

GAO

September 1988

NUCLEAR HEALTH AND SAFETY

DOE's Management and Funding of Environment, Safety, and Health Programs



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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-231293

September 23, 1988

The Honorable James H. Scheuer
The Honorable David E. Skaggs
House of Representatives

On June 19, 1987, you requested that we evaluate the adequacy and effectiveness of the Department of Energy's (DOE) management and funding structure for environmental, safety, and health (ES&H) activities at its nuclear defense facilities. You specifically asked us to determine whether these activities are receiving the appropriate attention.

Over the past several years (see the list of GAO products in the bibliography, p. 15), we have evaluated DOE's ES&H efforts and found that DOE has not given sufficient emphasis to ES&H protection at DOE's nuclear defense complex. This complex, which produces nuclear material (plutonium and tritium) and weapons for the nation's defense needs, comprises about 50 major facilities at various installations around the country. Many of these were built more than 30 years ago and consequently--because of age or outdated designs--have incurred serious ES&H problems. The major problems we identified were: (1) safety deficiencies in reactor operations and maintenance, (2) contaminated groundwater and soil with high levels of radioactive and hazardous substances, and (3) noncompliance with environmental laws.

In response to recommendations we and others have made, DOE is changing many of its management and funding procedures to improve its ES&H efforts. Because such changes have not been completed or have only recently been implemented, it is too early to conclude whether these actions are adequate or effective. Thus, we agreed to provide you this fact sheet on the status of the changes.

In summary, DOE is modifying its ES&H programs so that it can improve its management and funding efforts for ES&H activities. Specifically, DOE is (1) setting up a program within the Office of Defense Programs to consolidate the day-to-day operational management and funding of environmental restoration activities; (2) developing a computer system to track funds budgeted and obligated for ES&H efforts; and (3) attempting to strengthen ES&H oversight by, for example, revising ES&H management

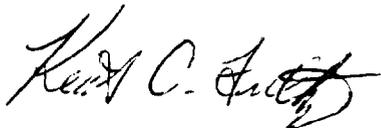
objectives and standards. In section 1, we provide a historical perspective, based on our work in the area since 1980, on problems within the DOE nuclear defense complex. In sections 2 through 4, for each of DOE's program modifications, we present a summary of the purpose, status, and planned actions.

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We reviewed DOE orders to identify the Department's current organizational structure and procedures for ES&H activities. We also reviewed pertinent documents, such as DOE environmental survey and technical safety reports and overall ES&H plans, to identify DOE's ongoing and planned efforts. Furthermore, we met with DOE officials to discuss their efforts to improve the implementation, accountability, and oversight of ES&H activities. To understand the need for the changes being made and their potential benefits, we relied on our previous reports concerning DOE's ES&H programs, our continuing work in the area, and DOE studies discussing the importance of the ES&H changes.

We discussed the contents of this fact sheet with cognizant DOE officials, who generally agreed with the facts presented, and their views have been incorporated where appropriate. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this fact sheet for 30 days from the date of issuance. At that time, we will send copies to the Secretary of Energy and other interested parties. If you have further questions, please contact me at (202) 275-1441.

Major contributors to this fact sheet are listed in appendix I.



Keith O. Fultz
Senior Associate Director

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ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DOE	Department of Energy
EARS	Environmental Activity Reporting System
ES&H	environmental, safety, and health
GAO	General Accounting Office
RCRA	Resources Conservation and Recovery Act of 1976

SECTION 1

HISTORICAL PERSPECTIVE ON PROBLEMS WITHIN THE DOE NUCLEAR DEFENSE COMPLEX

Since 1980, we have issued 35 reports and testimonies identifying important environmental, safety, and health (ES&H) problems at the Department of Energy's (DOE) nuclear defense complex (see the bibliography, p. 15). The major ones related to nuclear reactor safety, groundwater and soil contamination, and compliance with environmental laws.

As early as 1981, and again in 1983, we pointed out that DOE's oversight structure was one cause of the ES&H shortcomings, and we recommended that DOE set up a separate office, reporting directly to the Under Secretary, to oversee ES&H matters.¹ DOE acted in September 1985 by establishing an Office of Assistant Secretary for Environment, Safety, and Health at the same level as the Office of Assistant Secretary for Defense Programs, with both offices reporting directly to the Under Secretary. This newly created office was to have oversight responsibility for DOE's ES&H activities. At the same time, DOE also announced a number of other initiatives to strengthen its ES&H programs. The more important initiatives included revising DOE orders that govern the conduct of the Department's ES&H activities and conducting safety appraisals and environmental surveys at DOE facilities. The safety appraisals and environmental surveys are particularly important because they are intended to provide the necessary information for management to use in setting priorities for corrective action.

Subsequently, in November 1986, we reported that DOE's Hanford facility in the state of Washington had delays and other problems in meeting environmental requirements.² For example, Hanford had been slow to identify all units that should be regulated under the Resource Conservation and Recovery Act (RCRA), and it had not identified all potential Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites that may require corrective actions. RCRA and CERCLA are comprehensive environmental statutes that address the regulation of

¹Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities (EMD-81-108, Aug. 4, 1981); DOE's Safety and Health Oversight Program at Nuclear Facilities Could Be Strengthened (GAO/RCED-84-50, Nov. 30, 1983).

²Nuclear Waste: Unresolved Issues Concerning Hanford's Waste Management Practices (GAO/RCED-87-30, Nov. 4, 1986).

ongoing hazardous waste activities and the cleanup of inactive hazardous waste sites, respectively.

Furthermore, in December 1987, we stated that DOE needed to improve its system for tracking ES&H funds.³ We reported that DOE could not readily identify funds budgeted or expended for bringing its facilities into compliance with RCRA and CERCLA. Funds expended for these activities were commingled with funds expended under existing defense programs (e.g., for nuclear material production). Consequently, DOE was unable to demonstrate good internal controls over RCRA & CERCLA funds or compliance with Executive Order 12088, which requires federal agencies to ensure that sufficient funds are requested in their budget for environmental requirements and are not used for other purposes. We, therefore, recommended that DOE separately track RCRA and CERCLA dollars.

More recently, in July 1988, we reported that the cost of addressing problems at DOE's nuclear defense facilities is expected to be from \$100 billion to over \$130 billion.⁴ The report stated that DOE faces three major problems: the upgrading of existing capability to meet nuclear defense needs in a safe and environmentally acceptable manner, environmental restoration to clean up existing contamination at DOE installations, and the safe disposal of radioactive waste and decontamination of nuclear facilities. Expanded capabilities and relocation of facilities could add another \$15 billion to \$25 billion to the overall cost.

We also reported in July 1988 that ES&H oversight at DOE's nuclear facilities could be strengthened.⁵ We identified the need for legislatively mandating the Office of Assistant Secretary for ES&H within DOE. As noted earlier, DOE established the office in 1985, but it was not legislatively mandated. In the report, we also identified the need for establishing independent oversight of DOE's nuclear facilities and pointed out that DOE had unclear safety standards. To address the latter, we recommended that DOE revise its orders to establish clear safety standards and implementation policies.

³Environmental Funding: DOE Needs To Better Identify Funds for Hazardous Waste Compliance (GAO/RCED-88-62, Dec. 16, 1987).

⁴Nuclear Health and Safety: Dealing With Problems in the Nuclear Defense Complex Expected To Cost Over \$100 Billion (GAO/RCED-88-197BR, July 6, 1988).

⁵Nuclear Health And Safety: Oversight at DOE's Nuclear Facilities Can Be Strengthened (GAO/RCED-88-137, July 8, 1988).

Thus, we have identified areas in which DOE needs to improve its management and funding efforts for ES&H activities. These areas relate to the day-to-day management of environmental restoration activities, the tracking of funds for environmental activities, and ES&H oversight functions. Improvements in these areas will become more important as DOE begins to deal with the problems at its nuclear defense complex, which are expected to have staggering costs--ranging from \$100 billion to over \$130 billion.

DOE is attempting to improve its management and funding structure for ES&H activities in the three areas we have identified as needing attention. These efforts include (1) establishing a separate program within the Office of Defense Programs to consolidate the day-to-day management and funding of environmental restoration activities (see sec. 2), (2) developing a system to specifically track funds not only for environmental but also for safety and health activities (see sec. 3), and (3) strengthening ES&H oversight efforts (see sec. 4).

SECTION 2

ESTABLISHMENT OF PROGRAM FOR ENVIRONMENTAL RESTORATION ACTIVITIES

PURPOSE

To consolidate and hence improve the day-to-day operational management and funding efforts for environmental remedial actions, such as the cleanup of CERCLA inactive waste sites.⁶

STATUS

- o In 1987, DOE established a program within the Office of Defense Programs to monitor and fund environmental restoration activities at its defense facilities. (These activities are separate from ES&H oversight activities, which are discussed in sec. 4.)
- o The program staff has set fiscal year 1989 priorities for inactive waste site cleanup at DOE defense facilities. Among those receiving the highest priorities are Lawrence Livermore National Laboratory in California, Oak Ridge National Laboratory in Tennessee, Fernald Feed Materials Production Center in Ohio, and the Rocky Flats facilities in Colorado.
- o The program staff has also identified types of environmental restoration program activities, such as site discovery, site assessment, site characterization, remedial design, cleanup activity, and funding for these activities.

PLANNED ACTIONS

- o The program staff plans to develop a detailed method for ranking environmental activities; this will be used to establish priorities for restoration projects in fiscal year 1990.
- o By the end of fiscal year 1989, the staff plans to computerize its project reporting system so that it can quickly retrieve data and assess the progress of its environmental restoration activities.

⁶DOE has determined that management of ongoing RCRA type compliance activities should continue to remain a separate but integral part of defense program functions.

SECTION 3

DEVELOPMENT OF SYSTEM TO TRACK ES&H FUNDS

PURPOSE

To improve the tracking of funds budgeted and obligated for ES&H activities.

STATUS

- o DOE is developing a new computer system, the Environmental Activity Reporting System (EARS), that will maintain separate accounts for budgeted and obligated dollars for ES&H activities. The system will generate data for preparing ES&H budgets and identifying ES&H costs.
- In the environmental area, DOE is maintaining the data by defense facility and by types of environmental activities, such as cleaning up inactive waste sites (CERCLA), bringing active waste facilities into environmental compliance (RCRA), and complying with other environmental regulations (those in the clean air and clean water statutes).
- In the safety and health area, DOE is maintaining the data by defense facility and by types of safety and health activities, such as upgrading fire systems and improving instruments and safety control systems.

PLANNED ACTIONS

- o DOE, using EARS, plans to generate detailed environmental restoration budget data for fiscal year 1990.
- o With EARS, DOE also plans to generate quarterly cost reports for ES&H activities beginning in January 1989.

SECTION 4

OVERSIGHT EFFORTS

PURPOSE

To strengthen overall ES&H programs within DOE.

STATUS

- o In September 1985, the Secretary of Energy announced seven initiatives to strengthen DOE's ES&H programs. DOE has made efforts in implementing all the initiatives. The major efforts included:
 - establishment of the Office of Assistant Secretary for Environment, Safety, and Health to provide internal oversight of DOE's ES&H activities;
 - revision of ES&H orders governing the conduct of DOE operations, including the revision of management objectives and standards;
 - completion of 20 of 35 planned preliminary environmental survey reports; and
 - completion of 19 of 41 planned technical safety appraisal reports.
- o In late 1987, DOE established an Advisory Committee on Nuclear Facility Safety to review safety at DOE's nuclear defense facilities and report any findings to the Secretary of Energy.⁷
- o Safety and health staff have been detailed to defense sites to oversee safety and health activities. Currently, there are staff at Rocky Flats, Oak Ridge, and Savannah River.

⁷In our report, Nuclear Health and Safety: Oversight at DOE's Nuclear Facilities Can Be Strengthened (GAO/RCED-88-137, July 8, 1988), we noted that this advisory committee does not meet our recommendation for establishing independent oversight of DOE's nuclear facilities. It appears that the committee is not an independent organization and does not have clear authority to require DOE to address its findings and recommendations. In addition, it is unclear to what extent such findings and recommendations will be made available to the public.

(DOE is considering similar on-site monitoring in the environmental area.)

- o DOE has modified the procedures for how ES&H orders are developed in an effort to streamline the process and provide increased independence to the ES&H office by authorizing the office to issue directives without concurrence from other DOE offices.

PLANNED ACTIONS

- o DOE plans to finish revising, by late 1988, about 15 DOE orders relating to safety and health and hazardous waste operations for the purpose of clarifying their objectives and procedures. These orders include Order 5400, governing radiation protection of the public and the environment, Order 5400.5, governing RCRA, and Order 5400.4, governing CERCLA.
- o DOE plans to complete its environmental surveys and issue a summary report by late 1989.
- o Technical safety appraisal reports are expected to be completed by June 1989.

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