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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Honorable Patricia Schroeder House Of Representatives

DOE's Safety And Health Oversight Program At Nuclear Facilities Could Be Strengthened

The Department of Energy has made improvements in its safety and health program since GAO's 1981 report on this subject. However, these improvements have been made on an individual basis and the major cause of the problems has not been addressed. Ensuring that safety, health, and environmental standards are met rests with contractors who operate DOE's nuclear facilities. The contractors are also responsible for meeting production or program objectives. Thus, safety and health concerns are pitted against program goals.

GAO continues to believe, as stated in its 1981 report, that a major reorganization could provide DOE's safety and health organization with the authority and independence necessary for an effective safety and health program at DOE's nuclear facilities.



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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-199279

The Honorable Patricia Schroeder
House of Representatives

Dear Ms. Schroeder:

This report responds to your request to review plans and actions to improve the Department of Energy's safety and health oversight program for nuclear facilities. The report addresses your questions concerning prior Department of Energy and General Accounting Office reports, the Department's resultant action plan, and the implementation of that plan.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days after the date of its issuance. At that time we will send copies to the Secretary of Energy and interested committees and members of Congress. Copies will also be made available to others upon request.

Sincerely yours,

A handwritten signature in black ink, appearing to read "J. Dexter Peach".

J. Dexter Peach
Director

D I G E S T

In 1979 safety and health at nuclear facilities became an increasingly important issue because of the accident at the Three Mile Island nuclear reactor in Pennsylvania. Shortly thereafter, President Carter appointed a commission to investigate the accident's causes and consequences. The Department of Energy (DOE) also created a task force to assess the safety and health programs and personnel training and qualifications at government-owned nuclear reactors. (See p. 2.)

The DOE task force report, dated March 1981, identified deficiencies in reactor operations and safety and health programs at its nuclear reactors. In May 1981 DOE issued a plan that identified actions believed to be necessary to assure that government-owned nuclear reactors are operated safely. (See p. 3.)

On August 4, 1981, GAO issued a report¹ discussing deficiencies found in DOE's programs for worker protection, emergency preparedness, facility safety, and environmental monitoring at all types of DOE nuclear facilities. GAO found that

- DOE was unresponsive to employee complaints, had inadequately handled safety and health violations, and lacked a systematic method of analyzing information concerning identified hazards (see pp. 11 and 12);
- radiological emergency preparedness had not received sufficient priority and lacked coordination and direction (see pp. 14 and 15);
- DOE had not analyzed the safety of all its facilities to identify and correct substandard design and/or construction (see p. 19); and

¹Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities
(EMD-81-108).

--environmental monitoring was not uniformly conducted and DOE did not verify contractor/operator supplied data (see p. 21).

GAO further reported that the problems in DOE's safety and health program were indicative of a need for major organizational changes. In this connection, GAO noted that (1) placing field safety and health personnel within the field structure inhibited independent oversight, (2) competition for staff and other resources between safety and health activities and program activities created conflicts, and (3) DOE's headquarters safety and health staff had little authority to ensure that policies were implemented. (See p. 25.)

GAO recommended specific corrective action in the four functional areas of DOE's safety and health program and also recommended that the safety and health oversight function be elevated to report directly to DOE's Under Secretary. At that organizational level, rather than at a division level, independence of safety and health officials should be enhanced, competition with program offices should be minimized, and the safety and health organization would have greater authority to assure adherence to policies and standards. (See p. 25.)

In a letter dated October 17, 1981, Representative Patricia Schroeder asked GAO to follow up on its and DOE's earlier work. Specifically, GAO was asked the following:

- To what extent do the findings of the DOE task force correspond with those contained in GAO's report, and to what extent do they conflict?
- Will the recommendations in DOE's action plan rectify the problems outlined in the GAO report?
- To what extent are actions identified in DOE's action plan actually being implemented?
- To what extent, if at all, are the recommendations in GAO's report being implemented by DOE?

SUMMARY OF FINDINGS AND KEY CONCLUSIONS

Overall, GAO noted that DOE has made many specific improvements to its safety and health program since GAO's 1981 report. At the same

time, however, DOE's safety and health function still has deficiencies and a major underlying problem--the organizational placement of DOE's safety and health oversight function--remains unresolved.

More specifically, in response to Representative Schroeder's first question, the DOE task force and GAO reports had similar findings on issues that were included in both reviews and both identified deficiencies in DOE's safety and health management activities in the field and at headquarters. No conflicts between the two documents were apparent. (See pp. 6 to 10.)

In assessing if the recommended actions in DOE's action plan would rectify the problems noted in the GAO report, GAO found that:

--The plan did not address the problems discussed in the GAO report pertaining to worker protection, facility safety analyses, and environmental monitoring. (See pp. 13, 20, and 22.)

--The plan recommended changes similar to GAO's recommendations such as developing new radiological emergency preparedness requirements and clarifying the various federal agencies' roles during emergencies at DOE sites. (See pp. 15 and 18.)

--The plan concluded, as did GAO, that the safety and health function should be placed high enough in DOE's organization to ensure necessary senior management attention. (See p. 26.)

In the areas of emergency preparedness where GAO's report and the action plan overlapped, the plan's recommended actions for improving emergency preparedness are either implemented or in process. In the area of organizational change, the plan's recommended reorganization has been implemented. Although the plan agreed, in concept, with elevating the safety and health oversight function to a level high enough to insure necessary senior management attention, the reorganization, in effect, was not responsive to the DOE task force's or GAO's recommendation to elevate the safety and health oversight function. (See pp. 14 to 26.)

In assessing whether GAO's recommendations are being implemented, GAO found that DOE has made some improvements in almost all the areas GAO reported on in 1981, but has not fully implemented all the recommendations. DOE has

increased the responsiveness of the employee complaint process and is installing a computer system to identify possible workplace hazards. Emergency preparedness responsibilities have been clarified, and reviews of facility safety have received higher priority. Comprehensive appraisals of field offices are being conducted and should aid in improving headquarters oversight in all areas covered in the GAO report. (See pp. 23 and 24.)

However, some GAO recommendations which are still valid have not been fully implemented. DOE is still not handling safety and health violations uniformly to ensure corrective action and follow-up inspections. For example, DOE still has no overall procedure to deal with violations found during appraisals, inspections, or informal workplace visits. Also, DOE (1) does not always ensure that emergency preparedness drills are conducted, (2) has not completed many facility safety analyses, and (3) does not ensure uniform environmental monitoring. (See pp. 11 to 24.)

While DOE has made and continues to make improvements in most areas, it has not yet adequately addressed what GAO believes to be a major cause of the problems--the organizational structure. As a result, DOE has not provided safety and health officials with the

- authority to enact mandatory policies and requirements which would help provide program uniformity at all facilities,
- independence to operate safety and health programs with minimal conflict from program offices, and
- visibility that could be helpful in obtaining more priority within DOE.

GAO continues to believe DOE's safety and health function could be reorganized by elevating it to a staff function reporting to the Under Secretary, as called for in the 1981 GAO report, or the safety and health function could be an assistant secretary's sole responsibility. Either of these changes should result in providing safety and health officials with the authority, independence, and visibility necessary to ensure that DOE has the best possible safety and health program for its nuclear facilities. (See pp. 25 to 30.)

GAO did not obtain official agency comments on this report. However, GAO did discuss the report's facts with cognizant agency officials and their comments have been included in the report as appropriate.

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ABBREVIATIONS

DOE	Department of Energy
ERDA	Energy Research and Development Administration
FEMA	Federal Emergency Management Administration
GAO	General Accounting Office
NRC	Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
TMI	Three Mile Island

CHAPTER 1

INTRODUCTION

Safety and health at nuclear facilities have become increasingly important issues since an accident at the Three Mile Island (TMI) nuclear powerplant in 1979. As a result, a number of studies have been made relating to safety and health at the Department of Energy's (DOE's) nuclear facilities. In March 1981, a DOE task force issued a report entitled A Safety Assessment of Department of Energy Nuclear Reactors. In addition, on August 4, 1981, we issued a report entitled Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities (EMD-81-108). Both reports criticized DOE's safety and health program from procedural and organizational perspectives. DOE officials said that they took no direct actions pursuant to our report, but they did establish plans and initiate actions in response to DOE's own task force report. Consequently, on October 27, 1981, Representative Patricia Schroeder requested that we review and compare both reports and determine if DOE's plans and actions also addressed the problems noted in our report and our recommendations.

DOE'S RESPONSIBILITY FOR SAFETY AND HEALTH AT NUCLEAR FACILITIES

The Atomic Energy Act of 1954 (42 U.S.C. 2140(a)) established the Atomic Energy Commission and encouraged development of atomic energy for peaceful purposes. Under this act the Commission was assigned regulatory control over potentially hazardous nuclear facilities and materials to protect the public. The Energy Reorganization Act of 1974 (42 U.S.C. 5801) abolished the Commission and established the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC). Under the 1974 act, ERDA became responsible for regulating safety and health programs at government-owned nuclear facilities, such as reactors and fuel processing plants. Similar responsibility for commercial nuclear facilities was to be shared by NRC, the Occupational Safety and Health Administration (OSHA), and state agencies. ERDA's responsibilities were passed to DOE by the Department of Energy Organization Act of 1977 (42 U.S.C. 7101).

DOE's specific responsibilities include emergency preparedness; environmental protection; and protecting workers and the public from injury or death due to mechanical operations, industrial hazards, toxic chemicals, and radiation. These responsibilities are divided among three groups--the Office of the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness; program offices; and field offices.

At DOE headquarters, the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness is responsible for (1) developing program policies, standards, guides, and requirements, (2) providing technical advice and assistance, and (3) serving as a focal point for safety and health protection matters both within DOE and between DOE and other departments, agencies, and groups. The assistant secretary, however, has no

authority over program or field offices and coordinates with these groups in an advisory capacity only. The assistant secretary is, however, responsible for several non-health and safety areas which are heavily funded. These areas include the Oil Shale and Naval Petroleum Reserve Program and the Strategic Petroleum Reserve Program. Safety and health is the specific responsibility of the Division of Operational Safety.

Several of DOE's program offices (primarily under the Assistant Secretaries for Defense Programs, Nuclear Energy, and Energy Research) are responsible for implementing the safety and health program at DOE's nuclear facilities and ensuring that all related policies, standards, guides, and regulations are followed. The program offices (which are located at DOE headquarters) have delegated nearly all these responsibilities to DOE's field offices.

DOE's field offices--eight operations offices and their subordinate area offices--are ultimately responsible for ensuring that contractors operate DOE's nuclear facilities safely. Consequently, each operations office and some area offices have safety and health staffs responsible for overseeing the activities of the facilities and ensuring that the public, workers, and the environment are adequately protected from and monitored for radiological and other hazards.

RECENT SAFETY AND HEALTH ASSESSMENTS OF NUCLEAR FACILITIES

Interest in safety and health at nuclear facilities was intensified after March 28, 1979, when an electric pump shut down on the TMI Nuclear Reactor No. 2 near Harrisburg, Pennsylvania. The pump failure was the first of a cascading sequence of events later recognized as the worst accident ever to occur at a U.S. commercial nuclear powerplant. As a result, a series of assessments and studies were begun to investigate the causes and consequences of the TMI accident and to recommend ways to avoid such accidents in the future. In October 1979 the presidentially appointed Kemeny Commission¹ issued a report outlining several major problems at TMI, including deficient reactor operator knowledge and performance and emergency preparedness weaknesses.

As a result, DOE formed a task force² to assess the adequacy of personnel and their training at government-owned nuclear

¹The commission was chartered in 1979 and chaired by John G. Kemeny, President of Dartmouth College. Members of the Commission included representatives of universities, government, industry, and labor organizations and a resident of the area surrounding TMI. On October 1979, the Commission issued the Report to the President on the Accident at Three Mile Island.

²The task force, called the Nuclear Facilities Personnel Qualification and Training Committee, consisted of 5 DOE officials with a support team of 26 private consultants, DOE contractors, and other DOE personnel experienced in nuclear operations.

facilities.³ It also assessed all major safety and health elements contained in the Kemeny report. Subsequently, DOE's Under Secretary directed the task force to limit its attention to DOE's nuclear reactor facilities.

In March 1981 DOE issued the task force's report identifying safety and health areas where improvements could be made. It also discussed areas that had received increased attention as a result of the TMI accident or where DOE reactor operation standards were below those used by the commercial nuclear power industry.

In May 1981 DOE issued an action plan in response to the task force report. In its action plan DOE identified actions necessary to apply the lessons learned from the TMI accident and to assure that DOE nuclear reactor facilities are operated safely.

During the same time the task force was conducting its investigation, we were conducting a review of safety and health activities at DOE's nuclear facilities at the request of Representative Patricia Schroeder. Our resulting August 4, 1981, report discussed many of the same deficiencies as the task force's report; however, our report was broader as it covered all types of nuclear facilities, not just reactors.

Our report noted deficiencies in DOE's (1) handling of employee complaints and safety violations, (2) ability to deal with radiological emergencies, (3) identification and correction of hazards in older nuclear facilities, and (4) monitoring to assess the impact of radiological releases into the environment. We concluded that major organizational changes were required in DOE's safety and health oversight program at its nuclear facilities to ensure that safety, health, and environmental standards were being met.

In an October 5, 1981, letter, DOE disagreed with our report and emphasized that it has traditionally had a good safety record at its nuclear facilities. On October 27, 1981, Representative Schroeder requested that we respond to DOE's letter. We responded by a letter dated January 27, 1982, and later issued a supplemental report.⁴ The supplemental report responded in detail to DOE's letter and concluded that DOE's comments provided no basis for changing our conclusions or recommendations.

³The federal government owns numerous nuclear facilities, including reactors, laboratories, weapons production facilities, and uranium enrichment plants. DOE has responsibility for operating these facilities and does so under contract with private firms and institutions.

⁴Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities (EMD-81-108S, Apr. 14, 1982).

OBJECTIVES, SCOPE, AND METHODOLOGY

In her October 27, 1981, letter, Representative Schroeder also requested that we examine DOE's 1981 task force report and DOE's May 1981 action plan. Specifically, we were asked the following:

- To what extent do the findings of the DOE task force correspond with those contained in our report, and to what extent do they conflict?
- Will the recommendations in DOE's action plan rectify the problems outlined in our report?
- To what extent are actions identified in DOE's action plan actually being implemented by DOE?
- To what extent, if at all, are the recommendations in our report being implemented by DOE?

As agreed with Representative Schroeder's office, we conducted--after allowing DOE time to begin implementing its action plan--a review to examine pertinent policies, procedures, and guidelines that had been drafted or implemented since 1981; analyze the DOE task force's report; review DOE's action plan as well as efforts to implement it; and identify any other pertinent DOE plans and activities to upgrade DOE's safety and health program. We focused our review on DOE's plans and actions concerning the five areas covered in our 1981 report: (1) worker protection, (2) radiological emergency preparedness, (3) facility safety, (4) environmental monitoring, and (5) proposed organizational changes in safety and health oversight for DOE's nuclear facilities.

It was also agreed that, where DOE had not taken action related to deficiencies noted in our report, we would not verify that those problems still existed. The deficiencies identified in our 1981 report were so widespread that, unless they were specifically addressed by procedural, policy, or organizational alterations, it is unlikely that they have been corrected. In addition, because we concluded in our August 1981 report that NRC's licensing of DOE facilities did not appear to be a feasible or workable alternative, we did not consider that alternative during this review.

During our review, we interviewed safety and health officials and obtained documents at DOE headquarters in Washington, D.C., and Germantown, Maryland, and at DOE operations offices in Albuquerque, New Mexico; Richland, Washington; and Savannah River, South Carolina. These sites were selected because most of the field work for our 1981 report was done at these locations. These selections provided us with opportunities to review DOE-wide and specific operations office's initiatives, notably those plans, policies, procedures, and actions that address our 1981 conclusions and recommendations.

Because some of DOE's initiatives were made recently, we were not always able to determine resultant effects. In other instances, DOE headquarters or operations offices had planned actions and were actively seeking staff to implement these actions. In these instances, it was premature to judge the adequacy of DOE's remedial actions; however, we noted the actions planned and whether they appeared to be similar to actions recommended in our earlier report.

The following chapters respond to Representative Schroeder's four questions. Chapter 2 addresses the first question by comparing the task force's findings with our major findings. Chapter 3 addresses the last three questions by comparing our recommendations with DOE's plans and actions since 1981. Chapter 4 discusses organizational changes recommended in our previous report.

We did not submit a draft of this report to DOE for comment because Representative Schroeder asked us not to obtain official comments. However, we did discuss the report's facts with cognizant agency officials and made changes as appropriate. Our review covered the status of DOE's safety and health program from October 1982 to March 1983. Actions which we are aware of that have taken place since March are noted in the report as appropriate. Except as noted above, we performed our work in accordance with generally accepted government auditing standards.

CHAPTER 2

COMPARISON OF DOE TASK FORCE AND GAO FINDINGS

Even though the 1981 DOE task force report included only nuclear reactors and our 1981 report covered a broader range of DOE nuclear facilities, both reports addressed many of the same safety and health issues. The primary issue covered by the task force report was whether DOE was properly fulfilling its legally established obligations for the safety of nuclear reactors, especially with regard to operational safety and emergency preparedness weaknesses the Kemeny Commission found at TMI. Our report was directed at determining (1) the desirability of an NRC role in oversight or regulation of DOE's nuclear facilities and (2) other options available to ensure separation of health, safety, and environmental oversight functions from nuclear research, development, and weapons production activities. In general, the task force report and our report agreed that DOE has had a good safety record in terms of reported injuries and illnesses. However, both reports pointed out that significant deficiencies existed in DOE's safety management activities in the field and at headquarters.

MAJOR ISSUES AND FINDINGS DISCUSSED IN THE REPORTS

Our 1981 report discussed the four major functional areas of DOE's safety and health program--worker protection, emergency preparedness, facility design safety, and environmental monitoring. The report included safety activities at various types of DOE nuclear facilities including reactors, weapons facilities, and research laboratories. DOE's task force report, on the other hand, focused on nuclear reactors only and included specific elements of the four functional areas mentioned above, as well as elements not covered in our report, such as quality assurance and training of personnel that operate DOE's reactors.

Our report concluded that DOE's safety and health program at its nuclear facilities did not always (1) provide safe, healthful working conditions for employees, (2) provide emergency preparedness guidance and responsiveness, (3) ensure safety of older facilities, and (4) provide assurance of obtaining reliable information concerning radiological releases. We recommended specific actions to rectify problems in these areas. We also suggested several alternatives for improving DOE's oversight, ranging from reorganizing DOE's entire safety and health function to having outside agencies provide the oversight.

The task force report concluded that DOE management needed to reassess safety within its nuclear reactor programs and that a number of changes were needed to provide adequate nuclear safety assurances. The report stated that (1) DOE's headquarters policies, instructions, and other information issued to the sites were undefined and were not uniform among various nuclear programs, (2) DOE headquarters had no directives promulgating requirements on emergency planning or public information in

accident situations, and (3) no coordinated DOE-wide program existed relative to lessons learned at TMI. The task force recommended strengthening the DOE line organizations responsible for reactor operation and safety oversight and suggested establishing new safety groups inside and outside DOE to monitor overall nuclear safety performance.

SPECIFIC CONCLUSIONS IN THE REPORTS ARE SIMILAR

Many conclusions in the task force report and our 1981 report are parallel even though the two reports differed in scope, depth, and manner of issue coverage. Some of our conclusions encompassed issues not addressed in the task force report; however, comparisons of the two reports revealed no conflicts in conclusions where similar issues were addressed. Of the four functional areas covered in our 1981 report, the task force report discussed employee safety and health only in connection with broader topics. Both reports discussed emergency preparedness in detail. Safety of older nuclear facilities and environmental monitoring were not specifically covered in the task force report. Additionally, both reports had specific conclusions concerning shortfalls in or opportunities to improve DOE's organization for safety and health oversight.

Employee safety and health

DOE is responsible for ensuring that safe and healthful working conditions exist and are maintained at its nuclear facilities. Our report criticized DOE's responsiveness to employee complaints and the adequacy of DOE's treatment of identified safety and health violations. DOE's task force did not address these issues. We concluded that DOE did not have a systematic method of analyzing hazard information that was readily available from accident reports, safety analysis documents, unusual occurrence reports, or complaints. Therefore, DOE could not ensure that (1) priorities for safety and health oversight activities were correctly established, (2) hazards were eliminated, and (3) radiation exposures and injuries were maintained as low as reasonably achievable. The task force report made a statement concerning reactors which appears to support our conclusions:

" . . . it does not appear that DOE headquarters is critically reviewing and analyzing UOR's [unusual occurrence reports], identifying trends and generic problems, and causing fundamental corrective actions and lessons learned to be implemented at all DOE reactors."

Emergency preparedness

DOE's emergency preparedness responsibilities are intended to minimize potential safety and health effects of releases of significant amounts of radioactive material into the environment. DOE requires nuclear facility operators to develop plans for onsite protection in the case of radiological emergencies.

Beyond the facility's boundary, DOE also has responsibilities for (1) notifying state and local agencies of potential offsite releases, (2) providing assessments of the offsite hazard, and (3) recommending protective measures such as evacuation. As shown below, the reports had many parallel conclusions.

--We concluded that radiological emergency preparedness had not received sufficient priority in DOE to ensure an adequate level of preparedness for a serious nuclear accident. The task force

" . . . found, both at headquarters and in the field, a lack of attention to and action on the numerous issues concerning emergency planning and public information raised as a result of the accident at TMI."

--Our report stated that DOE's program lacked the necessary coordinated, unified approach and that emergency preparedness responsibilities were fragmented, not clearly defined, and not always carried out. The task force said

"There appears to be some confusion, or at least non-uniformity, in understanding the Field or Area Office's role in an emergency vis-a-vis that of the contractor operator. This confusion could lead to gaps in an emergency, particularly as it might involve contact and decision-making with state and local officials. Further, the role of DOE headquarters is not clearly identified in the plant and Field/Area Office emergency plans."

--We found that DOE did not have an agencywide emergency preparedness program. Policy objectives, responsibilities, and authorities were based on a cancelled ERDA directive. Implementation of the cancelled ERDA directive varied from office to office. The task force reported the following.

"DOE Headquarters should complete development of overall emergency preparedness requirements and delineate Headquarters, Field Office, and contractor responsibilities uniformly for all facilities. This should apply uniformly to all DOE Headquarters organizations responsible for reactor operations, and formal coordination among these responsible organizations should be established for matters relating to emergency preparedness of DOE facilities. Detailed performance objectives, requirements for emergency plan documentation, and a uniform system of action level criteria for emergency plans should be developed similar in scope to those used by NRC for licensed facilities."

Safety of older nuclear facilities

DOE requires that safety analyses be performed on all its existing nuclear facilities to determine whether the facilities meet current safety standards for design and construction. Our report pointed out that safety analyses had not been performed on all older nuclear facilities that, because they were built before DOE instituted the current preconstruction reviews, might not meet today's safety design criteria. In addition, those analyses that had been performed were not uniform or complete. The task force did not discuss facility safety analyses.

Environmental monitoring

DOE is responsible for environmental monitoring at its nuclear facilities to determine the effects of facility operations on the environment and to verify compliance with offsite radiation standards set by the Environmental Protection Agency. Our prior report noted that all DOE facilities did not (1) monitor the same substances such as type of food, vegetation, and soil, (2) use the same monitoring methodology, or (3) monitor with the same frequency. We concluded that monitoring differed between facilities at least partially because DOE lacked mandatory requirements.

Although the task force report did not address environmental monitoring specifically, it stated that

"DOE Headquarters policies, instructions, and other information relating to nuclear matters issued to these sites are not definitive and lack uniformity among the various nuclear programs."

Organization for safety and health

Our 1981 report concluded that problems in employee safety and health, emergency preparedness, facility design safety, and environmental monitoring were indicative of a need for major changes in DOE's safety and health oversight program. We concluded that the lack of independence of safety and health functions from program functions and the lack of uniformity occurring throughout the four areas above were indicative of DOE organizational problems which may be the most serious problems over the long term. The task force stated that

"Ineffectiveness of the Headquarters overview surveillance function is partly attributable to its relatively low organizational placement and its limited technical capability."

The task force also said that, under DOE, safety overview surveillance by top management

". . . is now delegated from the Secretary through a chain of managers, most of whom lack experience in nuclear technology. The reactor safety overview

organization is located at a low management level in the Office of the Assistant Secretary for Environment (EV), several levels down from the Secretary. This is contrary to the need for nuclear safety aspects of DOE reactors to have continuous surveillance by the highest levels of management in DOE and for organizational visibility within the Office of the Secretary."

We also concluded that major changes are required in the field/headquarters relationship to increase independence of field safety and health staffs from operations staffs by centralizing program responsibilities.

The task force found similar problems in field/headquarters relations.

"Headquarters' guidance and direction to the field units have become diffused and weakened due to the decentralization of the programs, and the organizational gap has widened between top management (presently, the Secretary of Energy) and the reactor safety overview organization."

Both reports suggested possible organizational changes that could alleviate the problems noted. DOE's task force suggested creating a separate nuclear reactor safety group that would report directly to the Under Secretary. Similarly, we recommended that a staff organization be created bringing together all safety and health oversight functions for DOE's facilities. We recommended that this group report directly to DOE's Under Secretary. We also recommended that safety and health oversight personnel at field locations report directly to the headquarters' safety and health group to increase independence and eliminate potential for organizational conflicts of interest.

CHAPTER 3

FURTHER IMPROVEMENT IS NEEDED IN DOE'S OVER-

SIGHT OF SAFETY AND HEALTH ACTIVITIES

AT DOE'S NUCLEAR FACILITIES

DOE has taken action to improve its oversight of safety and health activities at nuclear facilities. Many of these actions were taken in accordance with DOE's action plan and correspond with the thrust of many of our 1981 recommendations even though DOE officials maintain they took no actions in response to these recommendations. DOE has taken and is taking action to improve each of the four areas discussed in our report; however, a number of improvements remain to be made. Specifically:

- DOE still does not have a formal process to handle safety and health violations found during oversight surveillance activities. Each operations office still has its own procedures.
- Appraisals and drills are not uniformly conducted.
- Safety analyses of older facilities have not been completed.
- The environmental monitoring program has not been uniformly applied.

The following sections point out improvements made since 1981 and needed improvements which still remain in the four safety and health areas.

OVERSIGHT OF WORKER PROTECTION HAS INCREASED IN SOME AREAS

DOE is exempt from OSHA regulations for nonradiological safety and health concerns and from NRC regulations for radiological matters. Thus, DOE regulates its own nuclear facilities to assure that contractors maintain safe and healthful working conditions. Our 1981 report noted that DOE's oversight efforts were not sufficient to ensure those safe and healthful conditions.

Our 1981 report recommended that the Secretary of Energy (1) require that DOE safety and health officials conduct independent investigations of potentially serious safety or health complaints that cannot be adequately resolved at the contractor level and provide the complainants with a response which clearly addresses the issues of the complaint, (2) develop a uniform policy for handling safety and health violations, and (3) establish a formal, consolidated system to collect and analyze information on workplace hazards for all DOE nuclear facilities and establish priorities for future safety and health oversight activities on the basis of those analyses.

A draft DOE order addresses the independent investigation issue, and DOE officials are conducting comprehensive appraisals to determine if DOE's operations offices are handling OSHA-type complaints and violations uniformly. DOE has also designed a system that may help to analyze hazard information to determine which safety and health problems present the greatest risk and, therefore, should receive the highest priorities for correction.

DOE has developed new guidance
to handle employee complaints

In 1981 we reported that DOE's procedures for handling contractors' employee complaints did not offer employees an independent and objective source of complaint resolution. We found that DOE was not resolving complaints according to its own established procedures. Instead, it was relying extensively on its operating contractors to resolve serious complaints submitted to DOE.

Although DOE's action plan did not discuss employee complaints, in September 1981, DOE drafted a new order (5483.1A) concerning occupational safety and health programs. The draft order provides that contractor employees who are dissatisfied with the operations office's investigation or response to their safety or health complaint now may submit a written request for resolution to DOE's Director of Operational Safety. The Director of Operational Safety must investigate the situation in coordination with the appropriate headquarters program office(s). The Director is to immediately investigate and resolve complaints involving imminent danger--threatening death or physical harm. For any other complaints, the Director shall provide a written response within 30 days to the employee or representative and to the DOE field organization. The response shall state the actions taken or planned as a result of the request for complaint resolution. DOE issued the new order in July 1983.

DOE's action appears to provide an appeal process that should help ensure more responsive handling of employee complaints. Its actual effectiveness, however, will depend on the degree to which it is ultimately implemented.

Handling of safety and health
violations needs further improvement

We reported in 1981 that DOE did not have a system for classifying safety and health violations according to the seriousness of the violations. Such classifications would be used to assign appropriate time limits, or abatement dates, for corrective actions. In 1981, operations offices had no requirements regarding abatement time frames or follow-up inspections to ensure correction. We also reported that, during OSHA-type (nonradiological safety) inspections, operations offices did not post citations on safety violations, set abatement dates, or follow up on violations. Nor did the offices have a formal process to handle violations found during other oversight activities, such as appraisals. The treatment of violations found during these

other oversight activities tended to minimize their seriousness and did little to ensure employee awareness of hazards or prompt corrections. DOE's action plan did not address these issues, and we found that DOE has not made any changes specifically to alleviate these problems.

In October 1981 DOE headquarters took a positive step toward addressing violations by starting to make comprehensive appraisals⁵ of occupational safety and health programs at its operations offices. As part of the appraisals, handling of violations found during OSHA-type inspections is checked to assure comparability with OSHA procedures. Such procedures include posting violations in the work place, setting abatement time frames, and following up to ensure that corrective action has been taken.

Although the above steps have been taken, handling of violations found during non-OSHA type oversight activities has not changed since 1981. DOE still has no overall procedures for dealing with violations of safety and health standards that it finds during appraisals of contractors' safety and health programs, complaint and accident inspections, or informal workplace visits. Consequently, as reported in 1981 and as is currently the case, each DOE operations office has developed and adopted its own procedures for dealing with these violations. The manner in which posting violations, setting abatement time frames, and following up are handled varies from office to office.

In addition, in 1981, we found that the Savannah River and Richland operations offices incorrectly classified some potentially dangerous violations, such as incorrect storage of acids and blocked fire exits, as "de minimus" violations. De minimus violations are defined as having no potential for affecting worker safety and health. As a result, employees were not notified of any danger and dates for correction were not established. During this current review we noted that these offices were no longer using the de minimus classification incorrectly.

DOE is developing a program for systematically identifying hazards

At the time of our 1981 review, DOE had no formal system to help analyze hazard-related information (such as appraisal reports, complaints, accidents, or unusual occurrences reports). Accordingly, we recommended that a formal, consolidated system be

⁵Objectives of comprehensive appraisals include (1) obtaining a detailed understanding of the entire operations office environmental, safety, and health program and (2) providing management (operations office and headquarters) with a balanced judgment of the effectiveness of that program. As many as 15 separate functions make up the areas being appraised (e.g., emergency preparedness, environmental protection).

established to collect and analyze information on workplace hazards and establish priorities for future safety and health oversight activities on the basis of those analyses. DOE's action plan called for establishing a DOE-wide system for obtaining and distributing reports and other information related to hazards at nuclear facilities. DOE has since developed a computer system that will provide a data bank on hazards identified at all DOE facilities. This data bank is to encompass injury, illness, property damage, radiation exposure, and environmental data.

The computer system, however, is not yet operational. According to DOE's program manager for the system's implementation, user manuals are nearly completed, training courses will be announced shortly, and terminals will be installed by the end of 1983.

Officials at all operations offices we visited said that, when fully operational, the system will help

- analyze hazard information to establish correct oversight priorities and eliminate hazards,
- identify and evaluate hazard and accident trends,
- determine where DOE should perform safety appraisals, and
- manage and identify violations by type and frequency.

This system appears to address our recommendation, but it will not be possible to evaluate the system's benefits until it has been in operation for some time.

RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM SHOWS SOME IMPROVEMENT

The greatest potential danger from a nuclear accident is the release of significant amounts of radioactive material into the environment. To minimize the potential safety and health impact of such releases, DOE must plan and prepare for radiological emergencies. In 1981 we recommended that the Secretary of Energy (1) consolidate the emergency preparedness policymaking, coordinating, and appraising functions into one organizational unit, (2) expedite the development of DOE's emergency preparedness requirements, (3) establish requirements for annual appraisals of DOE field office and contractor emergency preparedness programs and review and evaluate contractor drills on a regular basis, (4) provide the support necessary to carry out responsibilities delegated by the Federal Emergency Management Administration (FEMA) in its national effort to improve emergency preparedness around nuclear facilities, and (5) correct weaknesses noted in a March 1979 GAO report,⁶ such as coordinating with state and local

⁶Areas Around Nuclear Facilities Should Be Better Prepared for Radiological Emergencies (EMD-78-110, Mar. 30, 1979).

agencies and conducting annual simulated drills to improve DOE's emergency preparedness program.

Problems still exist in DOE's emergency preparedness program; however, DOE is taking steps in the right direction.

Policymaking, coordinating, and appraisal functions have been consolidated into one entity

Our 1981 report noted that DOE had not given its radiological emergency preparedness program sufficient priority and, in the event of an accident at a nuclear facility, DOE may not be prepared to adequately protect the public, the environment, and property from the effects of a radiological release. Responsibilities for emergency preparedness were fragmented throughout DOE, and limited headquarters' guidance had caused an atmosphere of confusion as to the roles and responsibilities of DOE organizations. DOE's action plan stated that an order would be prepared to promulgate DOE policy on reactor and nuclear facility emergency response. DOE issued the order in August 1981.

Since August 1981, the Office of the Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness has been performing DOE emergency preparedness policymaking, coordinating, and appraising functions. This office is responsible for developing and issuing policy directives, assigning responsibilities within DOE, describing implementation methods, and appraising field organizations to ensure effective implementation. All operations offices included in our current review agreed that past confusion has been eliminated and that they better understand their emergency preparedness responsibilities because of headquarter's actions.

Emergency preparedness requirements have been issued

At the time of our 1981 report, the only emergency preparedness requirements DOE had were issued in 1976 by DOE's predecessor, ERDA. The directive--referred to as ERDA manual chapter 0601, "Emergency Planning, Preparedness, and Response Program"--described ERDA's radiological emergency planning policy objectives, responsibilities, and authorities. When DOE was formed on October 1, 1977, this directive was cancelled and was only being used as reference and/or guidance until a DOE management directive was issued. DOE's action plan stated that such a directive would be issued as soon as possible.

We recommended that DOE expedite the development of emergency preparedness requirements. Specifically, these requirements should define DOE and contractor responsibilities and describe emergency preparedness criteria. Such criteria should reflect the lessons learned from TMI. On August 13, 1981, DOE issued three orders on emergency preparedness that replaced the ERDA interim guidance, established overall policy, and designated responsibility to DOE headquarters and field offices.

All three operations offices we visited during our recently completed review had taken some action to implement the orders. The Savannah River and Richland operations offices had developed implementation plans for the DOE orders. In addition, Richland issued the DOE orders directly to the contractors, while Savannah River issued supplemental orders to operating contractors defining their roles. The Albuquerque operations office had not developed the required implementation plans but had issued supplemental orders.

Program appraisals and monitoring
of emergency drills have improved

We recommended in 1981 that DOE require annual headquarters appraisals of operations offices' emergency preparedness programs and annual operations offices' appraisals of contractor programs. The appraisals, at that time, were not always scheduled or performed. We also recommended that DOE independently review and evaluate contractor emergency drills regularly to ensure that deficiencies in planning efforts were identified and employee responses to emergencies were tested. Drills at that time were not being regularly monitored. The lack of appraisals and monitoring of drills meant that DOE could not ensure that emergency preparedness programs were in place and working. DOE's action plan did not discuss appraisals as they pertain to emergency preparedness and only briefly mentioned that contractor drills should be included in minimum standards for the conduct of health physics assessments in DOE nuclear facilities. However, DOE has made improvements by appraising emergency preparedness programs and observing and participating in drills.

Appraisals

Since October 1981, DOE headquarters has appraised the emergency preparedness programs at all eight operations offices as part of the overall comprehensive appraisal program. In turn, DOE operations offices are scheduling and performing appraisals of contractors.

According to Richland operations office officials, they have appraised all their contractors. The Albuquerque operations office has performed appraisals of all seven of its area offices and 10 of its 11 contractors. Before 1981 each of these offices performed only one contractor appraisal over several years. In contrast, the Savannah River operations office has not performed any appraisals since 1975; officials told us that the hiring of additional personnel will enable them to begin appraising the operating contractor's program in October 1983.

In addition, DOE has drafted specific planning criteria for developing and evaluating emergency preparedness and, as of October 1983, was reviewing FEMA's comments on the criteria. Once the criteria are completed and issued, they will be used to uniformly develop facility, state, and local emergency plans and serve as a basis for appraising those plans.

Drills

Operations offices and area offices also determine the effectiveness of contractor emergency preparedness through reviewing and evaluating emergency drills that are conducted under simulated accident conditions. These drills test plans and employee emergency responses to identify deficiencies. Problems found by operations and area offices during drills have shown that untested plans and employee responses are usually ineffective in emergency situations. Thus, it is important that DOE ensures that these offices test contractor emergency plans and the contractors correct identified deficiencies.

In 1981 we found that DOE personnel seldom observed or evaluated drills. In our current review, we found the situation has improved in two of the operations offices we visited. The third office, Savannah River, has not changed its practices since our 1981 report, which stated that the office had not observed a contractor drill since 1978.

--The Richland operations office observes drills, has both management and employees participate in operating contractor drills, and reviews copies of all contractor critiques. Richland officials discuss recommendations for improvements with the contractors and follow up to assure improvements are made.

--The Albuquerque operations office seldom observes and evaluates drills because they are held from coast to coast. However, Albuquerque area offices are usually involved in drills and the operations office now receives critiques from the area offices on the drills that are reviewed. Also, the Albuquerque operations office has begun annual emergency preparedness functional appraisals, during which contractor critiques of drills are reviewed.

Some actions have been taken which respond to our 1981 recommendations; however, all operations and area offices are not monitoring contractor drills regularly. At a minimum, as a substitute for observing drills first hand, each office could review the emergency drill critiques, make suggestions, and follow up on them, as is being done at the Richland and Albuquerque operation offices.

FEMA and DOE coordination has improved

FEMA is responsible for formulating federal emergency preparedness policies and coordinating executive agencies' peacetime and wartime emergency planning and preparedness functions. One responsibility FEMA has for peacetime emergency planning is to lead and coordinate emergency response planning for nuclear accidents.

On October 22, 1980, FEMA assigned specific tasks for radiological emergency response planning and preparedness to federal agencies. Several tasks were assigned to DOE, including

- planning and ensuring preparedness for DOE facilities;
- assisting state and local governments to prepare radiological emergency response plans for DOE facilities;
- assisting FEMA to develop planning guidance for state and local governments;
- participating with FEMA to (1) assist state and local governments to develop their radiological emergency response plans, (2) evaluate exercises to test plans, and (3) review and evaluate the plans and preparedness; and
- providing representation to and support for FEMA's regional assistance committees.

We reported in 1981 that DOE was not accomplishing these tasks and recommended that DOE provide more financial and staff resources to support FEMA's mission. DOE's action plan recommended that DOE develop with FEMA and NRC a "memorandum of understanding" that clearly defines DOE, FEMA, and NRC responsibilities during an emergency at DOE sites. This understanding would also provide for DOE to fully implement the tasks FEMA assigned.

We found that DOE headquarters is working to define its emergency preparedness responsibility. In addition, the Richland and Albuquerque operations offices have performed all the tasks assigned to them by FEMA. On the other hand, the Savannah River operations office has provided only enough staffing and travel resources to support about half of FEMA's scheduled regional activities, which include reviewing state and local emergency plans around 11 commercial nuclear power stations and observing 11 state/local radiological emergency response exercises.

DOE has taken few actions
on our March 1979 recommendations

In our 1979 report we made several recommendations to the Secretary of Energy for correcting weaknesses in DOE's emergency preparedness program. The weaknesses identified included failure to

- inform the public of potential hazards (such as radiation) and related protective measures,
- develop formal and explicit agreements for emergency preparedness support with state and local government agencies,
- encourage state and local participation in facility drills
- perform comprehensive, simulated drills annually, and
- review headquarters facility plans at least every 2 years.

Our 1981 report noted that these weaknesses still existed. In our current review, we reexamined these weaknesses and found that DOE has done little to correct them. DOE's actions at headquarters and operations offices we visited consist of the following.

- The Savannah River operations office has reached agreement with the state of Georgia (a neighboring state) delineating the roles and responsibilities of each party during an offsite radiological emergency.
- The Richland operations office has initiated three drills under simulated accident conditions to test its emergency plans.
- DOE headquarters is reviewing contractor facility emergency plans on a sample basis while appraising its operations offices.

No formal actions or programs have been initiated to inform the public of potential hazards and protective measures; however, operations office officials said that they maintain informal contact with many sections of the public concerning these matters.

DOE HAS MADE PROGRESS
TO ENSURE THAT ITS OLDER
NUCLEAR FACILITIES ARE SAFE

Nearly 10 years ago DOE began a program to perform safety analyses of all of its older facilities to determine if they should continue to operate, be modified to improve safety, or be permanently closed. Contractors in charge of operating the facilities were to make these safety analyses, which the operations offices would review and approve. The reviews were supposed to compare the facilities' designs with current guides, codes, and standards.

In 1981 we recommended that the Secretary of Energy take actions to (1) issue specific criteria for conducting safety analyses for older nuclear facilities, (2) increase safety analysis program staffing and budget to provide the program with the capability to adequately conduct and review safety analyses, and (3) establish a date for completion of the safety analyses of older nuclear facilities.

DOE headquarters has improved its
criteria for conducting facility
safety analyses

We reported in 1981 that DOE had not established specific criteria for conducting safety analyses of older nuclear facilities that, because they were built before DOE instituted the current preconstruction reviews, might not meet the current safety design criteria. Each operations office was responsible for establishing priorities and programs for analyzing the safety of DOE's older and potentially hazardous facilities. However,

many older nuclear facilities had not been analyzed to determine what hazards existed. DOE's action plan did not address this situation.

DOE has taken actions that appear to have improved its facility safety analyses. On August 13, 1981, DOE issued Order 5481.1A, "Safety Analysis and Review System," which established additional program requirements for conducting safety analyses. DOE headquarters, in appraising the safety analysis programs at several operations offices, has looked at whether such offices are uniformly applying that order. The appraisals concluded that the operations offices have been effectively implementing the DOE safety analysis requirements. DOE headquarters plans to appraise operations offices every 2 years to ensure that they continue to adhere to the requirements.

Staffing and budget have increased and completion dates have been established for facility safety analyses

In 1981 we found that some locations lacked the staffing and priorities needed to expedite completion of safety analyses. The effect is that DOE lacked assurance that the field offices have (1) identified potential hazards, (2) analyzed the impacts of the identified hazards, and (3) taken measures to eliminate, control, or mitigate the hazards.

Although the action plan did not discuss facility safety analyses, we found that the operations offices have given such analyses for older DOE nuclear facilities more priority than when we reported on this situation in 1981. Specifically, they have established program target completion dates and committed more funds by securing additional positions and hiring consultants to expedite completion of the analyses.

These actions have helped to reduce but not eliminate the analysis backlog that we reported on in 1981. At each of the three operations offices, we found that efforts were underway to accomplish their respective facility safety analyses; however, at two offices, lack of staffing may prevent target dates from being met. At the Richland operations office, all nuclear facilities with potential for major onsite or offsite adverse impacts to people or the environment have had safety analyses, and plans are to complete the remaining analyses during fiscal year 1984. The Savannah River operations office has developed a plan and has set 1985 as a target date for completing its backlog of safety analyses for its nonreactor nuclear facilities. An operations office official stated that Savannah River can meet the 1985 completion date only if it adds resources as justified in its implementation plan for DOE Order 5481.1A. The office has been allocated additional positions for fiscal years 1982 and 1983 and has hired a consulting firm to help review the analyses; however, Savannah River officials maintain that additional personnel are needed (although they could not tell us how many).

All of the area offices that report to the Albuquerque operations office--except the area office at the Los Alamos National Laboratory in New Mexico--have established schedules for submitting safety analyses for their facilities.

- The Los Alamos area office is now assessing its 72 facilities to determine whether the analyses that have already been completed are adequate or whether it should prepare new ones.
- The Rocky Flats area office has performed safety analyses at all 11 existing facilities, but these have not been approved by the operations office.
- The Amarillo area office has completed and approved 5 safety analyses, drafted 14 more which are under review by the operations office, but has not started safety analyses on the remaining 32 facilities. Amarillo will proceed with analyses of these 32 facilities even though the facilities may be replaced in 1986 under DOE's facility upgrade plans.⁷

The Albuquerque operations office has acquired additional staff and hired a consultant to help with facility safety analyses; however, officials said that staffing limitations still prevent them from finalizing the analyses. Analyses of new facilities, including facilities undergoing major modifications, will be finalized first followed by analyses of older facilities.

DOE'S ENVIRONMENTAL MONITORING PROGRAM HAS NOT CHANGED SIGNIFICANTLY

DOE's overall policy on radiological releases is to limit public exposure to as small a fraction as possible of DOE's established annual maximum exposures allowable. However, we reported in 1981 that operating contractors were allowed to use considerable latitude in tailoring their environmental surveillance programs to meet particular needs at each site. Each contractor could monitor different substances using different methodologies and time intervals. This latitude did not provide uniformity to ensure that program standards and requirements were met and to help achieve a comparably high level of monitoring sophistication and reliability. We recommended that the Secretary of Energy (1) issue requirements for mandatory application of environmental monitoring and environmental monitoring oversight (appraisals) at all DOE facilities and (2) develop a coordinated system whereby DOE contractor-supplied environmental monitoring data are verified with data from state or local government agencies that have monitoring capability.

⁷DOE currently has extensive plans to upgrade many of its weapons production facilities, including those of Amarillo.

DOE has not issued requirements
but appraisals demonstrate progress

In 1981 we reported that while most operating contractors monitor air, water, food, milk, vegetation, and soil, not all of the facilities included in the review were monitored for the same substances, by the same methodology, and at the same time interval. The differences noted were at least partially attributable to the lack of requirements. Although differences between DOE facilities, their operations, and environmental conditions preclude complete uniformity in environmental monitoring, we recommended that requirements be issued so the programs could be administered as uniformly as possible.

DOE's action plan did not address environmental monitoring. However, since 1981, DOE headquarters safety and health officials have performed six environmental monitoring appraisals and concluded that DOE's operations offices are operating adequate environmental monitoring programs. In turn, operations offices' appraisals of contractors' programs concluded that contractors are conducting environmental monitoring in a way that ensures reliable data. DOE officials are reluctant to issue requirements because of the diversity of the facilities' environments. They said that climatic conditions as well as composition of soil, water, and vegetation vary considerably between facilities, making it difficult to develop uniform criteria for monitoring. However, they said that requirements governing monitoring frequency and methodology could probably be developed. Until DOE issues such requirements, it will have no real assurance of uniform performance by contractors or operations offices.

Limited verification of contractor
environmental monitoring
data continues

In 1981 we reported that, while the operating contractors were the primary source of environmental monitoring data for DOE's nuclear facilities, DOE was not taking advantage of independent information to test the accuracy of the contractors' data. We stated that at all DOE facilities we visited, state and/or local agencies provided offsite monitoring and collected data that DOE could use to verify the accuracy of environmental data submitted by the operating contractors. The operations offices were making only limited use of this independent information.

DOE still does not have a coordinated system of verifying contractor-supplied environmental monitoring data; however, some operations offices make use of state and local data and plan to make more use of such data as shown in the examples below.

--According to a Savannah River operations office official, South Carolina and Georgia collect data but do not regularly send the results to the operations office, even though data collected by the operating contractor is sent to the states. The official stated that exchanging data

with states will be improved now that more personnel (one person has been hired and two more staffyears are authorized) are available for the environmental monitoring function.

--An Albuquerque operations office environmental monitoring official told us that at the Amarillo Pantex facility the state of Texas collects soil and drinking water samples and maintains air monitors. Quarterly, the state and operating contractor share radiation level readings. The state of Texas has informed the Amarillo area office that exchanging other monitoring data is not necessary, because if the state finds something wrong, it will contact DOE.

--The Richland operations office and the state of Washington take water samples every 3 months and then analyze and compare results.

In some cases, as shown above, DOE is verifying the accuracy of contractor environmental monitoring data. However, until all contractor data is independently verified, DOE will have to continue to rely on the operating contractor to ensure that environmental monitoring data are accurate and complete. In some cases, such as Georgia and South Carolina, state- and local-gathered data are already available for verification purposes and where unavailable, DOE could be encouraging development of such data.

CONCLUSIONS

In response to the 1981 DOE task force report, DOE developed an action plan to identify actions necessary to apply the lessons learned from the TMI accident and to assure that DOE nuclear facilities are operated safely. Some of the planned actions have been implemented and have also responded to recommendations made in our 1981 report, even though DOE's official position is that DOE took no actions pursuant to our report. Other actions may correct problems noted in our report, if and when they are fully implemented.

The most significant single step DOE has taken since 1981 to correct problems in its safety and health program has been to conduct periodic comprehensive appraisals of its operations offices. These appraisals have positive effects on many areas covered by our previous recommendations. They help DOE in its efforts to ensure that its operations offices are (1) handling worker protection complaints and violations effectively, (2) operating adequate emergency preparedness programs, (3) uniformly applying general requirements for conducting safety analyses of older nuclear facilities, and (4) operating adequate environmental monitoring programs. As long as comprehensive appraisals are performed every 2 years (as planned) for each operations office, they should prove to be a useful tool for providing a regular and uniform measure of performance in these areas.

DOE has made other improvements in areas we reported on in 1981. These include issuing guidance for handling employee

complaints and violations, issuing orders for clarifying its emergency response policy and directives, and drafting emergency preparedness criteria. DOE has also consolidated emergency preparedness policymaking, coordinating, and appraisal functions into one organization; is in the process of establishing a systematic method of identifying hazards at its facilities; and has begun to carry out planned actions to provide more support to FEMA.

On the other hand, DOE still needs further improvements in almost every area we reported on in 1981.

--DOE needs to establish a formal, mandatory process--rather than only guidance--to handle worker protection violations found during all types of oversight activities.

--Operations offices need to perform annual appraisals of contractor safety and health programs.

--Operations offices need to regularly monitor and/or review critiques of contractor emergency preparedness drills.

--DOE needs to take action on our March 1979 emergency preparedness recommendations.

--DOE needs to develop means to ensure that operations offices meet established time frames for completing facility safety analyses.

--Environmental monitoring by operations offices should be uniform to ensure that contractors meet requirements.

--Outside verification should be used where possible to ensure contractor environmental monitoring data are accurate and complete.

Our 1981 report called for these improvements to be made and, on the basis of our current review, we believe that they are still needed today. Thus, we encourage DOE to continue making improvements along the lines called for in our prior report. However, we caution that making these improvements on a piecemeal basis will afford little assurance that these or similar problems will not reappear in future years. Thus, a more comprehensive solution is needed, as discussed in chapter 4.

CHAPTER 4

DOE NEEDS ORGANIZATIONAL CHANGES IN SAFETY AND HEALTH OVERSIGHT

Correcting safety and health oversight deficiencies on a piecemeal basis does not necessarily solve the underlying cause of those deficiencies. The deficiencies are partially caused by DOE's organizational framework, which is not suitable for ensuring the best possible safety and health oversight program for DOE's nuclear facilities. Recommendations have been made to change the organization of DOE's nuclear safety and health program. DOE has made some organizational changes; however, for the most part, these have had little effect on problems identified in our 1981 report and in DOE's task force report. Reorganization of the safety and health program is needed to provide (1) separation of safety and health responsibility from operations responsibility, (2) authority to cause actions to be taken, and (3) overall safety and health responsibility. The program needs such attributes to ensure protection for workers and the public.

FEW ORGANIZATIONAL CHANGES HAVE BEEN MADE

In 1981 we reported that the numerous problems in DOE's safety and health oversight program might be individually correctable but overall they indicated the need for major organizational changes in the program. We reported that three factors contributed to the program's overall problems.

- DOE's safety and health organization structure placed field safety and health personnel within the operation office structure and did not allow for independent oversight. The headquarters staff did not have the authority to ensure that policies were implemented.
- A conflict existed between program activities and safety and health needs, resulting in competition for staff and other resources. In many cases safety and health was considered the lower priority.
- The TMI accident hurt the credibility of the safety and health program in the public's eyes.

To alleviate these problems and minimize the contributing factors, we suggested three alternatives: (1) reorganize the safety and health oversight function within DOE, (2) have NRC regulate DOE's nuclear facilities for radiological matters and OSHA regulate for nonradiological matters, or (3) have NRC or OSHA periodically provide oversight and DOE maintain day-to-day regulation.

We recommended that the Secretary of Energy elevate the oversight aspects of the headquarters safety and health organization to a staff function reporting to DOE's Under Secretary. The DOE task force made a similar recommendation to establish a new

separate organization under the Under Secretary. An organization chart showing our recommended change appears on the next page.

We also recommended that the Secretary reorganize those operations offices organizations involved in safety and health oversight to report directly, and exclusively, to the elevated safety and health organization at headquarters.

DOE did make a minor reorganization of the headquarters safety and health function; but it did not elevate the safety and health organization to a level that provides the authority, independence, and visibility needed to correct deficiencies.

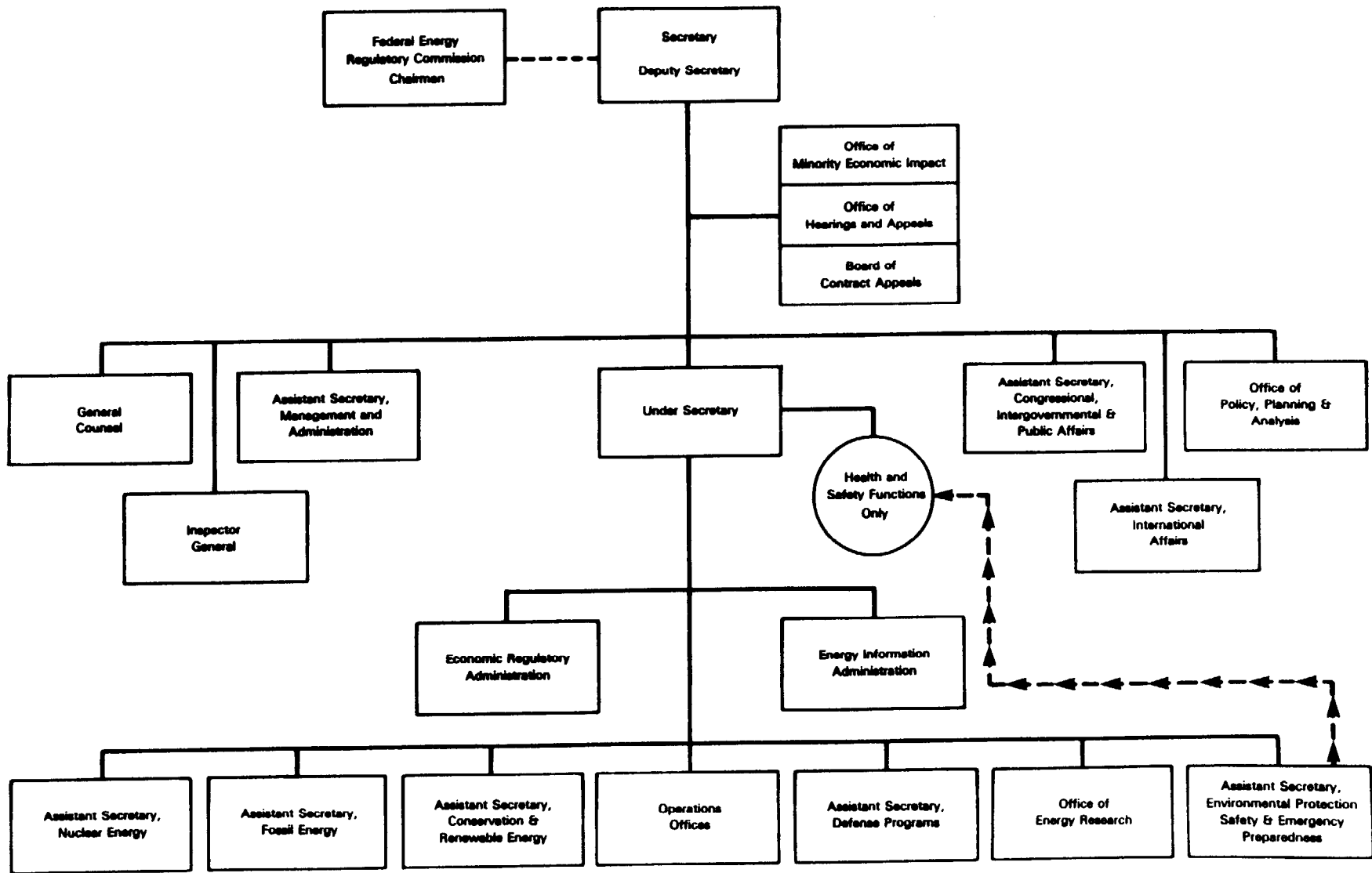
DOE headquarters organization has not been elevated

Task force members told us that DOE's action plan was not responsive to the task force's recommendations on organization. At the time the action plan was being formulated, a broad restructuring of DOE was in process. The action plan reported that the consensus of this restructuring was that the safety and health function should be placed high enough in the organization to assure the necessary senior management attention. The result of this restructuring was to elevate the nuclear safety function from reporting to a Division Director (two levels below the Assistant Secretary) to reporting to a Deputy Assistant Secretary (one level below the Assistant Secretary).

We reported in 1981 that this group still lacked authority and independence in safety and health matters. We believe that this has proven to be the case because, as noted previously in this report and in the 1981 report:

- DOE has not established a uniform policy for handling safety and health violations found during non-OSHA type oversight activities.
- Safety analyses are not completed for older nuclear facilities.
- All DOE contractor safety and health programs have not been appraised.
- Operations and area offices are not uniformly monitoring contractor emergency preparedness drills or encouraging state and local participation.
- Little has been done formally to inform the public of potential hazards during offsite radiological emergencies.
- Verification of contractor environmental monitoring data with non-DOE data sources is not being done in all locations where verification is possible.

**Current DOE Organization
Showing Elevation of Safety And
Health Organization**



Source: DOE

Elevating the DOE headquarters safety and health function to report directly to DOE's Under Secretary as a "staff" organization could alleviate problems such as those described on the previous pages by providing the authority to not only establish, but also to require program offices' compliance with safety and health standards and policies. This would also give safety and health more emphasis when competing with program offices for personnel and other resources necessary to eliminate the problems.

Without such an elevation of the headquarters organization, safety and health may continue to be (1) less competitive than program offices for resources and (2) dependent on program offices to carry out its standards and policies. Safety and health may continue to maintain its low visibility unless the organization is elevated or another accident such as TMI brings it to the forefront again.

Comments vary on suggested organizational alternatives

Some DOE headquarters safety and health officials and a member of the action plan formulation team stated that elevating the organization as we recommended in our 1981 report would not provide the desired visibility and that the former Secretary of Energy did not want a large staff at the Under Secretary level. Others said that, under the current DOE Secretary, the Under Secretary might not be the Chief Operating Officer as he was in 1981 and, therefore, would not be a logical official to handle safety and health matters. On the other hand, other officials said that any elevation of the organization would be an improvement.

Many DOE officials we talked with agreed that the best approach to reorganizing is one that recognizes that the primary responsibility for safety and health must rest with line officials. If these officials are not committed to safety and health, it will not exist. According to DOE officials, at the same time there must be assurance that the officials do not compromise safety in the interest of carrying out their respective programs. This means that an independent organization must oversee the senior line official at each level (contractor, operations and area offices, and headquarters).

One reorganization scheme suggested by DOE safety and health officials since our 1981 report is for an assistant secretary to have as his/her sole responsibility the independent oversight of DOE safety and health. (The assistant secretary currently responsible for safety and health oversight is also responsible for Naval Petroleum and Oil Shale programs and the Strategic Petroleum Reserve Program.) The assistant secretary would report directly to the Chief Operating Officer (the Under Secretary), making him/her of equal stature to presidentially appointed assistant secretaries and at the same time giving more importance to the oversight program.

This official would be responsible for issuing DOE environment, health, and quality assurance policies; performing oversight activities; and providing support to program elements in areas where duplicating safety specialties throughout DOE is unwise. Under this organization all program assistant secretary organizations would still need some safety capability. This would ensure that agencywide safety and health policies and standards are reviewed in the context of their potential applicability to, impact on, and effectiveness in the programs for which other assistant secretaries are responsible.

DOE may no longer need to reorganize its field organizations

In 1981 we said that the then-current organizational structure offered great potential for conflict between program activities and safety and health activities. Also, having the safety and health staff organized under eight autonomous operations offices inhibited applying safety and health standards and policies uniformly. To increase program uniformity and to isolate field safety and health staff from program activities, we recommended that DOE reorganize field organizations involved in safety and health oversight to report directly to the elevated safety and health organizations at headquarters.

DOE did not implement our recommendation; however, it has taken action that reduces the concern we had during the previous review. Since 1981 the operations offices' safety and health organizations have been separated from program organizations. This should reduce the potential for conflict between program activities and safety and health activities. Additionally, DOE headquarters has (1) provided more safety and health guidance to the operations offices in the form of new DOE orders (see pp. 12 and 15) and (2) performed some appraisals at operations offices to help ensure more uniformity in applying safety and health standards and policies. (See p. 23.) These actions should increase uniformity in applying standards and policies and increase independence, which should lessen the potential for conflict between program activities and safety and health activities at field locations. Because of these actions, the need for DOE to reorganize its field organizations to report directly to headquarters appears less important and might not be necessary if DOE elevates its headquarters safety and health organization.

CONCLUSIONS

DOE has made improvements in its safety and health program. However, the improvements have been made, for the most part, on a piecemeal basis. Consequently the major cause of the problems has not been addressed. DOE has done little since our 1981 report to (1) enhance the safety and health program officials' authority to enforce standards and requirements, (2) ensure the program's independence from competing programs, or (3) provide more visibility or priority within DOE. For the most part, DOE's improvements took place because of the TMI powerplant accident and were in response to intense outside scrutiny. Thus, we are

further concerned that if the attention to nuclear safety due to TMI should later diminish, the situation could revert to the condition that existed before TMI. We therefore believe that the long-term solution to ensuring an adequate safety and health program lies in establishing within DOE an independent safety and health oversight organization.

We continue to believe that DOE's safety and health function should be reorganized by elevating it to a staff function reporting to the Under Secretary, as called for in our 1981 report, or to be an assistant secretary level official's sole responsibility.

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