position. We believe our positions, for the most part, are also supported 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.

APPENDIX I

Department of Energy
Washington, D.C. 20585

OCT 5 1981

Mr. J. Dexter Peach, Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

Enclosed are two copies of DOE's comments on GAO Report EMD 81-108 entitled "Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities."

Identical comments were provided to the House Committee on Government Operations and the Senate Committee on Governmental Affairs.

Sincerely,

William S. Heffelfinger
Assistant Secretary
Management and Administration

Enclosure

APPENDIX I

DOE COMMENTS ON GAO REPORT
"BETTER OVERSIGHT NEEDED FOR SAFETY
AND HEALTH ACTIVITIES AT DOE'S NUCLEAR FACILITIES"
EMD 81-108

The GAO report takes as its basic premise the view that the organizational structure of DOE's safety and health oversight program inhibits independence and objectivity. In GAO's view the underlying organizational problem is the decentralized aspects of the DOE safety and health program. To remedy this purported underlying problem, the GAO identified a range of possible alternatives, from reorganizing the entire safety and health function within DOE to having outside agencies, such as the NRC or OSHA, provide safety and health oversight.

In GAO's view the central issue in evaluating any safety and health program would seem to be the degree to which control of that program is centralized and independent of operational management. GAO took as its principal point of departure the view that a centralized and independent system would invariably provide a degree of protection of safety and health unmatched by any less centralized approach incorporated within program line management. GAO made no attempt to characterize the respective advantages and disadvantages of these two approaches, and furthermore, emphasized unduly the process of safety and health management to the virtual exclusion of any consideration of results. Indeed, GAO examined DOE's less centralized approach to safety and health with minimal emphasis upon the past performance under that approach even though, as was noted in the report, the Department's record of safety performance has been good. Although imperfections in DOE's approach were identified, none of them were sufficient to support GAO's recommendation that DOE's program be reorganized. Nor did the GAO report reflect sufficient awareness of the extent to which nuclear safety has in the current Administration become an item of the highest priority at all levels of DOE management, including at the Secretarial level itself.

In addition, there are two fundamental procedural problems in the GAO approach which significantly reduce the usefulness of the report as a constructive tool for the improvement of DOE operations. First, as discussed below, the report does not address recent changes in the DOE safety and health program which might have affected the report's recommendations. (See enclosed May 1981 report entitled "Action Plan in Response to March 1981 Report to NFPQT Committee.")

Second, because DOE did not have an opportunity to comment on the draft report, many of the specific examples used to support GAO's recommendations were taken out of context, were inaccurate, or reflected a misunderstanding of DOE's approach to its safety and health program. As a result of

these shortcomings the focus of DOE's response to the GAO report must be: (1) to explain DOE's basic approach to safety and health oversight, (2) to explain the reasons for DOE's reliance upon that approach, (3) to emphasize the favorable results which the DOE approach has produced, and (4) to correct or clarify, chapter by chapter, specific points raised in the GAO report.

1. It is important to note that the premise upon which the Department's safety and health program is based is that safety and health in DOE facilities are program management responsibilities. Program management in the context of DOE nuclear facilities begins with the Under Secretary. Assistant Secretaries have primary responsibility for the development of their assigned programs. Operations Office Managers are responsible to the respective Assistant Secretaries for execution of their programs. Safety is an integral part of the programs. Accordingly, line management responsibility for safe conduct of assigned programs flows from the Under Secretary through the program Assistant Secretaries to the Operations Office Managers. These programs are executed at DOE-owned, contractor-operated facilities. Independent overview of the safety and health program at these facilities is provided by the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness, who has no DOE nuclear program management responsibilities that would inhibit the independence of this overview function. The importance of that independent overview function is underscored by the fact that the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness, like DOE's other Assistant Secretaries, is a Presidential appointee. In addition to providing an independent overview to the Secretary and program officials of the adequacy of the program's safety and health compliance on a system-wide basis, the Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness is responsible for developing the Department's safety and health requirements. The program Assistant Secretaries assure in the initial planning and budgetary processes that resources are made available to comply with these requirements.

2. As discussed below, on the basis of extensive experience, DOE believes that the degree of protection afforded by this approach demonstrates its effectiveness. In addition, there are significant advantages to this approach in terms of other managerial considerations. First, the primary responsibility for ensuring safety and health is placed upon the individuals who have greatest control over program operations, i.e., the program managers themselves. This situation ensures clear lines of authority for implementing and maintaining necessary safety and health requirements, and assures that primary consideration for safety and health is included in <u>all</u> phases including procurement, development,

design, construction, operation and maintenance. Second, in order to be effective, safety and health requirements must be tailored to the design and characteristics of individual facilities. By conferring primary safety and health responsibility upon program managers, the DOE approach provides this essential flexibility. Third, since the emphasis of this approach is upon performance, and since a degree of managerial flexibility is built into the system, the development of innovative solutions to safety and health problems is promoted.

Another important aspect of the DOE approach is the promulgation, whenever necessary, of uniform safety and health requirements. In this regard the series of existing departmental safety and health orders applicable to all DOE facilities provide what DOE believes to be an optimal standardization of safety and health requirements. In recent months, in the wake of the Three Mile Island accident, there has been an increased recognition among DOE managers that these orders must reflect state-of-the-art knowledge and must be issued more expeditiously than had been done previously. Accordingly, these orders are now reviewed, revised, or new orders issued as a matter of high priority whenever appropriate. The nature of the orders is to outline what should be done rather than how it should be done. The system of orders specifically recognizes the need to maintain the benefits of the less centralized safety and health program, as discussed above.

3. The GAO report failed to compare the results of the DOE program with the record of facilities under OSHA regulation. Indeed, the safety record at DOE facilities compares very favorably with that of the industries regulated by OSHA, as illustrated by Table I, which compares the performance of DOE with the total industrial sector regulated by OSHA, and the chemical and allied products segment (that portion of the industrial sector most closely resembling the DOE system). It must be reiterated that DOE's safety and health program emphasizes performance as the foremost criterion of success.

In the emergency preparedness area, DOE has been lauded for its rapid and effective response to requests from the State of Pennsylvania and the Nuclear Regulatory Commission on March 28, 1979, when the Three Mile Island accident began. Within hours, Department personnel and aircraft were at the scene monitoring the environment for radiation. By the end of the first day, 20 DOE and DOE contractor personnel were involved in monitoring and assessment with double that number there on March 29, and over 100 three days later.

4. For the reasons discussed above, DOE believes that GAO fundamentally misunderstood the philosophy of DOE's approach to safety and health and failed to recognize the positive results of that approach. There are also a number of points

APPENDIX I

TABLE I

Year	Reporting Sector	*Total Recordable Cases Per 200,000 Employee Hours (TRC)	*Lost Workday Cases Per 200,000 Employee Hours (LWD)	*Lost Workdays Per 200,000 Employee Hours (LWD)
1975	DOE	3.3	1.0	17.6
	OSHA	9.1	3.3	56.1
	Chemical Industry	8.4	2.9	48.9
1976	DOE	3.7	1.1	19.0
	OSHA	9.2	3.5	60.5
	Chemical Industry	8.2	3.1	50.6
1977	DOE	2.9	1.5	16.0
	OSHA	9.3	3.8	61.5
	Chemical Industry	8.0	3.1	51.4
1978	DOE	2.8	1.2	18.0
	OSHA	9.4	4.1	65.5
	Chemical Industry	7.8	3.3	50.9
1979	DOE	2.2	1.1	17.8
	OSHA	9.5	4.3	67.7
	Chemical Industry	7.7	3.5	54.9
1980	DOE	2.3	1.1	17.4
	OSHA	**	**	**
	Chemical Industry	**	**	**

* Sources of Data

DOE - System Safety Development Center, EG&G, Inc., Idaho Falls, Idaho

OSHA - U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

**1980 Data for OSHA not yet available.

in Chapters 2 through 6 of the GAO report which require further discussion. The remainder of this DOE response addresses those points on a chapter by chapter basis.

Chapter 2 "Oversight of Worker Protection Programs Needs to be Increased"

° The GAO report states at page 12, "We perceive no difference between the level of safety which should be provided for workers in private industries and DOE nuclear facilities." DOE agrees with this point, but the report fails to note, as indicated earlier, that the protection afforded DOE contractor employees (as reflected in the available performance data) far exceeds that of private industry.

° The GAO report also states at page 6, "DOE needs to (1) be more responsive to employee complaints which may identify serious safety and health hazards; (2) treat safety or health violations in a more formal, uniform manner, including posting citations, setting time limits on corrective actions and following up to ensure prompt correction; and (3) systematically make use of available information to ensure that the most serious hazards are identified and eliminated before injury or exposure occurs." In terms of the first two points, DOE Order 5483.1 establishes requirements for the investigation and response to complaints by DOE officials. This order clearly points out the requirements for posting violations, establishing abatement dates, assuring that corrective actions have been taken and handling "imminent danger" situations. We do not believe that additional delineation of classes of violations such as "serious" or "other" is necessary to achieve more timely abatement of hazards, because the Field Office Managers already have the flexibility to assure such timeliness via other modes as discussed above. DOE agrees that systematic use of information is required and is currently upgrading a computerized Accident and Incident Reporting System in order better to analyze workplace hazard information and to prioritize future safety and health oversight activities based on the results of that analysis.

° The GAO report states at page 6, "In the private sector, OSHA gives employee complaints high priority among their activities, secondary only to imminent danger investigations and investigations of catastrophic or fatal accidents." This statement is somewhat misleading in that it does not clearly point out the fact that OSHA has four priority levels for inspections, and that complaint investigations are assigned priority #3, which does not appear to be "high" on the priority list. The OSHA inspection priorities, as prescribed by OSHA's compliance operations manual, are the following:

First - Imminent Danger
Second - Fatality/Catastrophe Investigations
Third - Investigation of Complaints
Fourth - Regional Programmed Inspections

° As pointed out in the GAO report at page 6, DOE encourages complainants to attempt initial resolution of their complaints with their employers. In this situation, OSHA similarly attempts to encourage employees to resolve their safety and health complaints with their employers. An important point to note is that DOE procedures allow DOE contractor employees the option of filing complaints directly with the Department of Energy.

° The two specific examples given of complaint resolution problems at the Rocky Flats Plant cited by GAO at page 7 contain erroneous information. In both cases DOE did investigate the complaints and determined that there were no serious hazards. Additionally, in the second example where supposedly there were 14 contaminated air incidents (alarms) in about 5 days, GAO failed to point out that in 13 of these alleged incidents, the radiation concentration guidelines were not in fact exceeded and in the remaining one it is questionable whether in fact the guidelines were exceeded. GAO also failed to mention that subsequent to these incidents, it was discovered that an employee had intentionally caused most or all of the false alarms in the air monitoring equipment. The employee was given a 30-day suspension and removed from plutonium areas for 1 year.

° In the case of the inoperable sump alarm problem at DOE's Richland Operations Office, described on page 10 of the GAO report, DOE's system for tracking and following up on inspection deficiencies was not adequate at that time and may have contributed to the overall delay in corrective action. This system has been improved to assure that similar problems do not recur. Also, in the case of the asbestos concern at Richland, we know of no instances of employee exposure to asbestos in excess of standards. In the November 1980 example, the Hanford Environmental Health Foundation report was in error and has subsequently been revised. All employees were wearing NIOSH approved respirators at that time.

° Violations of standards noted on non-inspection visits to contractor facilities are not necessarily handled "informally" as the GAO report suggests on page 10. For example, violations noted during appraisals are usually noted in the report or handled by separate correspondence with the contractor. Irrespective of the mode of notification--inspection, appraisal or other correspondence--abatement actions are required to be taken by the contractor, and a follow-up of significant violations is conducted by DOE.

° In comparing DOE's procedures to those of OSHA for "de minimis" notices, the GAO report at page 9, notes that DOE's "Savannah River and Richland Operations Offices do not require contractors to post citations of de minimis violations in the workplace, and Richland does not set abatement dates for de minimis violations." The report does not, however, point out that OSHA also does not send de minimis notices to the employers or require posting or abatement. Instead, the notices are sent to OSHA Headquarters for review, analysis and possible future use. The "serious" and "other" type hazards classification scheme of OSHA ultimately determines the amount of fines levied against employers, but does not contribute to the timely abatement of serious hazards.

Chapter 3 "DOE's Radiological Emergency Preparedness Program Needs to be Upgraded"

° On page 16, the GAO Report suggests a centralized coordinated emergency preparedness program is needed at DOE Headquarters. The Department inherited from its predecessor agencies, and has maintained, an effective, high level emergency preparedness program which emphasizes response to nuclear accidents. The success of this program was demonstrated in the Department's response to the TMI accident. The Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness manages the overall DOE emergency preparedness program for DOE-owned nuclear facilities and for response to non-DOE nuclear accidents. The responsibility for managing the emergency preparedness program for emergencies involving weapons and terrorist related nuclear emergencies has been assigned to the Assistant Secretary for Defense Programs in accordance with his nuclear weapons and security program responsibilities and because of his inherent expertise in dealing with these program areas.

The Secretary's reorganization of February 24, 1981, provided for emergency preparedness policy making within the Department to be consolidated in the Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness, and the designated Emergency Coordinator for the Department now reports to this Assistant Secretary. Three orders on Emergency Preparedness, replacing interim guidance which remained from the predecessor agencies, were published on August 13, 1981. The orders establish the policy and designate responsibility to appropriate offices. The orders also provide a mechanism for management of major emergencies through the Emergency Action Coordinating Team.

° The GAO report suggested at page 27 that DOE should provide the support necessary to carry out responsibilities delegated by FEMA in its national effort to improve emergency preparedness around nuclear facilities. In an interim rule

published on October 22, 1980, FEMA assigned to DOE responsiblity for (a) planning and preparedness for DOE facilities; (b) assisting State and local governments in preparing radiological emergency response plans for DOE facilities; (c) assisting FEMA in developing planning guidance to State and local governments; (d) participating with FEMA in assisting State and local governments in developing their radiological emergency response plans, evaluating exercises to test plans, and reviewing and evaluating the plans and preparedness; and (e) providing representation and support for FEMA's Regional Assistance Committees. No resources for carrying out the assignment were provided to the Department, and there has been no complete budget cycle since formulation of this assignment. Therefore, resources for carrying out the assignments had to be taken from existing authorized programs such as the Radiological Assistance Program. This assistance has been focused in the following areas: (a) assisting in the preparation and review of State and local emergency plans for coping with accidents at commercial nuclear power plants; (b) participating in drills and exercises at commercial nuclear power plants; and (c) assisting in emergency preparedness training for State and local officials. The Department is now taking steps to fund this effort, including allocation of 32 positions to Department field offices to upgrade the nuclear safety program. This allocation will include improved support to FEMA.

° The GAO report suggested at page 27 that DOE should establish requirements for annual appraisals of field office and contractor emergency preparedness programs and independently review and evaluate contractor drills on a regular basis. The Acting Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness, in accordance with the revision of DOE Order 5482.1, "Environmental Protection, Safety, and Health Protection Appraisal Program," issued on August 13, 1981, has established a revitalized appraisal program. This program will ensure the conduct of comprehensive appraisals (including emergency preparedness) of each field office on a two-year schedule. The first of these comprehensive appraisals will be conducted at the Richland office in late September 1981. DOE recognizes the desirability of conducting and evaluating contractor and field office drills. Depending on the availability of resources, the Department is planning an enhanced program of large drills simulating a nuclear accident at each of its major installations.

Chapter 4 "Additional Effort Needed to Ensure Safety of DOE's Older Nuclear Facilities"

° GAO stated at page 28 that although DOE began conducting safety analyses for existing facilities nearly 10 years ago, DOE has not established detailed program guidelines or timeframes for completion of these analyses, and as a result many facilities still have not been analyzed to determine what hazards exist.

In March 1979, DOE issued Order 5481.1, entitled "Safety Analysis and Review System," which established uniform requirements for the preparation and review of safety analyses for DOE operations. In accordance with this order all new nuclear facilities completed in the last 10 years (e.g., the Savannah River (SR) and Los Alamos National Laboratory plutonium facilities, the tritium facility at Sandia-Livermore), those in construction (e.g., Gas Centrifuge Enrichment Plant, Rocky Flats plutonium facility), and those in the design state (e.g., Defense Waste Solidification Plant at Savannah River, Waste Isolation Pilot Plant) have had or will have a Safety Analysis and Review prior to operation. In each case, the Safety Analysis and Review has been in preparation since the inception of the respective projects.

Target completion dates pursuant to the Order have been established by the field offices for a Safety Analysis and Review for each existing nonreactor nuclear facility. A Safety Analysis and Review as performed by DOE is an extremely thorough, detailed and costly procedure. As examples of the current Safety Analysis Review activities for existing facilities, approximately $2-3 million per year is being expended by the Oak Ridge Operations Office at the three Gaseous Diffusion Plants in an effort which is expected to extend over the next 3 years. At the Y-12 Plant there is a $5 million effort extending through FY 1987, and at Oak Ridge National Laboratory the effort amounts to $2 million through FY 1985. The National Lead of Ohio review is expected to be finished in FY 1983 and AiResearch is completing a $225 thousand review this year.

Each existing nuclear facility that has not had a completed Safety Analysis and Review has been subject to hazard analyses or evaluations conducted prior to startup and periodic surveillance and inspection efforts after startup. In addition, safety studies, evaluations, design reviews, etc. have been conducted to ensure that modifications, changes or operating problems are adequately understood and appropriate controls established. Thus, although safety analyses have not yet been completed for all existing nonreactor nuclear facilities, their safe operation has been assured by extensive reviews of the facilities, safety improvements, and an ongoing safety program for additional reviews and appropriate safety controls.

• The GAO report at page 31 alleges that DOE does not always eliminate or mitigate identified hazards. Improvements are continually being proposed for DOE nuclear facilities. These improvements may be the result of a newly prepared SAR, an improved safety concept, good safety practice, or any combination of these. A review of the record since

the Rocky Flats fire of May 1969 shows that DOE has expended significant funds for environment, safety, and health improvements. A major review program, the "Fire Safety and Adequacy of Operating Conditions" program, begun in 1969, identified over $500 million in upgrading projects throughout AEC. By December 31, 1972, nearly $62 million of the $500 million in Line Item projects alone had been completed. In addition, over $100 million has been expended for operating, capital equipment and general plant projects funds. The single largest project, Project 71-9, of this overall upgrading initiative included the construction of replacement plutonium facilities at Los Alamos National Laboratory and Rocky Flats. The fiscal year 1980 authorization by Congress of an additional $7 million brought the total for Project 71-9 alone to $287 million. Furthermore, DOE's review of authorized Line Item projects identified nearly $80 million for industrial safety and fire protection upgrading in the last 5 budget years alone.

In summary, safety upgrading is a major and continuing program in all DOE operations and one that is conducted at a high level of expenditure.

° The GAO report found at page 33 that in some cases DOE safety personnel, both at Headquarters and in the field, lacked the technical expertise necessary to perform their duties. DOE does not agree that either Headquarters or field personnel to which this comment was directed lack the technical expertise necessary to perform their duties. Nevertheless, DOE recognizes the crucial importance of technical expertise in the safety area and is actively taking steps to enhance the quality of its safety expertise by, for example, emphasizing a high level of technical skills in filling the previously discussed 32 new safety positions recently allocated to the field offices.

° The GAO report at page 34 pointed to the plutonium processing facility at the Mound site at Miamisburg, Ohio, as an example of problems in the Safety Analysis and Review program. In this case the Safety Analysis and Review concluded that the plant could continue to operate without hazard to the employees, the public and the environment, except for the potential dispersing of plutonium oxide as a consequence of seismic and tornado events. The GAO report did not point out that, as a result, DOE relocated those processing operations having the potential for dispersion of plutonium oxide to new facilities at the Savannah River Operations and Los Alamos sites and closed the processing operation at Mound. The GAO report also incorrectly noted at page 34 that a $1.5 million project to upgrade the plutonium processing facility to resist tornadoes was not funded by DOE. Actually, the $1.5 million project was to relocate water towers that provide fire protection to part of the

Mound site. The water towers could have failed in the event of a tornado, and possibly have fallen on the plutonium processing facility. This particular upgrade project was authorized in fiscal year 1980. Although these towers no longer represent a hazardous situation with the relocation of the plutonium operation to Savannah River, the towers are still important for fire protection and are being rebuilt because of the tornado risk.

Chapter 5 "Opportunities to Increase Reliability of Radiological Monitoring Program"

- The GAO report suggests at page 40 that DOE issue radiological monitoring oversight (appraisal) requirements for mandatory application to all DOE facilities. In fact, DOE Orders 5480.1 and 5482.1 already make basic monitoring and reporting requirements mandatory at all DOE facilities. These Orders are supplemented by detailed guidance in DOE/EP-0023, to ensure that all substantive aspects of basic Departmental requirements are addressed.

Flexibility, purposefully built into the program, is necessary for the effective and efficient operation of DOE environmental programs because of the great variability in function and environmental setting of each DOE facility. Each facility is unique in regard to the types, quantities and forms of radionuclides that can be released to the environment. The characteristics of the receiving environments also vary from site to site. Such parameters uniquely determine the type, location, and frequency of sampling at each particular site. For example, in the case of domestic well monitoring, if a well is down-gradient and near a facility handling a highly mobile species such as tritium, sampling must be more frequent than if the well is near a facility handling a radionuclide that would move slowly in groundwater. Another important factor in determining intensity of environmental sampling is the indepth nature of monitoring programs at DOE sites. That is, DOE facility effluents are monitored prior to and during their release to identify problems long before they can accumulate to measurable levels in offsite environmental media. Each point of release is assigned an operating limit which if exceeded would result in corrective action to prevent the release of unacceptable levels of radioactive materials to the environment. Therefore, emphasis is placed on ensuring immediate and reliable detection of radioactive materials in the effluents as well as in environmental media.

Overall, DOE believes that it has an effective environmental monitoring program, but recognizes the need for diligence in ensuring reliability and quality in sample collection, analysis, evaluation, and reporting.

• The GAO report suggests at page 40 that DOE develop a coordinated system whereby radiological monitoring data supplied by operating contractors is verified with data from State or local government agencies with monitoring capability. The use of State and local environmental data to verify DOE contractor monitoring results is one of the means that frequently are used by contractor and field office staff to check the correctness of contractor generated environmental data. DOE believes, however, that it has established more effective and efficient means of assuring data quality and reliability, in that the DOE contractor radiological monitoring programs are far more extensive and sophisticated than the respective State and local programs and therefore provide greater statistical quality in the contractor data. Further, the assurance of quality in DOE contractor environmental monitoring is far more fundamental than the comparison of a few data points derived by an independent agency. Of greater importance to DOE are: contractor management sensitivity to Quality Assurance (QA) needs; qualified contractor personnel; adequate funding; the existence of a contractor QA program in support of the monitoring and analytical program; written procedures for monitoring, analysis and QA; a well designed monitoring program; high quality equipment and facilities for calibration, monitoring, sampling and analysis; internal periodic self audit and assessment; use of laboratory standards and inter-laboratory comparison services; independent overview (including appraisal) by DOE; and systems of records for the QA, internal audit and overview activities.

It is important also to note that EPA, States, local jurisdictions, the press, and others routinely are provided copies of site environmental monitoring reports and have every opportunity to question any of the data reported.

• The GAO report notes at page 38 that substantive errors occurred in a 1979 report concerning monitoring data at the Pantex Plant. The errors cited in that report are regretted, but they proved to be inconsequential. The errors occurred not in the 1979 report, as stated by GAO, but in the 1977 and 1978 reports. Dummy effluent data used to test a modeling program were inadvertently left in the program at the time the annual population dose was calculated for use in the site reports. As a result, the population dose was underestimated by a factor of ten. However, since the correct calculated dose was about 0.0001 percent of the permissible dose, either estimate of the population doses would have been inconsequential.

Chapter 6 "Changes in Safety and Health Oversight for DOE's Nuclear Facilities Can Increase Independence and Uniformity"

GAO Recommendation

"Most of the problems noted during our review can be corrected by reorganizing DOE's safety and health program and by implementing specific corrective action. One situation, however, does not appear to be correctable by these actions, but does seem to be more suited to a cooperative arrangement between NRC and DOE. In the past, DOE's efforts in ensuring the safety of its facilities have not been adequate. Of particular concern are those cases where safety analysis reviews have been conducted, but have failed to identify hazards which exist at the facility. A lack of technical expertise by DOE safety and health staff, acknowledged by DOE officials, may have contributed to the incompleteness of these reviews. As a result, we believe that consideration should be given for an independent technical review of DOE's safety analysis program for nuclear facilities. Although such a review will undoubtedly involve the commitment of additional staff and resources, we believe that the Congress should consider legislation to require NRC to review and evaluate a number and a variety of DOE's nuclear facilities and processes, including detailed review of plant operations, the contractors safety analysis methodology and report, and actions taken to mitigate hazards. This evaluation should also examine the adequacy of DOE's review of the safety analysis document. NRC should report to the Congress on the results of its review and evaluation within 1 year. Suggested legislative language to implement this program appears as appendix 1 to this report."

DOE Comment

In the brief discussion in the GAO report about possible disadvantages that would accompany an extension of NRC's regulatory authority to DOE facilities, it is accurately noted that NRC's role could well have an adverse impact on DOE's national security mission in that the number of people with access to classified/restricted data information and nuclear weapons data would increase substantially. Not sufficiently noted, however, is the high cost in effort and dollars that DOE believes would be routinely imposed as a consequence of any such NRC role, a cost that in DOE's opinion would not provide compensating substantial benefit. Also, 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.

It must be understood that NRC has an arms-length relationship with its licensees and can only require actions for which there is authority under law. DOE, on the other hand, has a very tight control over the actions of contractors at its facilities. Many of these facilities have unique functions or specific military requirements. These facilities are government-owned; they are operated in accordance with government direction; and their overall level of safety is in accordance with funding actions taken by the Executive Branch and the Congress. In the past, substantial funds have been spent to upgrade facilities and to build new plants, such as the plutonium buildings at Rocky Flats and Los Alamos, which are in the forefront of protective design. Indeed, DOE provides NRC with data and expertise in developing its standards. In short, DOE is not just another nuclear operator but rather is a key element of the government's program to ensure the proper development and safe operation of nuclear power. Moreover, nuclear safety is a concern to which DOE's top management, including the Secretary, Deputy Secretary, and Under Secretary are all deeply committed. Indeed, the Secretary of Energy recently identified DOE's defense programs, including the safety aspects of those programs, as DOE's top priority. DOE has both the competence and the control necessary to make sure that the government-owned plants are operated safely, and its record compares favorably with any other segment of the industrial sector, including that regulated by NRC. Therefore, DOE sees little that would be accomplished by an NRC review of the DOE safety analysis program, and the attendant cost of such review would be very high.

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