

GAO

Report to the Chairman, Committee on
Commerce, House of Representatives

February 2000

NUCLEAR SECURITY

Improvements Needed in DOE's Safeguards and Security Oversight



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

Resources, Community, and
Economic Development Division

B-284303

February 24, 2000

The Honorable Thomas J. Bliley, Jr.
Chairman, Committee on Commerce
House of Representatives

Dear Mr. Chairman:

The Department of Energy (DOE) is responsible for the nation's nuclear weapons program and owns a number of facilities to carry out classified weapons-related activities. These facilities are operated for DOE by contractors who are responsible for protecting classified information, nuclear materials, nuclear weapons, and nuclear weapons components. DOE provides oversight over the contractor's safeguards and security program to ensure that protection is provided consistent with DOE's requirements and standards. Over the past few years, a number of reports and incidents have indicated that there are problems—including computer security and the control of foreign visitors—at DOE's facilities and laboratories. Over the years the laboratories have also been targets for espionage.

To ensure that problems are identified and promptly resolved, you requested that we evaluate DOE's activities for safeguards and security oversight at DOE's Los Alamos National Laboratory and Lawrence Livermore National Laboratory. DOE's Office of Independent Oversight and Performance Assurance and the Department's operations offices primarily conduct these activities. As agreed with your office, this report discusses (1) the monitoring and tracking of findings resulting from DOE's oversight activities; (2) the correction, validation, and closing of findings resulting from such activities; and (3) the consistency of various DOE assessments of the laboratories' safeguards and security programs.

Results in Brief

DOE's Office of Security and Emergency Operations—the safeguards and security policy organization within DOE's headquarters—maintains a centralized management information system to track and monitor safeguards and security findings and the related corrective actions. This system would be of more value if it contained information on all security findings. The findings developed from 1995 through 1998 by the independent oversight organization at DOE's headquarters—the Office of

Independent Oversight and Performance Assurance—are not included in the system nor are the findings and recommendations developed by GAO and other outside organizations, such as congressional committees and special review teams. In addition, the system is not directly accessible by safeguards and security staff at DOE's area offices and the laboratories. Each laboratory has developed its own information system, which contains data on all the findings that relate to it. As a result, information about problems at one location is not available to safeguards and security staff at other locations. Such information would help the staff avoid similar problems and improve their safeguards and security.

DOE requires that the laboratories conduct a risk assessment, a root cause analysis, and a cost-benefit analysis as part of their process to correct safeguards and security problems found by DOE's oversight activities. These analyses help to ensure that problems with safeguards and security are corrected in an economic and efficient manner. Despite their importance, these assessments and analyses have not always been conducted. While the Lawrence Livermore National Laboratory generally complied with DOE's requirements, the Los Alamos National Laboratory has historically not conducted risk assessments and cost-benefit analyses at all and has performed root cause analyses for only about two-thirds of the findings. In 1998, the Los Alamos National Laboratory began requiring formal, documented root cause analyses for all findings. In addition, the Independent Oversight Office is not required to and, in the past, has generally not worked with the laboratories to develop corrective action plans for its safeguards and security findings. Also, the Independent Oversight Office is not required to validate the corrective action, verify that the problem was corrected, and certify that its findings were closed and has not been formally involved in these activities. As a result, there was no assurance that the problem was understood, adequately corrected, and closed. During the past year, the Independent Oversight Office has worked with the laboratories to develop corrective action plans and has conducted follow-up reviews of its findings that are being corrected, validated, verified, or closed by the operations offices. However, the Independent Oversight Office still does not become involved in validating and verifying corrective actions and certifying that findings are closed.

From 1994 through 1999, the laboratories' safeguards and security performance has received many inconsistent ratings from oversight and other DOE organizations. During a given year, the Los Alamos National Laboratory received ratings ranging from marginal to excellent, depending on the DOE organization conducting the assessment. Likewise, the

Lawrence Livermore National Laboratory received ratings ranging from marginal to far exceeds expectations. This inconsistency can send a mixed and/or erroneous message to safeguards and security policy makers and managers. At least partially, this inconsistency results from various organizations' use of different criteria and the timing of the rating. DOE has changed the rating criteria for the safeguards and security contract performance rating for 2000. These changes could decrease rating inconsistency in future years.

We are making recommendations to improve the safeguards and securities activities at DOE's laboratories and to formalize oversight improvements that were made during 1999.

Background

DOE has numerous contractor-operated facilities and laboratories that carry out DOE's various programs and missions. The laboratories conduct some of the nation's most sensitive activities, including designing, producing, and maintaining the nation's nuclear weapons; conducting efforts for other military or national security applications; and performing research and development in advanced technologies for potential defense and commercial applications. Because of these sensitive activities, these facilities—especially the laboratories—are targets of foreign espionage efforts.

Security concerns and problems have existed at many of these facilities since they were created. Recent years have been no different. In 1997, DOE's Office of Security Affairs issued a report that rated safeguards and security at some facilities and laboratories as marginal and identified problem areas that included physical security and accountability for special nuclear material.^{1,2} In April 1999, all computer networks (except for those performing critical safety or security functions) at the laboratories were shut down because of concerns about inadequate security. During that same month, we testified on numerous long-standing safeguards and security problems, including ineffective controls over foreign visitors, weaknesses in efforts to control and protect classified and sensitive information, lax physical security controls, the ineffective management of personnel security clearance programs, and weaknesses in tracking and controlling nuclear materials.³ In December 1999, a scientist at the Los Alamos National Laboratory was indicted on 59 felony counts of mishandling classified information. The scientist was accused of transferring files from Los Alamos' secure computer system to computer tapes, most of which cannot be accounted for.

DOE is responsible for a security program that effectively protects against theft, sabotage, espionage, terrorism, and other risks to national security at its facilities. DOE has policies and procedures to protect its facilities, classified documents, data stored in computers, nuclear materials, nuclear weapons, and nuclear weapons components. The operating contractors at DOE's facilities are responsible for implementing these safeguards and security policies and procedures. To ensure that these policies and procedures are followed and implemented, DOE's Office of Independent Oversight and Performance Assurance (OA) provides independent oversight of the effectiveness of policy and its implementation. The field operations offices provide line management direction and assess compliance with DOE's policy. These offices play a critical role in the early detection of safeguards and security problems and can play a major role in the timely resolution of those problems.

¹See *Status of Safeguards and Security for 1996* (Jan. 27, 1997).

²The Office of Security Affairs is a DOE headquarters organization whose functions include establishing safeguards and security policies and providing advice and assistance concerning safeguards and security programs.

³See *Department of Energy: Key Factors Underlying Security Problems at DOE Facilities*, (GAO/T-RCED-99-159, Apr. 20, 1999).

DOE's operations offices are the line organizations accountable for evaluating the laboratories' safeguards and security activities. The reason for this is that the operations offices are responsible for managing the contracts for the operation of DOE's facilities and for ensuring that DOE's policies, procedures, and requirements are followed. The operations offices are required to conduct an annual survey of the adequacy of the operating contractors' safeguards and security programs. DOE's Albuquerque Operations Office is responsible for the Los Alamos National Laboratory and has safeguards and security staff at a Los Alamos Area Office to provide on-site management and oversight. DOE's Oakland Operations Office is responsible for the Lawrence Livermore National Laboratory and has safeguards and security staff located at the laboratory to provide a day-to-day presence.

OA provides oversight of laboratory safeguards and security activities from DOE's headquarters. OA is an "independent" oversight organization that is separate from the line management structure, conducts safeguards and security inspections of DOE's facilities, and issues reports.⁴ OA has existed in various forms since 1982. This Office was originally organized under DOE's Office of the Assistant Secretary for Defense Programs. In 1990, the Office of Security Evaluations was moved to DOE's Office of the Assistant Secretary for Environment, Safety, and Health. In 1999, the Office of Security Evaluations became OA, which reports directly to the Secretary of Energy.

⁴The findings in OA reports have been referred to as "issues" in some OA reports. In this report, we refer to all OA *findings* as "findings." OA has also used different terms for the reviews it conducts, including "inspections," "evaluations," and "site profiles." In this report we refer to all OA *reviews* as "inspections."

Additional organizations have provided safeguard and security oversight as the need has occurred. For example, DOE's Office of Counterintelligence evaluates counterintelligence activities at DOE's facilities, and DOE's operating contractors at the laboratories conduct annual self-assessments of the quality of their safeguards and security programs. In addition, the contractors also have internal audit organizations that review aspects of the safeguards and security programs. GAO and DOE's Office of Inspector General also evaluate selected safeguards and security activities. Finally, outside organizations have also reviewed the laboratories' safeguards and security activities.⁵ However, OA and the operations offices are the only DOE organizations responsible for continuing oversight of safeguards and security activities at the laboratories.

DOE Lacks a Comprehensive Tracking System for Safeguards and Security Findings

DOE and the contractors that operate the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory use a number of information systems to track safeguards and security findings that have been made by DOE's oversight organizations. DOE headquarters' Office of Security and Emergency Operations maintains the Safeguards and Security Information Management System, and the contractors that operate the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory maintain their own information systems. These systems, however, do not include information on all the safeguards and security findings, are not accessible by all necessary personnel, and/or are not capable of interfacing with each other.

No single information system maintained by DOE and the laboratories contains information on all the safeguards and security findings at the laboratories. DOE's Safeguards and Security Information Management System contained information on all OA and operations office survey safeguards and security findings and corrective action plans until 1995. Although a memo dated August 15, 1995, from the Director of the Office of Safeguards and Security required that OA's findings be entered in the system, from 1995 to 1998, information on OA's findings and related corrective action plans was not included in the system. Because OA did not highlight or number the findings in its reports, the staff responsible for

⁵In January 1999, a special security review team issued an *Internal Report to the Secretary, Special Security Review*. Also, in January 1999, a House of Representatives Select Committee issued a report that dealt with security at DOE's facilities entitled *U.S. National Security and Military/Commercial Concerns With the People's Republic of China*.

correcting safeguards and security problems could not easily identify the findings and enter them into the information systems. In 1999, OA changed its inspection report format to more clearly identify its findings, and OA's findings are now being included in the Safeguards and Security Information Management System. However, the Safeguards and Security Information Management System has never included information related to the findings made by organizations other than OA and the operations offices, such as GAO, DOE's Office of Inspector General, and DOE's Office of Counterintelligence.

At both the Los Alamos National Laboratory and Lawrence Livermore National Laboratory, the operating contractors maintain their own computerized information systems. These systems contain findings and corrective action information for OA's findings (from 1995 through 1998, OA's findings that the laboratories could identify were included in their systems), the operations offices' survey findings, the findings from self-assessments performed by the contractors or internal audits, and the findings from any other source that the contractor is aware of. For example, the Los Alamos National Laboratory's safeguards and security officials informed us that because DOE lacked a comprehensive information system, the laboratory developed its own information system. Los Alamos's system includes virtually every known security problem at the laboratory and provides a management tool to ensure that problems are addressed and tracked to closure. However, the laboratories' information systems include only those findings related to their laboratory and do not include findings for other DOE facilities. In addition, these systems are not compatible with the Safeguards and Security Information Management System, and information from one system cannot be compared or downloaded between systems.

In addition to not including all findings, the Safeguards and Security Information Management System is not readily available to all DOE and contractor personnel that have a legitimate need to access information on safeguards and security findings. The Safeguards and Security Information Management System is available to the safeguards and security staff at DOE's headquarters and to operations office personnel. DOE's area-office staff and personnel working for the laboratories' operating contractor who work on safeguards and security issues do not have direct access to the Safeguards and Security Information Management System and must request information through one of the organizations that does have direct access. Laboratory officials believe that access to a centralized, comprehensive system would facilitate tracking corrective actions and

would enable the laboratories to use information from other facilities to improve their safeguards and security programs. Information about problems at one facility and their resolution could allow managers at other facilities to avoid similar problems. In addition, such a system could aid in the identification of the most cost-effective actions to correct safeguards and security problems or could be the basis for trend analyses across laboratories.

DOE and laboratory officials told us that they see a need for an improved safeguards and security information system. OA officials informed us that they have begun a dialogue with DOE's Office of Security and Emergency Operations about the current capabilities and deficiencies of the system and the needs for information from the system.

Improvements Needed in Correcting and Closing Findings

DOE Order 470.1 requires that when a DOE operations office or OA reports a finding that raises a significant security vulnerability, immediate interim actions must be taken to temporarily mitigate identified risks. After such interim actions are taken, the laboratories analyze the finding and, within 15 days, develop a corrective action plan to permanently correct the findings. As part of the permanent corrective action plan's development, the laboratory must conduct a risk assessment, root cause analysis, and cost-benefit analysis. The operations office validates and verifies that the survey findings have been corrected and certifies closure of the finding. We found that the Lawrence Livermore National Laboratory was either conducting the required analyses or providing a justification of why the analyses were not conducted. The Los Alamos National Laboratory, on the other hand, was not conducting formal risk assessments or cost-benefit analyses at all and was conducting root cause analyses in only about two-thirds of the findings we reviewed. In addition, until recently, OA was not formally involved in the development of corrective action plans for OA's safeguard and security findings. While follow-up inspections are now being conducted, OA has not been involved in the validation, verification, and closure of those findings.

Formal Corrective Action Analyses Have Historically Not Been Performed

DOE Order 470.1 requires that corrective actions developed for operations offices' survey findings should be based on documented risk assessment, root cause analysis, and cost-benefit analysis. Risk assessment is essential to determine the risk associated with an identified deficiency in prioritizing its correction. Root cause analysis ensures a determination of the fundamental and contributing causes of a deficiency. Cost-benefit analysis

is important in determining whether correcting a security risk is worth the cost of corrective action. Risk assessments, cost-benefit analyses, and root cause analyses are not always warranted (as explained in this section). However, the corrective action plan process should include a formal determination of whether these analyses are warranted.

We reviewed 15 findings related to safeguards and security problems at the Los Alamos National Laboratory and 13 findings related to safeguards and security problems at the Lawrence Livermore National Laboratory. At the Lawrence Livermore National Laboratory, risk assessments, root cause analyses, and cost-benefit analyses had been performed as required.⁶ However, we found that at the Los Alamos National Laboratory, not all the required analyses have historically been performed during the corrective action process.

Of the 15 findings at the Los Alamos National Laboratory, 10 were from the Albuquerque Operations Office's surveys, and 5 were from OA's inspections. These findings were developed from 1994 through 1999. The Los Alamos National Laboratory's safeguards and security staff did not perform root cause analyses for 5 of the 15 findings. A root cause analysis was not conducted for one finding because the finding was closed while the Albuquerque Operation Office was conducting the survey. For the other four findings, laboratory safeguards and security officials said that root cause analyses were not conducted because the findings occurred before the laboratory required that root cause analysis be documented in 1998. Our review of the four findings indicated that none of those specific problems were identified as recurring problems in subsequent inspections and surveys. We also found that since the 1998 requirement, Los Alamos was documenting root cause analyses for all findings.

Formal risk assessments (or justifications for not doing formal risk assessments) were not completed for any of the 15 Los Alamos National

⁶Safeguards and security staff at the Lawrence Livermore National Laboratory did not perform risk assessment, root cause analyses, and cost-benefit analyses for three of the findings we reviewed because they were findings contained in OA's 1997 Site Profile, and laboratory staff believed that the issues raised were not formal findings and that corrective action plans were not required. In addition, a cost-benefit analysis was not performed for one Oakland survey finding that involved the use of a certain kind of lock on a room that contained classified printers. The laboratory's safeguards and security staff conducted a risk assessment and a root cause analysis for this finding but did not conduct a cost-benefit analysis because the printer room had been eliminated shortly after completion of the survey and the finding was no longer applicable.

Laboratory findings that we reviewed. The Los Alamos National Laboratory's safeguards and security officials told us that formal risk assessments are not conducted because the laboratory does not require them. They said that risk assessments have been conducted informally immediately upon learning that a safeguards and security problem has been discovered but that these assessments are not documented. If classified information or nuclear material is at risk, the official's first priority is to ensure that adequate compensatory measures are put into place. The laboratory's safeguards and security officials informed us that they rely heavily on risk determinations made by DOE's inspectors during the course of the audit. Since we completed our review, laboratory officials informed us that they have required that formal risk assessments be completed and documented for all findings.

Cost-benefit analyses were also not completed for any of the 15 Los Alamos National Laboratory's findings that we reviewed. The Los Alamos National Laboratory's safeguards and security officials told us that they did not perform any cost-benefit analyses for these findings because the majority of the findings involve compliance with DOE's regulations and must be corrected (e.g., marking of documents and submission of required paperwork). While formal cost-benefit analyses were not performed, the safeguards and security officials said that they informally consider the cost-benefit of a corrective action for all findings. Exemptions are often requested to eliminate the need for expensive corrective actions that do not significantly improve security.

An example of how these analyses can benefit the corrective action process involves a 1999 OA finding that appeared to require the replacement of doors to special nuclear material vaults at the Lawrence Livermore National Laboratory. DOE requires that the doors and walls to a vault containing special nuclear material provide the same protection from unauthorized entry. For this finding, Lawrence Livermore National Laboratory officials conducted root cause, cost-benefit, and risk analyses and determined that the new vault doors would cost about \$200,000 and that installing them would cost an additional \$1 million, without providing a significant increase in security. As a result, instead of proceeding with the upgrade to close the finding, in November 1999, Lawrence Livermore National Laboratory officials requested a variance from the DOE requirement.

OA Did Not Validate or Certify Closure of Its Findings

DOE's operations offices follow a process for closure of safeguard and security findings resulting from their annual surveys. The process involves the operations offices in the development, validation, and verification of the corrective action and the closure of the finding. OA is not required to follow and has not followed a similar process for safeguards and security findings resulting from its inspections. Until 1999, OA was not formally involved in the development, validation, and verification of the corrective actions resulting from its inspections and did not certify that the findings were closed. The operations offices performed these functions. OA officials told us that they believe the operations offices—as line managers—are the appropriate organizations for conducting these functions and that, in most cases, OA (1) was aware of the status of a finding, (2) was aware of whether or not a laboratory was formally addressing it, and (3) would evaluate the effectiveness of the corrective action during the next inspection of the facility. We believe that by not being formally involved in the corrective action process, OA was not able to ensure that the safeguards and security finding was understood, adequately corrected, and closed.

Because OA did not get involved in the correction of findings, the laboratories were not always aware of what findings existed. In addition, some findings were never corrected, and a laboratory corrected a "finding" that OA did not make. For example, in 1998, OA issued a report on its review of aspects of safeguards and security at the Lawrence Livermore National Laboratory that OA believed contained eight findings. However, these findings were not clearly identified. Of those eight findings, six were identified by the laboratory when it reviewed the report. The two findings identified by OA and not by the laboratory concerned protective force and personnel security issues. For these two findings, no corrective action plans were developed, and they were never closed. In addition, in the laboratory's review of OA's report, the laboratory identified what it thought was an OA finding concerning nuclear material inventories. However, this was not one of the eight findings that OA made. As a result, the Lawrence Livermore National Laboratory corrected and closed a finding that OA never made.

In its 1999 inspections at the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory, OA changed its processes. The inspection report clearly identified and numbered (for use in the Safeguards and Security Information Management System) the findings. In addition, OA worked with the laboratories in developing a corrective action plan to assure that the planned corrective action adequately addressed the

appropriate issues. However, OA does not plan to validate or verify the corrective action and certify closure of the findings because the cognizant secretarial offices and the operations offices will continue to perform these functions. OA conducted follow-up reviews to evaluate the adequacy of corrective actions and associated closure documentation. The changes in OA's involvement in the corrective action process were included in an August 31, 1999, protocol issued by the Deputy Secretary.

Safeguards and Security Ratings Are Inconsistent

During a single year, the Los Alamos National Laboratory and Lawrence Livermore National Laboratory receive ratings on their safeguards and security performance from several sources that can range from "unsatisfactory" to "far exceeds expectations." Safeguards and security ratings have the potential to provide managers and policymakers with a "report card" on the effectiveness of safeguards and security at a given facility and throughout the complex. In recent years, however, ratings have provided conflicting information on the effectiveness of safeguards and security or, in cases where the ratings were not reported, provided no information on the effectiveness of safeguards and security.

Over the past 6 years, the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory each received 15 safeguards and security ratings in OA reports, operations office survey reports, DOE contract performance ratings, and reports to the President. The ratings contained in OA and operations office reports are based on the inspections and surveys of safeguards and security programs at the facilities. Contract performance ratings are based on annual assessments conducted by the contractor and the operations office of how well a contractor met the safeguards and security criteria contained in the contract. The rating contained in the annual report to the President is a composite rating derived from reviews of information contained in OA inspections, operations office surveys, contractor self-assessments, and other sources. Tables 1 and 2 show these ratings for the Los Alamos and the Lawrence Livermore national laboratories.

Table 1: Safeguards and Security Ratings for Los Alamos National Laboratory From 1994 Through 1999

Year	OA	Albuquerque Operations Office	Safeguards and security contract performance	Annual report to the President
1994	No overall site rating given ^a	Marginal	Exceeds expectations	Marginal
1995	Inspection not conducted	Satisfactory	Far exceeds expectations	Satisfactory
1996	Inspection not conducted	Survey not conducted	Far exceeds expectations	Satisfactory
1997	No rating given	Marginal	Meets expectations	Report not issued ^b
1998	No overall site rating given ^c	Marginal	Excellent	Marginal ^b
1999	Satisfactory	Marginal	To be determined	To be determined

^aOA did not give the site an overall rating but did provide eight ratings of specific safeguards and security areas. Three were rated satisfactory, four were marginal, and one was unsatisfactory.

^bReports for 1997 and 1998 were combined.

^cOA did not give the site an overall rating but did provide a "marginal" rating for each of the main elements of the laboratory's safeguards and security program.

Table 2: Safeguards and Security Ratings for Lawrence Livermore National Laboratory From 1994 Through 1999

Year	OA	Oakland Operations Office	Safeguards and security contract performance	Annual report to the President
1994	Inspection not conducted	Survey not conducted	Excellent	Satisfactory
1995	Inspection not conducted	Satisfactory	Far exceeds expectations	Satisfactory
1996	Inspection not conducted	Satisfactory	Far exceeds expectations	Marginal
1997	No rating given	Satisfactory	Far exceeds expectations	Report not issued ^a
1998	No rating given	Marginal	Good	Marginal ^a
1999	Marginal	Marginal	To be determined	To be determined

^aReports for 1997 and 1998 were combined.

As shown in these tables, the ratings assigned to safeguards and security can vary widely during a given year. For example, at Lawrence Livermore National Laboratory in 1996, the Oakland Operations Office's safeguards and security survey rated the laboratory as "satisfactory," the safeguards and security contract performance rating was "far exceeds expectations," and the annual report to the President assigned a "marginal" rating. A similar situation occurred at the Los Alamos National Laboratory in 1998.

In that year, both the Albuquerque Operations Office's safeguards and security survey and the annual report to the President rated the laboratory as "marginal," while the safeguards and security contract performance rating was "excellent."

This disparity occurs for several reasons. One reason is that the purpose and the criteria for the ratings are not the same. In their surveys, the operations offices use DOE's policies, procedures, requirements, and orders designed to protect classified information and material to measure the laboratories' safeguards and security performance. The ratings assigned for contract performance are based on a different set of criteria, which are negotiated between DOE and the contractors operating the laboratories. In the past, the contract performance criteria have often been oriented toward quantifiable tasks that may not have a significant impact on the effectiveness of the safeguards and security program. For example, performance criteria for 1998 in the Los Alamos National Laboratory's contract included the percentage of corrective action plans completed on time, the number of self-assessments completed, and the percentage of time that nuclear material is properly labeled and stored. The contract performance criteria do not include safeguards and security ratings from OA and the Albuquerque Operations Office. In contrast, OA's and the operations offices' inspections and surveys are based on criteria designed to determine the laboratory's effectiveness in protecting classified information and nuclear material.

To some extent, another reason for the disparity in the ratings can be the timing of the inspection or survey. For example, the Albuquerque Operations Office conducted its annual survey of the Los Alamos National Laboratory in May 1999. This survey rated safeguards and security at the laboratory as "marginal." OA conducted its 1999 inspection of safeguards and security at the Los Alamos National Laboratory in August 1999 and rated Los Alamos' safeguards and security as "satisfactory," noting improvements in the program since OA's 1998 inspection and the operations office's 1999 survey. A third explanation for the disparate safeguards and security ratings can be the scope of the reviews conducted. For example, in 1996, the report to the President rated the Lawrence Livermore National Laboratory "marginal," while the Oakland Operations Office rated the laboratory "satisfactory." However, the scope of the report to the President included only the performance of the special response team, while the Oakland Operations Office survey included all five major safeguards and security topical areas.

While several factors may explain the disparate ratings, the wide variance in the ratings in a single year raises questions about the credibility of the rating process. The ratings could also provide government managers and policymakers with distorted views of the effectiveness of safeguards and security at the laboratories and could allow developing problems to be overlooked. A logical assumption for a manager or policymaker would be that if an operating contractor is receiving ratings of "far exceeds expectations" and near maximum contract performance awards for safeguards and security, then the safeguards and security program must be doing a good job of meeting the requirements to protect classified information and material. However, an OA inspection or operations office survey for the same laboratory, for the same year, could reveal a marginal rating with numerous findings of noncompliance with safeguards and security policies and requirements.

DOE is working to correct this situation, and the ratings given for contract performance and inspections and surveys may not be as disparate in future years. Seventy-five percent of the contract performance ratings for safeguards and security for the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory for 2000 will be based on OA's inspection and operations offices' survey ratings. The remaining 25 percent of the contract performance rating will be based on the laboratories' ability to produce corrective action plans within the designated time frames.

The criteria included in the 2000 contract for the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory are unique to these laboratories and can be different from the criteria used at other DOE facilities. For example, the 2000 contract for DOE's Sandia National Laboratory allows for the consideration of OA's ratings in the performance rating but does not specify that they have to be considered. In addition, the contract performance criteria for the Sandia National Laboratory contain process-oriented criteria such as the completion of corrective action plan milestones and the percentage of security guards that can pass firearms proficiency tests.

Operations office surveys are required to be performed annually unless an exemption is granted, and the report to the President is to be an annual summary of the status of safeguards and security. There is no requirement for OA to perform annual inspections at the laboratories; however, periodic reviews of safeguards are essential to ensure that safeguards and security programs are effective. As shown in tables 1 and 2, only the contract performance ratings were completed in each of the past 6 years for the Los

Alamos National Laboratory and the Lawrence Livermore National Laboratory. OA did not conduct inspections at the Los Alamos National Laboratory in 1995 and 1996 and at the Lawrence Livermore National Laboratory in 1994, 1995, and 1996. OA did not assign overall ratings in the site profiles issued in 1997 and 1998. The Albuquerque Operations Office did not assign a rating for safeguards and security for the Los Alamos National Laboratory in 1996, and the Oakland Operations Office did not assign a safeguards and security rating for the Lawrence Livermore National Laboratory in 1994. Finally, the report to the President was not issued in 1997 but, instead, was issued as a combined 1997/1998 report.

Conclusions

The capability to obtain complete, accurate information on safeguards and security findings is critical to ensure that DOE's findings are corrected and do not occur at other DOE facilities. DOE's information system, however, is incomplete, not accessible by all security staff, and not compatible with contractor information systems. Several safeguards and security organizations are beginning to individually look at the needs and capabilities of the safeguards and security information system. However, in our view, real progress on this issue will depend on a more systematic and structured look at the information needs of all users to maximize the efficiency and effectiveness of such a system.

Using tools like risk assessment, root cause analysis, and cost-benefit analysis can aid in identifying why a problem has occurred, identifying the best method of correcting the problem, and ensuring that the problem does not reoccur. The Los Alamos National Laboratory has recently begun to conduct formal risk assessments and root cause analyses for all findings but is not formally conducting and documenting cost-benefit analyses. In correcting the findings identified during the safeguards and security surveys conducted by DOE's operations offices, the laboratories and the operations offices coordinate and cooperate in developing, validating, and verifying corrective actions and certifying closure of the findings. Until 1999, the Independent Oversight Office was not formally involved in the corrective action process for the problems found during its inspections. In 1999, the Independent Oversight Office began to work with the laboratories during the development of corrective action plans and conducted follow-up reviews of the findings but still is not required to and does not formally validate and verify the corrective actions and certify closure of the findings.

Over the past 6 years, managers and policymakers could have been lead to believe that the adequacy of security programs at Los Alamos and

Lawrence Livermore national laboratories was anywhere from “marginal” to “far exceeds expectations,” depending on which report and rating was being relied on. Indications are that some of the conditions that led to this situation are present at other DOE facilities. A consistent approach to rating safeguards and security activities is necessary. Furthermore, all required inspections must be performed to facilitate funding and policy decisions for two reasons: (1) to improve the credibility of the safeguards and security oversight process and (2) to ensure that problems are not overlooked or that their importance is minimized. Increased attention to performing required oversight because of recent security breaches and recent changes to the rating criteria for safeguards and security contract performance for the Los Alamos and Lawrence Livermore national laboratories are steps in the right direction. Such attention must be maintained, and rating criteria should be monitored to ensure adequate safeguards and security at nuclear facilities in the future.

Recommendations

To improve the oversight of safeguards and security activities at DOE's laboratories, we recommend that the Secretary of Energy do the following:

- Require that DOE's safeguards and security information system contain the Independent Oversight Office's and operations offices' safeguards and security findings. To the extent practical, the key findings of other organizations, such as DOE's Inspector General, should be included.
- Provide for access to the system by DOE's area-office and laboratory safeguards and security staff with a legitimate need. Such access should be in accordance with DOE's security restrictions.
- Require the Independent Oversight Office to verify and validate correction of its findings and continue its current involvement in developing corrective actions for findings resulting from its inspections. The Secretary should also make these responsibilities binding by incorporating them into the DOE directives system.
- Ensure, to the extent possible, that rating criteria used by the various safeguards and security oversight organizations are more consistent and accurately reflect the effectiveness of safeguards and security at all DOE's nuclear facilities.

Agency Comments and Our Evaluation

We provided DOE with a draft of this report for its review and comment. Overall, DOE stated that the report was objective and generally accurate but noted a number of areas where it thought that clarification was needed.

Those areas related to the closure of safeguards and security findings; the safeguards and security information management system, and the title of the report.

In commenting on our discussion of the closure of safeguards and security findings, DOE stated that line management—in this case, the operations offices—is responsible for ensuring that identified security deficiencies are adequately corrected. It believes the closing of findings is a line management function and that OA is responsible for follow-up inspections when the significance of the deficiency warrants. It stated that this approach is consistent with what is commonly done in government and industry. Accordingly, DOE made a number of suggested changes to the report to reflect this view.

We agree that line management is responsible for taking the necessary corrective actions to close a finding and that making decisions for follow-up inspections that are based on the significance of the deficiency is acceptable. However, because of the problems identified in this report—such as the difficulty in identifying findings and the 2- or 3-year lapse between inspections—we continue to believe that OA should be responsible for validating and verifying that the corrective action taken does, in fact, eliminate the problem identified. Because OA is the originator of the finding, it is in the best position not only to be involved in reviewing the corrective action plans, but also to verify and validate that the corrective actions have been taken and to ensure that the finding was corrected to its satisfaction. While we acknowledge that OA is following up on its 1999 reviews, this was not done previously. After considering DOE's comments, we added to our recommendations that DOE should incorporate OA's verification and validation of corrective actions into the DOE directives system.

In commenting on our description of DOE's Safeguards and Security Information Management System, DOE stated that the report gave readers a distorted impression of the System. DOE commented that the report did not clearly identify that the Safeguards and Security Information Management System is operated by the Office of Security and Emergency Operations. Although the Office of Security and Emergency Operations is clearly identified as the operator of the System in the appropriate section of the report, we have added that clarification to the Results in Brief section as DOE suggested. DOE also commented that the report did not recognize that the System has been capable of including OA's, GAO's, and the Inspector General's findings since 1988. We do not dispute the System's

capability. However, our focus was on the System's use—what findings were actually entered into the System. Our recommendations are not entered in the system, OA's findings were not entered in the System from 1995 through 1998, and the Inspector General's recommendations were not entered in the System until late 1999. Regardless of the System's capabilities, as long as these findings are not entered into the System, DOE has no centralized means to track the findings and their correction. As a result, we did not make DOE's suggested change. Relatedly, DOE commented on our discussion of the inadequate access to the Safeguards and Security Information Management System. DOE stated that it does not restrict access to the System. However, in its comments, the Department conceded that the configuration of the System limits access to headquarters and the operations offices. We believe this is a significant limitation. We do not advocate vast increases in the number of personnel with access to the System. However, we believe that area office and national laboratory personnel with appropriate clearances and a legitimate need to use the System should have direct access to the System to facilitate the correction of safeguards and security problems. As a result, we did not make DOE's suggested change.

DOE's last major concern involved the title of the report. DOE stated that our use of the word "oversight" in the title could lead readers to the conclusion that the report was only about OA. Our report clearly states that we reviewed oversight functions of two organizations—OA and the operations offices. We agree that the operations offices are the line managers for the laboratories and that their survey responsibilities constituted oversight of the security situation at the laboratories. We did not change the report's title. DOE also provided a number of technical comments that we addressed as appropriate. The full text of DOE's comments is included in appendix I.

Scope and Methodology

To obtain information on the monitoring and tracking of findings resulting from DOE's oversight activities, we held discussions with officials in DOE's Office of Defense Programs, Office of Independent Oversight and Performance Assurance, and Albuquerque and Oakland Operations Offices. We also held discussions with contractor officials at the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory on their monitoring and tracking of DOE's oversight findings. In addition, we examined tracking and monitoring reports from the Albuquerque and Oakland Operations Office.

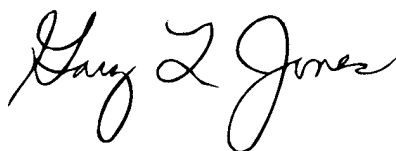
To determine the consistency of safeguards and security ratings, we examined the oversight reports of the Office of Independent Oversight and Performance Assurance and DOE's Albuquerque and Oakland Operations Offices as well as the Lawrence Livermore National Laboratory's and Los Alamos National Laboratory's contractor performance ratings.

To determine the identification, correction, validation, and closing of findings resulting from DOE's oversight activities, we (1) examined the oversight reports of the Office of Independent Oversight and Performance Assurance and DOE's Albuquerque and Oakland Operations Offices and the corrective action plans of the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory taken in response to DOE's findings and (2) examined the records documenting closure and validation of the findings from DOE's oversight activities. We visited the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory to validate that actions were taken to close a sampling of oversight findings. These findings were selected judgmentally to provide a variety of findings from different sources and to allow for the physical inspection of the corrective action. Our work was performed from June through December 1999 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies of the report to the Honorable Bill Richardson, Secretary of Energy, and the Honorable Jacob J. Lew, Director, Office of Management and Budget. We will make copies available to others on request.

If you or your staff have any questions about this report, please call me at (202) 512-3841. Major contributors to this report included William F. Fenzel, Assistant Director; Kenneth E. Lightner, Jr., Senior Evaluator; Ilene Pollack, Senior Evaluator; and Susan W. Irwin, Senior Attorney.

Sincerely yours,

A handwritten signature in cursive script that reads "Gary L. Jones". The signature is written in black ink and is centered on the page.

(Ms.) Gary L. Jones
Associate Director, Energy,
Resources, and Science Issues

Comments From the Department of Energy



Department of Energy

Washington, DC 20585

January 31, 2000

MEMORANDUM FOR: Gary Jones, Associate Director
Energy, Resources, and Science Issues
General Accounting Office

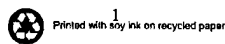
FROM: Glenn S. Podonsky, Director, OA-1

SUBJECT: DEPARTMENT OF ENERGY RESPONSE TO GAO DRAFT
REPORT RCED-00-62, "NUCLEAR SECURITY: Improvements
Needed in DOE's Safeguards and Security Oversight"

We want to thank you for the opportunity to review the January 18, 2000, draft of your report RCED-00-62, "NUCLEAR SECURITY: Improvements Needed in DOE's Safeguards and Security Oversight." This response reflects review by other appropriate organizations within the Department. Those organizations include: the Office of Independent Oversight and Performance Assurance; the Office of Defense Programs, Office of Security and Emergency Operations, Office of Counterintelligence, Oakland Operations Office; Albuquerque Operations Office, Los Alamos National Laboratory and Lawrence Livermore National Laboratory. Overall, we found the draft to be objective and reasonably accurate. However, we noted several areas in which the accuracy of the report could be improved by clarifying points that we believe could mislead the reader. We therefore offer the following comments for your consideration. We provide a general discussion of each issue, and identify specific portions of the draft report, which we would recommend be changed for clarification or increased accuracy. We address each issue as points applicable to that issue appear sequentially through the draft report, then address the next issue in the same manner, rather than addressing all points as they appear sequentially in the draft report. Many of our comments on the January 18, 2000, draft have been satisfactorily addressed in your January 27, 2000, revision and are not mentioned below.

Closure of Findings. The draft report repeatedly makes the point that the Office of Independent Oversight and Performance Assurance does not verify and validate corrective actions or formally close findings we have assigned, implying that we should be doing this.

Our mission is to evaluate the effectiveness of safeguards and security, cyber security, and emergency management policies and practices throughout the Department. DOE policy clearly places the responsibility for implementing those policies and practices on line management at all levels within the Department, including Lead Program Secretarial Officers, DOE field offices and its contractor organizations. Line managers have the resources, the ability, and the responsibility to make things happen at our facilities. This line management responsibility includes insuring that identified security deficiencies are adequately corrected. Consequently, the Operations Office managers – as the primary DOE line managers in the field – are



Appendix I
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responsible for verifying the implementation of corrective actions and closing all findings related to deficiencies at facilities or in programs for which they are responsible.

The Operations Offices, having primary line management responsibilities for field operations, are responsible for working with the facilities to ensure that appropriate corrective actions are developed and for verifying that they are effectively implemented – no matter what the source of the finding. Consequently, they formally close all findings, including those they have identified during their own security surveys as well as those identified by OA during an independent oversight inspection.

The Office of Independent Oversight and Performance Assurance, having no line management authority or responsibility, is not the appropriate organization to perform this line management function. Although we do not formally close findings we assign, it is misleading to imply that we now, or ever, merely issue findings and forget about them. When the significance of deficiencies warrant, we conduct follow-up inspections to determine whether corrective actions and/or other changes have sufficiently eliminated the vulnerability. If deficiencies do not warrant a special follow-up inspection, we include as a specific priority of our next regularly scheduled inspection of the facility an evaluation of the adequacy of actions in response to our previous findings. Therefore, although we do not formally close findings, we do follow-up to determine if the related deficiency has been corrected to our satisfaction. In the event a finding has been closed by the Operations Office but we find the problem still exists, we will issue a repeat finding.

We believe that this general distribution of responsibilities, that makes line managers responsible for correcting deficiencies and ensuring that their corrective actions are effective, and makes independent oversight responsible for periodically independently evaluating program effectiveness, is a model that is commonly found throughout government and industry. It is also consistent with our corporate approach in other areas, such as the approach we adopted with the Defense Nuclear Facilities Safety Board regarding responsibilities for safety related corrective actions and oversight at certain facilities.

Consequently, we would recommend the following changes to your draft report:

Draft report, page 13, second paragraph under heading “OA Did Not Validate or Certify Closure of Its Findings.”

Change the first sentence to read: *“Because OA did not get formally involved in the correction of findings, the laboratories were not always aware of which deficiencies were considered of greatest significance and rising to the level of finding. Consequently some findings were never tracked and corrected and in one instance a laboratory formally tracked and corrected a deficiency that OA considered a lower tier deficiency.”*

Delete the last sentence (on page 14) since the laboratories are expected to correct all deficiencies, not just “findings.”

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Draft report, page 20, second paragraph under "Conclusions": After mentioning that OA does not formally validate and verify the corrective actions and certify closure of the findings, add the phrase "*which DOE views as a responsibility of line management.*"

Draft report, page 21, under "Recommendations": Replace the third bullet with: "*make the current requirement for OA involvement in reviewing and commenting on corrective action plans for findings resulting from its inspections, and in verifying the adequacy of corrective actions through follow-up inspections and other appropriate activities binding by incorporating it into the DOE directives system; and*" This identifies appropriate action by OA to ensure that corrective actions are responsive and effective without usurping line management responsibilities.

Findings Tracking System. The draft report gives the reader a distorted impression of SSIMS as an incomplete and inadequate safeguards and security tracking system. It is in fact a comprehensive system for fulfilling its intended purpose. While there are clearly opportunities to enhance the system and its utility, the report does not provide the proper balance.

Draft report, page 2, first sentence: Wording in some parts of the report tends to give the false impression that the Safeguards and Security Information Management System (SSIMS) is operated by the Office of Independent Oversight and Performance Assurance. This is not the case. The system is operated by the Office of Security Affairs within the Office of Security and Emergency Operations. Recommend the following changes for clarification. For clarity, change the first sentence to read: "*The DOE Office of Security and Emergency Operations maintains a centralized...*"

Draft report, page 7, paragraph 2, sentence 6: SSIMS has been programmed since 1988 to accept these reports. Currently, five closed Office of Inspector General (IG) findings are recorded on SSIMS. Guidance put out by OSS provided field offices with the information on entering various forms of oversight reviews (including OA, IG and GAO).

Draft report, page 8, last paragraph: The Office of Security and Emergency Operations does not restrict SSIMS access to anyone as long as that person(s) has the appropriate "Q" clearance (or recognized equivalent), a need-to-know, and authorization from their respective Division Director. The training and equipment costs associated with establishing access to SSIMS is minimal and has never been a deterring factor in granting anyone or any organization access to SSIMS. Any user with access to the system can access all of the information in the database.

However, because of the current system configuration, access to the system is limited to DOE Headquarters, field offices, and their support contractors. Allowing access to the system by laboratory employees would require that the system be compartmented in order to control need-to-know.

This discussion should also explicitly acknowledge the "need-to-know" concerns that must be balanced with the advantages of broader access to SSIMS. It should also mention that a strong analysis and lessons-learned program to disseminate appropriate information from SSIMS to other sites could compensate for limited access to SSIMS by site contractors. Recent initiatives

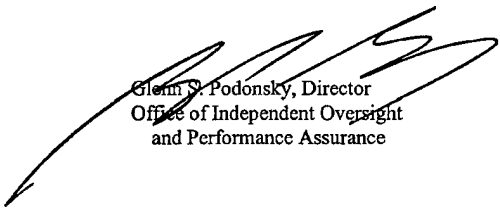
Appendix I
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by SO (site status briefings by S&S Desk Officers and the "cross talk" program) are intended to enhance lessons-learned communications.

Draft report, page 14, paragraph 1: In the sentence "The draft report clearly identified and numbered ..." insert the following at the end "..., although the numbers did not conform to the numbering format in SSIMS."

Miscellaneous Comments.

Report title. Within the DOE safeguards and security community, the term "oversight" is generally accepted to refer to the activities of the Office of Independent Oversight and Performance Assurance. Even though the word is used properly, in its generic sense, in the draft report, it will be misinterpreted in the DOE. Most of the concerns addressed in the draft report are related to line management feedback and improvement processes and responsibilities, such as tracking systems for corrective actions, corrective action analysis, etc. Few of the concerns relate to Independent Oversight. However, the title suggests, and will be interpreted in DOE to mean, that the report is primarily about problems with Independent Oversight. We suggest a more neutral title, or use of alternate wording for "oversight." For example, we suggest an appropriately descriptive title could be: *"Improvements Needed in DOE's Safeguards and Security Feedback and Improvement Process"*



Glenn S. Podonsky, Director
Office of Independent Oversight
and Performance Assurance

cc:
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K. Eberwine, CN-1
J. McDuffie, CR-2
L. Thomas, DP-44
D. Speidel, NN-10
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