

GAO

Report to the Chairman, Environment,
Energy, and Natural Resources
Subcommittee, Committee on
Government Operations,
House of Representatives

March 1993

NUCLEAR HEALTH AND SAFETY

Corrective Actions on Tiger Teams' Findings Progressing Slower Than Planned



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

Resources, Community, and
Economic Development Division

B-251178

March 25, 1993

The Honorable Mike Synar
Chairman, Environment, Energy, and
Natural Resources Subcommittee
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

Since 1989, the Department of Energy (DOE) has used Tiger Teams—teams composed of DOE and contractor experts on environment, safety, and health (ES&H)—to assess DOE facilities' compliance with ES&H regulations. Concerned about DOE's ability to implement timely corrective actions for the problems identified by the Tiger Teams, you asked us to determine (1) the current status of Tiger Team and follow-on progress assessments, (2) the responsiveness of DOE facilities in correcting the problems identified, (3) DOE's methods for verifying that the corrective actions taken are adequate, (4) the effect contractors' responsiveness to Tiger Team findings has had on award fees provided under cost-plus-award-fee contracts, and (5) DOE's methods for analyzing and disseminating information on lessons learned from the Tiger Team assessments.

Results in Brief

Tiger Team assessments have contributed to raising awareness throughout DOE of the importance of ES&H compliance. Separate Tiger Teams assessed ES&H compliance at all 35 major DOE facilities between June 1989 and July 1992. The teams reported a total of 8,715 findings. The problems identified ranged from specific environmental deficiencies, such as storage of hazardous waste in rusted and dented drums, to more generic ES&H management deficiencies, such as outdated or incomplete procedures. In July 1991, DOE established a new program—the ES&H Progress Assessment Program—to follow up on Tiger Team assessments. Since October 1991, DOE has completed ES&H progress assessments at 6 of the 35 facilities. As of December 1992, reports for the first five progress assessments had been completed. While the reports have identified improvements, they have also found that deficiencies remain in the corrective action process and the implementation of formal policies, plans, and procedures, among other areas.

As of March 31, 1992, the latest date for which comparable data are available, corrective actions had been completed on 40 percent of Tiger

Team findings for the 23 facilities whose plans for taking corrective action DOE had approved.¹ However, according to DOE and contractor officials, progress has been slower than anticipated, in part because of inadequate resources and overly optimistic milestones.

While the four facilities we visited had implemented procedures for verifying that the corrective actions taken by contractors were adequate, DOE's first five progress assessments found that this was not the case at all facilities. In addition, at the time of our visit, the Argonne Area Office's written procedures did not include steps for verifying that Tiger Team findings for which DOE had lead responsibility have been properly addressed.

We found that, for the most part, DOE evaluated the contractors' performance and responsiveness in addressing Tiger Team findings when determining the appropriate fees to be awarded under cost-plus-award-fee-contracts. However, because determination of award fees is largely subjective and responsiveness to Tiger Team findings represents only a part of overall ES&H performance, we could not determine the effect of the contractors' responsiveness on award fees.

DOE analyzes Tiger Team findings and disseminates information on the lessons learned through a variety of techniques. These techniques include entering the assessment reports and corrective action plans for each facility in DOE's Safety Performance Measurement System (SPMS) data base and organizing workshops for DOE and contractor officials. However, at the facilities we visited, DOE and contractor officials responsible for taking corrective actions said that they learned of the steps other facilities had taken primarily through discussions with officials at DOE headquarters and field offices and with other contractors.

Background

In June 1989, the Secretary of Energy announced a 10-point initiative to (1) bring all DOE facilities into compliance with federal, state, and local ES&H laws and regulations and DOE orders and (2) strengthen safety, environmental protection, and waste management programs. As part of this initiative, the Secretary established a program in which teams of technical experts—commonly called Tiger Teams—performed comprehensive ES&H compliance assessments at DOE facilities. The purpose of the assessments was to provide the Secretary with current

¹Throughout this report, we refer to the status of corrective actions as of March 31, 1992. However, for 3 of the 23 facilities, DOE provided data on the status of corrective actions as of April 30, 1992, instead.

information on the status of ES&H compliance at each facility, the root causes for noncompliance, the adequacy of DOE's and site contractors' ES&H management and self-assessment programs,² and DOE-wide ES&H compliance trends and analyses of root causes. The Office of Special Projects, within the Office of the Assistant Secretary of ES&H, was assigned responsibility for managing this program.

Tiger Teams normally spent 4-6 weeks at facilities before completing draft assessment reports. The drafts were then given to the cognizant DOE program offices; field, area, and site offices that oversee DOE's contractors; and facility contractors so that work could begin on developing corrective action plans to address the findings. While the draft corrective action plans were being prepared, the cognizant DOE program offices and the Office of Special Projects reviewed and finalized the Tiger Team's assessment reports. Once the Secretary of Energy approved the Tiger Team's report on facilities, the facilities were to complete their corrective action plans and obtain the Secretary's approval.

Corrective action plans include step-by-step descriptions of how and when each problem the Tiger Teams identified will be corrected and the estimated cost of the corrective action. The time allowed for taking corrective actions depends on the resources available and the specific nature of the problem; some problems may need immediate correction and some corrections may take up to 7 years.

Six program offices (Conservation and Renewable Energy, Defense Programs, Environmental Restoration and Waste Management, Energy Research, Fossil Energy, and Nuclear Energy) have line management responsibility for the facilities assessed by the Tiger Teams. These program offices are required to develop guidance for their respective facilities, including guidance on developing and implementing action plans to correct deficiencies identified by the Tiger Teams.

As the Tiger Team assessments were being completed, DOE recognized the need for follow-up activities to ensure that efforts promoting full ES&H compliance would continue. Therefore, in July 1991 the Secretary of Energy approved a new, independent follow-up program—the ES&H Progress Assessment Program—to be managed by the Office of Special

²The major objective of a self-assessment program is to establish accountability and excellence at the "grassroots" level, involving people who are the most familiar with the processes and their management. The ultimate objectives, however, are not only the achievement of compliance with applicable laws and regulations but also continual performance improvement.

Projects. The purpose of these assessments, which began in October 1991, is to provide information on the

- status and effectiveness of ES&H corrective actions resulting from the Tiger Team assessments,
- effectiveness of DOE's and site contractors' ES&H self-assessment programs and efforts to institutionalize structures needed to manage such programs, and
- effectiveness of DOE's and site contractors' management structures, systems, and practices in addressing ES&H concerns and in fostering an ongoing culture of ES&H awareness and accountability.

Progress assessment teams, like Tiger Teams, are led by senior DOE managers but the teams are much smaller. The Office of Special Projects plans to schedule approximately 12 ES&H progress assessments each year. The specific facilities to be assessed are determined by, among other things, special requests by the Secretary, the significance of issues identified in the Tiger Team assessment of a facility, and the amount of time that has passed since the Tiger Team assessment and the approval of the facility's corrective action plan.

ES&H Progress Assessments Follow Up Tiger Teams

From June 1989 through July 1992, DOE's Tiger Teams assessed all 35 major DOE nuclear and nonnuclear facilities nationwide, and corrective action plans have been or are being developed to address Tiger Team findings. From October 1991 through December 1992, the ES&H Progress Assessment Program completed six on-site assessments.

Tiger Team Assessments Are Complete and Most Corrective Action Plans Are Approved

In July 1992, the Tiger Teams completed the last on-site review of the 35 facilities assessed under the Tiger Team program. As of October 1992, the Secretary of Energy or his designee had approved all 35 final assessment reports. In addition, as of January 1993, the Secretary had approved corrective action plans for 30 of the facilities. (See app. I for the status at each facility.)

The 35 Tiger Team assessments reported a total of 8,715 findings. These findings ranged from specific noncompliance deficiencies, such as storage of hazardous waste in rusted and dented drums, to generic management deficiencies, such as lack of formal training, outdated or incomplete procedures, and inadequate planning and priority setting. According to the assessment reports, however, many of these findings were known to DOE

and the contractors before the Tiger Team assessments began. For some findings, corrective actions had already been planned or were under way.

ES&H Progress Assessment Teams Have Reviewed Six Facilities

As of December 1992, DOE had completed six on-site ES&H progress assessments: at the Fernald Environmental Management Project in Ohio (Oct. 1991), the Oak Ridge Y-12 Plant in Tennessee (Feb. 1992), the Hanford Site in Washington (May 1992), the Nevada Test Site (Aug. 1992), the Mound Plant in Ohio (Sept. 1992), and the Lawrence Livermore National Laboratory in California (Dec. 1992 draft). According to the team leaders for the first three ES&H progress assessments, improvements had been made since the Tiger Team assessments, but more remained to be done to institutionalize the management and organizational structures needed to effectively manage ES&H programs. The Secretary, summarizing the results of the first five ES&H progress assessments in a November 6, 1992, memorandum, agreed with the conclusions reached by the team leaders. According to the Secretary, deficiencies have not been corrected in significant areas, including the corrective action process, self-assessment programs, DOE's internal oversight, and the implementation of formal policies, plans, and procedures.

Tiger Team Findings Are Being Addressed but Not as Rapidly as Planned

From July 24, 1990, through March 31, 1992, 23 corrective action plans, covering a total of 5,088 Tiger Team findings, were approved by the Secretary. As of March 31, 1992, the latest date for which comparable data are available, planned corrective actions had been completed on 40 percent (2,048) of the findings. (See app. II for details on the status of corrective actions.) However, DOE and the facility contractors have had difficulty meeting the milestones established in the corrective action plans. As of March 31, 1992, the 23 facilities had not completed 1,326 (44 percent) of the 3,017 findings originally scheduled for completion by that date.

According to DOE and contractor officials, inadequate resources to carry out the corrective actions, unrealistic or overly optimistic milestones, and underestimation of the scope of work needed to correct the problems were the principal reasons for not meeting the milestones specified in the corrective action plans. For example, according to Argonne National Laboratory officials, the Laboratory unrealistically planned to complete most of the corrective actions in response to 298 Tiger Team findings in 1 year (Jan. 1991-Jan. 1992) rather than over a more typical period for taking corrective actions, which can extend up to 7 years. As a result, as of

March 31, 1992, about 49 percent of the facility's corrective actions had not been completed by the planned dates.

DOE and contractor officials also said that because of new requirements and other changes, the planned scope of work had to be revised. For example, DOE Order 5500.3A, covering planning and preparedness for operational emergencies at DOE facilities, was released after some corrective action plans had been approved; the order required more training than originally planned. According to corrective action status reports, other modifications to the planned scope of work resulted from federal and state environmental protection decisions and requirements, such as those imposed by passage of the Clean Air Act Amendments of 1990. The need to do additional studies before taking action also resulted in changes to the planned scope of work.

Officials in DOE's Office of Special Projects said that the corrective action plans are considered "living" documents and therefore it is reasonable to expect modifications or revisions as conditions change. However, any changes to the approved plan, including milestone changes, must be justified by the contractor and approved by the program offices within DOE.

Not All Facilities Are Verifying the Adequacy of Corrective Actions

The senior official in a facility's cognizant program office is responsible for ensuring that the corrective action plan is implemented. Each of the four DOE facilities we visited had implemented procedures for verifying the adequacy of the corrective actions taken by the facility's contractor to address Tiger Team findings. However, DOE's ES&H progress assessment reports indicate that this is not true at all facilities. In addition, our review and the results of DOE's progress assessments show that at some facilities DOE lacks procedures for verifying its own corrective actions.

According to DOE program office officials, no DOE-wide guidance was issued to help ensure that corrective action plans were consistently implemented and that progress was tracked by the six program offices. Not until August 1992 did all program offices develop procedures identifying, among other things, the (1) official who must review the corrective actions taken, (2) evidence required to support a judgment that the finding is "closed" (that is, properly addressed), and (3) official responsible for independently verifying the action taken and certifying formal closure of the finding. Before August 1992, DOE's area and field offices and facility contractors had corrected and closed deficiencies

identified by Tiger Teams with or without the benefit of formal guidelines or procedures. As of March 31, 1992, 1,314 of the 2,048 corrective actions (about 64 percent) considered completed by the 23 facilities with approved corrective action plans had been verified by the appropriate DOE official, and the findings had been closed.

The Facilities We Visited Are Verifying Corrective Actions

In visits to the Kansas City (Missouri) and Mound Plants, the Paducah Gaseous Diffusion Plant in Kentucky, and the Argonne National Laboratory in Illinois, we found that the cognizant DOE offices in the field and the facilities' contractors had developed procedures for tracking the status of Tiger Team findings for which the contractor had lead responsibility and for verifying that the action taken corrected the problem. Although the person who performed the verification and the forms used to track and document progress differed at each facility, all the procedures provided for independent DOE verification of the contractor's actions to correct problems the Tiger Teams had identified.

While we did not assess the technical adequacy of the actions taken to address Tiger Team findings at the four facilities, our review indicated that officials were following the procedures for verifying that corrective actions were being taken. In each of the cases we reviewed, the corrective action taken was documented in the contractor's files and the files documented that the actions taken had been verified by an independent DOE official. Although the verifying official more often than not agreed that the action taken was adequate and that it fully addressed the root cause of the problem, some cases were returned to the contractor for additional work. The reasons most often cited for returns were that the contractor failed to address the root cause or that the actions taken were insufficient to support a formal closing of the finding.

According to information we obtained from the 23 facilities with approved corrective action plans, 126 cases had been returned to the contractors for further action as of March 31, 1992. In contrast, 1,314 findings had been closed.

As part of its ES&H Progress Assessment Program, DOE also reviewed the verification of actions taken on Tiger Team findings. For the Mound Plant, the assessment team reported in October 1992 that DOE's Albuquerque Field Office and the facility's contractor (EG&G) had made significant progress in developing rigorous and thorough procedures for tracking corrective actions on Tiger Team findings to closure. The team found,

however, that performance was mixed on an array of other corrective actions resulting from internal and external audits and reviews other than the Tiger Team assessment.³ For the Y-12 Plant, the assessment team reported that progress had been made in correcting problems and closing findings. Concerns raised by the assessment teams generally involved inconsistent validation and certification of corrective actions (Y-12 Plant and Hanford) or failure to fully implement the guidance developed by the program office (Fernald). In addition, the guidance that has been developed at Fernald and at the Nevada Test Site does not indicate what constitutes acceptable documentation for closure of a finding.

DOE's Corrective Actions Are Not Always Independently Verified

For corrective actions for which DOE offices—rather than the contractors—had lead responsibility, we found that an independent verification of the corrective action was not always made. For example, at the time of our visit we found that the Argonne Area Office did not have a written procedure for verifying the closure of Tiger Team findings for which DOE had lead responsibility. Subsequent to our visit, the Argonne Area Office revised its procedures to include such verification. At DOE's Paducah Site Office, the site manager, rather than DOE's Oak Ridge Field Office, verified the closure of corrective actions the site office had taken. The ES&H progress assessment teams expressed concern that such situations at three DOE locations they assessed either created an appearance of a conflict of interest or failed to ensure adequate verification. For example, the Hanford assessment team found that DOE's Richland Field Office had judged as closed corrective actions that it was responsible for completing. No independent verification was made of the actions taken, according to the team.

Some DOE headquarters program offices, as part of their line management responsibility, have established procedures to make sure that the field offices are properly evaluating and closing Tiger Team findings. The Nuclear Energy Program Office sends a "verification team" to inspect and verify the adequacy of corrective actions taken at its facilities. In the Defense Programs Office, a site representative from the field office periodically visits a facility to sample and check the adequacy of corrective actions taken in response to Tiger Team findings. Joint reviews of facilities by the Energy Research Program Office and field office staffs include a review of progress being made to implement the corrective

³For example, the Mound Plant was rigorously tracking performance audits developed by the contractor and by DOE Quality Assurance Surveys, but had not made similar progress for other corrective actions tracked by the Defense Programs Office, by the Dayton Area Office, and through the contractor's own independent safety reviews.

action plans. Within the Environmental Restoration and Waste Management Program Office, the Office of Waste Management has not conducted any routine or formal on-site verifications of corrective actions and the Office of Environmental Restoration has only recently conducted such on-site reviews, according to DOE program office officials.

Award Fee Determination Considers Responsiveness to Tiger Team Findings

DOE headquarters and field office personnel are expected to consider contractors' responsiveness to Tiger Team findings in determining the performance fee awarded under cost-plus-award-fee contracts. However, this factor is only one of many that DOE considers, and the criteria for assessing performance are highly subjective. Therefore, although we found that the DOE award fee evaluations identified some deficiencies and many accomplishments associated with contractors' responsiveness to Tiger Team findings, we could not determine the effect the responsiveness had on the fee awarded.

Performance fees are awarded to contractors on the basis of a semiannual performance evaluation. Before the evaluation period, DOE prepares a performance evaluation plan outlining the specific issues to be evaluated, the relative importance or weight assigned to the area, and the criteria on which the performance evaluation will be based. A July 2, 1990, DOE notice issued by the Office of Procurement and Assistance Management stated that all performance evaluation plans should include the goals and objectives listed in the corrective action plans. In addition, the notice stated that all award fee evaluations should include the contractor's performance and responsiveness to appraisals, reports, and other assessments, including the Tiger Teams' reports. In a July 19, 1991, memorandum, DOE's Assistant Secretary for Environment, Safety and Health reemphasized this requirement. He stated that, for example, "the evaluation standards and/or criteria should address implementation and tracking of milestones in the Tiger Team action plans that are relevant to the Award Fee period."

DOE assigns a numerical score (1 to 100) and a corresponding adjectival grade ranging from "unsatisfactory" to "outstanding" for the contractors' performance in each major functional area evaluated. Major functional areas include overall management of ES&H; waste management, operational surety, and environmental restoration; and safeguards and security, among others. The specific functional areas evaluated and the weight given to each area in determining the amount of the fee vary from facility to facility and from one rating period to another. In addition, the major functional

areas include a number of subfunctional areas, such as responsiveness to Tiger Team findings, that are generally not individually weighted.

We reviewed the performance evaluation plans for 12 management and operating (M&O) contractors at facilities with approved corrective action plans. Our review indicated that DOE's field offices are not uniformly implementing DOE's guidance. For example, the performance evaluation plans for the M&O contractors at the Mound, Kansas City, Pinellas, and Pantex (Texas) plants contained specific performance objectives related to meeting the milestones established in their corrective action plans. In contrast, some performance evaluation plans for the Fernald, Y-12, Rocky Flats, and Portsmouth (Ohio) M&O contractors contained only generic performance objectives related to closing all internal and external review findings and did not address the issue of Tiger Team findings directly.

The Associate Director of DOE's Office of Procurement, Assistance, and Property agreed that not all field offices are following DOE's guidance on developing performance evaluation plans for their contractors. However, he said that his office is working with DOE's program offices to make improvements and ensure that specific performance objectives are included in all performance evaluation plans.

We also reviewed DOE's award fee evaluation reports for 12 M&O contractors for all evaluation periods after their corrective action plans were approved—a total of 33 evaluation reports. We found that the evaluations, except three evaluation reports on the Rocky Flats M&O contractor, considered the contractors' performance in correcting deficiencies identified by the Tiger Teams, citing specific performance deficiencies and/or achievements related to Tiger Team findings.

Although most of the evaluation reports noted that progress was being made in tracking and correcting problems reported by the Tiger Teams, in 10 reports DOE identified deficiencies related to corrective actions. DOE cited at least one deficiency for the following M&O contractors: EG&G (Mound Plant), Martin Marietta Energy Systems, Inc. (Y-12, Portsmouth, and Paducah plants), Allied-Signal, Inc. (Kansas City Plant), and Reynolds Electric & Engineering Company, Inc. (Nevada Test Site). Deficiencies included missed milestones, corrective actions that were not responsive to findings, failure to submit findings to the responsible office for closure, and lack of objective evidence to support the closure of the finding, requiring some cases to be reopened.

We were unable to determine the specific effect (either positive or negative) a contractor's performance had on the rating assigned for a functional area and, in turn, on the amount of the fee awarded. DOE officials told us that because responsiveness to Tiger Team findings is only one of several performance issues within the functional area, and no weight is usually assigned to these individual issues, it is impossible to determine how performance in this area affects the overall rating for that functional area. Furthermore, these officials said that the evaluation process is generally subjective. The evaluation team and the officials who determine the award fee consider all of the deficiencies within a functional area and reach a consensus on the final percentage rating for that functional area.⁴

DOE Makes Efforts to Disseminate Information on Lessons Learned

Because the Tiger Teams assessed similar issues at each facility and the findings may require similar corrective actions, DOE's Office of Special Projects has used several methods for sharing the lessons learned DOE-wide. The office has distributed special analyses of the Tiger Team assessments, entered Tiger Team assessment reports and the facilities' corrective action plans into DOE's SPMS data base, developed a user-friendly data base for retrieving information, and held workshops to help facilities develop corrective action plans.

To provide information on the trends and types of deficiencies identified by the Tiger Teams, the Office of Special Projects twice analyzed the findings of the Tiger Team assessments. These analyses, which were distributed to all DOE facilities, identified problems and deficiencies common to all facilities assessed. Each included a synopsis of the findings and a statistical summary of how frequently they occurred. As of January 1993, the office's third analysis of the last 19 Tiger Team assessments was being printed.

The office also installed a Tiger Team module in the DOE-wide SPMS data base. As of October 1992, this module, which all DOE and contractor organizations have access to, contained the full texts of 23 Tiger Team reports and corrective action plans for 12 facilities. DOE plans to add the remaining reports and corrective action plans in the future. However, DOE

⁴We have issued the following reports pointing out the need for improvement in DOE's award fee process: Nuclear Health and Safety: Increased Rating Results in Award Fee to Rocky Flats Contractor (GAO/RCED-92-162, Mar. 24, 1992), Energy Management: Tightening Fee Process and Contractor Accountability Will Challenge DOE (GAO/RCED-92-9, Oct. 30, 1991), Nuclear Health and Safety: DOE's Award Fees at Rocky Flats Do Not Adequately Reflect ES&H Problems (GAO/RCED-90-47, Oct. 23, 1989), and Nuclear Health and Safety: Information on Award Fees Paid at Selected DOE Facilities (GAO/RCED-90-60FS, Oct. 23, 1989).

officials said that, from their observations, very few DOE and contractor personnel understand SPMS or use it to obtain information on what other facilities have done to respond to similar Tiger Team findings.

To address the lack of understanding and use of the SPMS, in July 1992 the Office of Special Projects developed its own data base system to help the facilities more easily retrieve information from the SPMS on Tiger Team assessments and associated corrective action plans. According to Office of Special Projects officials, the data base system is easy to use and designed to help users find information in large documents or collections of documents. Although the system is currently available only within the Office of Special Projects, the office will do special searches at the request of other program offices, according to these officials.

Finally, DOE conducted workshops to assist facilities in developing and standardizing the format of corrective action plans. DOE officials said that the workshops stressed developing specific milestones or tasks and addressing root causes in order to correct ES&H deficiencies. The workshops also emphasized using the trend analyses on Tiger Team findings and the SPMS data base to obtain information on what other facilities have done to respond to similar Tiger Team findings.

In its efforts to enhance the sharing of lessons learned, the Office of Special Projects also developed a "noteworthy practices package" that was distributed DOE-wide in May 1992. This package provides information on practices the Tiger Teams identified for addressing ES&H problems. The office believes that other DOE facilities could learn from these examples.

Contractor and DOE officials at the four DOE facilities we visited said that they obtained information on what others had done to address Tiger Team findings primarily from discussions with DOE headquarters and field office officials and other contractors' staffs during the development and review of their own facility's corrective action plan. Some of these officials also said that they obtained completed corrective action plans from other sites to learn what they had done. DOE program office officials also said that they conveyed the lessons learned on many issues to the facilities during their day-to-day contacts with the contractors and periodic visits to the facilities.

According to the results of the first five final ES&H progress assessment reports, DOE needs to do more to ensure that facilities share lessons learned internally at each site. The progress assessment teams have found

that facilities are not appropriately sharing lessons learned from the implementation of corrective actions in response to Tiger Team findings, the required self-assessments, and other audits. Furthermore, the teams found a lack of emphasis on identification and communication of root causes, trends, and lessons learned at the facilities reviewed.

Conclusions

DOE's Tiger Teams have contributed to establishing a baseline of ES&H compliance at the Department's major facilities and to raising awareness throughout DOE of the need to improve performance in this vital area. However, our review and DOE's recent progress assessments indicate that considerable action will be required to achieve full compliance with ES&H requirements and to establish vigorous and formal ES&H programs throughout the agency. Given the current and anticipated resources available to DOE, it is expected to take as long as 7 years to complete all corrective actions on Tiger Team findings. Therefore, DOE's program offices must continue to work with the DOE field offices to implement procedures for verifying the adequacy of corrective actions, particularly those DOE itself is responsible for taking.

Although not all performance evaluation plans for award fee contracts contain specific performance objectives for contractors' progress in addressing Tiger Team findings, for the most part DOE is evaluating contractors' performance in this area. It is important that DOE continue its efforts to ensure that specific performance objectives on responsiveness are included in all performance evaluation plans.

Agency Comments

We discussed the facts in this report with DOE's Acting Assistant Secretary for Environment, Safety, and Health and the Acting Director, Office of Special Projects. These officials generally agreed that the report was factual, balanced, and accurate. As you requested, we did not obtain written agency comments on this report.

We performed our work between May 1991 and January 1993 in accordance with generally accepted government auditing standards. We interviewed DOE headquarters and field office officials and visited four locations managed by contractors. We also reviewed the contractors' and DOE's policies and procedures for implementing corrective actions for deficiencies identified by the Tiger Teams, assessing the contractors'

performance, and sharing information on lessons learned. (See app. III for details on our objectives, scope, and methodology.)

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will provide copies to DOE and other interested parties upon request.

If you have any additional questions or if we can be of further assistance, please contact me at (202) 512-3841. Major contributors to this report are listed in appendix IV.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Victor S. Rezendes". The signature is fluid and cursive, with the first name being the most prominent.

Victor S. Rezendes
Director, Energy and Science Issues

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Abbreviations

ES&H	environment, safety and health
DOE	Department of Energy
GAO	General Accounting Office
M&O	management and operating
SPMS	Safety Performance Measurement System

Status of Tiger Teams' Assessment Reports and Corrective Action Plans

Site	Date of assessment		Date assessment report approved	Date corrective action plan approved	
	Started	Completed	Final	Draft	Final
Rocky Flats, Colo.	06/06/89	07/28/89	09/05/89		07/24/9
West Valley Demonstration Project, N.Y.	07/07/89	07/28/89	10/17/89		12/21/8
Fernald, Ohio	07/17/89	08/25/89	09/26/89		06/11/9
Y-12, Tenn.	09/25/89	10/20/89	04/20/90		08/31/9
Pantex, Tex.	10/02/89	10/31/89	04/04/90		08/14/9
Mound, Ohio	10/10/89	11/02/89	01/22/90		09/11/9
Portsmouth, Ohio	10/23/89	11/17/89	04/25/90		06/06/9
Nevada Test Site	10/30/89	12/01/89	02/02/90		07/23/9
Kansas City, Mo.	11/06/89	12/08/89	05/18/90		11/09/9
Pinellas, Fla.	01/15/90	02/02/90	05/18/90		12/16/9
Savannah River, S.C.	01/29/90	03/23/90	06/26/90		08/02/9
Lawrence Livermore, Calif.	02/26/90	04/05/90	06/27/90		10/12/9
Brookhaven, N.Y.	03/26/90	04/27/90	07/16/90		12/10/9
Sandia, Calif.	04/30/90	05/18/90	10/24/90		02/18/9
Hanford, Wash.	05/21/90	07/18/90	11/20/90		11/27/9
Paducah, Ky.	06/18/90	07/20/90	10/24/90		01/07/9
Argonne, Ill.	09/17/90	10/19/90	02/28/91		04/24/9
Oak Ridge, Tenn.	10/22/90	11/30/90	04/02/91		10/10/9
Lawrence Berkeley, Calif.	01/14/91	02/15/91	07/26/91		03/06/9
Princeton, N.J.	02/11/91	03/12/91	07/26/91		10/03/9
Energy Technology Engineering Center, Calif.	03/18/91	04/12/91	07/31/91		11/20/9
Sandia, N. Mex.	04/15/91	05/24/91	10/04/91		03/27/9
Morgantown, W. Va.	05/13/91	06/07/91	10/04/91		03/23/9
Idaho Laboratory	06/17/91	08/02/91	04/20/92		06/22/9
National Renewable Energy Laboratory, Colo.	07/15/91	08/13/91	01/06/92		05/20/9
Pittsburgh, Pa.	08/19/91	09/13/91	05/20/92		09/06/9
Los Alamos, N. Mex.	09/23/91	11/08/91	06/19/92		10/28/9
Stanford, Calif.	10/07/91	11/05/91	05/20/92		11/09/9
K-25, Tenn.	11/12/91	12/18/91	07/20/92	04/17/92	
Naval Petroleum Reserve, Calif.	11/12/91	12/13/91	09/09/92		04/14/9
Ames, Iowa	02/10/92	03/05/92	08/12/92	05/29/92	
Strategic Petroleum Reserve, La.	03/09/92	04/10/92	09/09/92		01/14/9
National Institute of Petroleum Energy Research, Okla.	04/06/92	05/01/92	09/10/92	08/12/92	
Fermi, Ill.	05/11/92	06/08/92	09/09/92	09/22/92	
Naval Petroleum and Oil Shale Reserve, Colo., Utah, and Wyo.	06/22/92	07/20/92	09/09/92	11/18/92	

Status of Corrective Actions on Tiger Teams' Findings

Site	Total number of findings ^a	Findings completed/closed and verified	
		Completed	Closed and verified
Rocky Flats, Colo.	95	65	33
West Valley Demonstration Project, N.Y.	135	35	135
Fernald, Ohio	45	25	14
Y-12, Tenn.	91	48	30
Pantex, Tex.	110	90	75
Mound, Ohio	95	61	4
Portsmouth, Ohio	191	145	110
Nevada Test Site	149	76	76
Kansas City, Mo.	176	125	50
Pinellas, Fla.	177	101	11
Savannah River, S.C.	406	297	109
Lawrence Livermore, Calif.	243	102	96
Brookhaven, N.Y.	243	131	88
Sandia, Calif.	231	123	5
Hanford, Wash.	371	60	129
Paducah, Ky.	214	71	55
Argonne, Ill.	298	132	132
Oak Ridge, Tenn.	413	117	72
Lawrence Berkeley, Calif.	335	32	32
Princeton, N.J.	260	26	7
Energy Technology Engineering Center, Calif.	202	63	39
Sandia, N. Mex.	390	11	0
Morgantown, W. Va.	218	121	12
Total	5,088	2,048	1,314

Note: Data are given for the 23 facilities for which DOE had approved a corrective action plan as of March 31, 1992. Data for Y-12, Savannah River, and Sandia, N. Mex., are as of April 30, 1992; for all other facilities, data are as of March 31, 1992.

^aThe total number of findings exceeds the total for the Tiger Team assessments for West Valley, Pantex, Mound, Kansas City, Pinellas, Lawrence Livermore, Sandia-California, Argonne, Princeton, and Sandia-New Mexico because some of the findings are the shared responsibility of the contractor and DOE.

Objectives, Scope, and Methodology

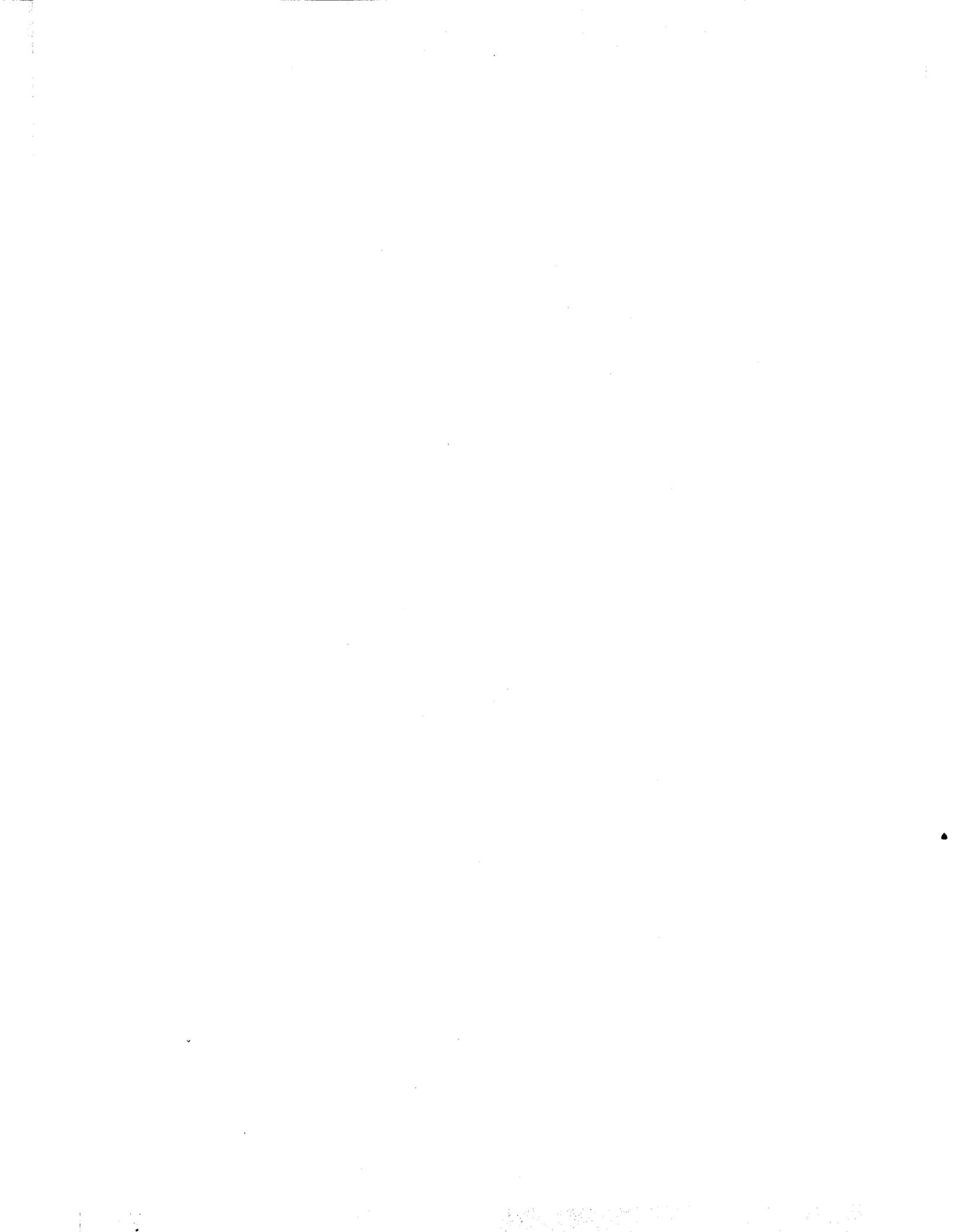
The Chairman, Environment, Energy, and Natural Resources Subcommittee, House Committee on Government Operations, requested that we determine (1) the current status of Tiger Team and follow-on progress assessments, (2) the responsiveness of DOE facilities in correcting the problems identified by the Tiger Teams, (3) DOE's methods for verifying that the corrective actions taken are adequate, (4) the effect contractors' responsiveness to Tiger Team findings has had on the award fees provided under cost-plus-award-fee contracts, and (5) DOE's methods for analyzing and sharing information on lessons learned from Tiger Team assessments.

To determine the status of the Tiger Team assessments and the corrective action plans, we interviewed officials from DOE's Office of Special Projects and obtained copies of completed Tiger Team reports and corrective action plans. To determine the facilities' progress in taking planned corrective actions, we requested each facility whose corrective action plan had been approved to tell us the status of these actions as of March 31, 1992. To determine contractors' responsiveness in correcting deficiencies through March 1992, we asked each facility to identify the number of findings that were not closed by the date scheduled in the facility's original corrective action plan. In addition, we visited four facilities that DOE program officials considered representative of their activities to determine whether these facilities had developed procedures for correcting and verifying closure of Tiger Team findings and whether these procedures were being followed. To ensure coverage of at least three different program office sites, we visited the Kansas City and Mound plants (Office of Defense Programs facilities), the Paducah Gaseous Diffusion Plant (Office of Nuclear Energy facility), and the Argonne National Laboratory (Office of Energy Research facility). To determine how DOE factors responsiveness to Tiger Team findings into the performance award fees given to contractors, we reviewed 33 performance evaluation reports prepared after contractors' corrective action plans had been approved and after DOE's performance evaluations. We also discussed with DOE headquarters and field office officials how they determined award fees and disseminated information on lessons learned.

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