U.S. Department of Energy
Office of Inspector General
Office of Inspections and Special Inquiries

Inspection Report

Excessing of Computers Used for Unclassified Controlled Information at Lawrence Livermore National Laboratory

DOE/IG-0759 **March 2007**

Department of Energy
Washington, DC 20585

March 5, 2007

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Inspection Report on "Excessing of Computers Used for Unclassified Controlled Information at Lawrence Livermore National Laboratory"

BACKGROUND

The Department of Energy has an extensive inventory of information technology systems. A number of these systems process information categorized as "unclassified controlled information." This term includes unclassified controlled nuclear information, proprietary information, export controlled information, official use only information, and personally identifiable information, which can include employee social security number, place of birth, and date of birth.

When unclassified computers and other electronic memory devices are determined to be excess, they may be transferred for reuse within Department facilities or other governmental agencies, donated for educational purposes, sold, or salvaged. However, to prevent the unauthorized dissemination of unclassified controlled information, Department policy requires that, during the excessing process, data stored on computer hard drives and other memory devices be properly removed or physically destroyed.

The Department's Lawrence Livermore National Laboratory (LLNL) is a research and development institution that supports the core mission of national security. LLNL excesses approximately 5,300 computers each year. We initiated an inspection to determine if LLNL: (1) excessed unclassified computers and other electronic memory devices in accordance with applicable policies and procedures; and, (2) had adequate internal controls in place to prevent the unauthorized dissemination of unclassified controlled information.

RESULTS OF INSPECTION

We concluded that although LLNL was adhering to its own policies and procedures regarding the excessing of unclassified computers and other electronic memory devices, LLNL's policies, procedures, and internal controls were not always consistent with applicable Department policies. Specifically, we found that:

- The National Nuclear Security Administration (NNSA), which has cognizance over LLNL, delayed having LLNL implement Department policy on clearing, sanitizing, and destroying memory devices for almost 2½ years after the policy was issued.

Department directives on the topic were issued in February 2004 and June 2005 and were applicable to NNSA sites. However, instead of directing LLNL to implement the directives, NNSA waited while its Office of the Chief Information Officer drafted a policy letter to provide LLNL and other NNSA sites with specific requirements for clearing, sanitizing, and destroying unclassified controlled information on computers and electronic memory devices. NNSA did not issue the policy letter until August 2006. As of March 1, 2007, LLNL was working on implementing the policy.

- Due to the delay in implementing the Department directives at LLNL, the Laboratory did not establish certain site-wide procedures and internal controls necessary to ensure the proper clearing, sanitization, and destruction of memory devices. In particular, LLNL did not ensure that during the excessing process all equipment that potentially contained embedded memory devices was examined to make certain that stored data was properly removed; that computer hard drives reused on-site were adequately sanitized; and that the sanitization of memory devices was always properly documented in accordance with Department policy.

The Office of Inspector General recently issued a report with similar findings regarding the Department's Idaho National Laboratory (see DOE/IG-0757). Further, a recent Office of Inspector General audit of NNSA's implementation of the Federal Information Security Management Act found that NNSA did not always ensure that its policies were consistent with Department requirements and were adequately implemented (see DOE/IG-0758). Despite the number of problems that we and others have identified over the years with the Department's efforts to appropriately excess computers and other electronic memory devices, major Department elements, including NNSA, did not timely implement Department policy specifically issued to address the appropriate excessing of computers and the handling of electronic memory devices. Specific to this current report, we made several recommendations to management designed to enhance the security of sensitive information and to improve contract administration.

MANAGEMENT REACTION

In responding to a draft of this report, management did not specifically state whether it concurred with our recommendations; however, management indicated that certain corrective actions have been or will be initiated. We will work with management to ensure appropriate resolution of our recommendations.

Attachment

cc: Deputy Secretary
Administrator, National Nuclear Security Administration
Under Secretary of Energy
Under Secretary of Science
Chief of Staff
Manager, Livermore Site Office
Director, Policy and Internal Controls Management (NA-66)
Director, Office of Internal Review (CF-1.2)
Audit Liaison, Livermore Site Office

EXCESSING OF COMPUTERS USED FOR UNCLASSIFIED CONTROLLED INFORMATION AT LAWRENCE LIVERMORE NATIONAL LABORATORY

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Overview

INTRODUCTION AND OBJECTIVES

The Department of Energy's (DOE's) Lawrence Livermore National Laboratory (LLNL) is a research and development institution that supports the core mission of national security. The University of California manages and operates LLNL for the National Nuclear Security Administration (NNSA).

DOE spends over $2 billion each year on information technology and has a current inventory of approximately 800 information systems, including up to 115,000 personal computers, many powerful supercomputers, numerous servers, and a broad array of related peripheral equipment. The unclassified computers and electronic memory devices in these information technology systems may contain "unclassified controlled information." This term includes unclassified controlled nuclear information, proprietary information, export controlled information, official use only information, and personally identifiable information, which can include employee social security number, place of birth, and date of birth.

DOE has long recognized the importance of protecting unclassified controlled information stored on computers and other electronic memory devices, particularly when this equipment is no longer needed and becomes excess property. Excess property items, including unclassified computers and other electronic memory devices, may be transferred for reuse within DOE facilities or other governmental agencies, donated for educational purposes, sold, or salvaged.

At LLNL, there are approximately 23,000 computers currently in use, and approximately 5,300 computers are excessed each year. To prevent the unauthorized dissemination of unclassified controlled information, DOE policy requires that data stored on computers and electronic memory devices must be properly removed or physically destroyed before these devices are internally transferred or released from a DOE-controlled environment. DOE approved methods for removing and/or destroying data on memory devices include: overwriting (often referred to as sanitizing and/or clearing) the data a specific number of times; electronically destroying the data on the memory devices by using a degaussing machine; and physically pulverizing, incinerating, smelting, or disintegrating the memory devices. Overwriting is the only method that does not physically or electronically damage memory devices, thus it allows a memory device to be reused.

The objectives of this inspection were to determine if LLNL: (1) excessed unclassified computers and other electronic memory devices in accordance with applicable policies and procedures and (2) had adequate internal controls in place to prevent the unauthorized dissemination of unclassified controlled information.

OBSERVATIONS AND CONCLUSIONS

We concluded that although LLNL was adhering to its own policies and procedures regarding excessing of unclassified computers and other electronic memory devices, LLNL's policies, procedures, and internal controls were not always consistent with applicable DOE policies. Specifically, we found that:

- NNSA delayed having LLNL implement Department policy on clearing, sanitizing, and destroying memory devices for almost 2½ years after the policy was issued. Department directives on the topic were issued in February 2004 and June 2005 and were applicable to NNSA sites. However, instead of directing LLNL to implement the directives, NNSA waited while its Office of the Chief Information Officer (OCIO) drafted a policy letter to provide LLNL and other NNSA sites with specific requirements for clearing, sanitizing, and destroying unclassified controlled information on computers and electronic memory devices. NNSA did not issue the policy letter until August 2006. As of March 1, 2007, LLNL was working on implementing the policy.

- Due to the delay in implementing the DOE directives at LLNL, the Laboratory did not establish certain site-wide procedures and internal controls necessary to ensure the proper clearing, sanitization, and destruction of memory devices. In particular, LLNL did not ensure that during the excessing process all equipment that potentially contained embedded memory devices was examined to make certain that stored data was properly removed; that computer hard drives reused on-site were adequately overwritten; and that the overwriting of memory devices was always properly documented in accordance with Department policy.

Reviews by the Office of Inspector General at other DOE sites have also identified weaknesses in the excessing of computers and other electronic memory devices. A list of the associated reports is found in Appendix C.

Details of Findings

POLICY IMPLEMENTATION DELAYED

We found that NNSA delayed having LLNL implement Department policy on clearing, sanitizing, and destroying memory devices for almost 2½ years after the policy was issued. Department directives on the topic were issued in February 2004 and June 2005 and were applicable to NNSA sites. However, instead of directing LLNL to implement the directives, NNSA waited while its OCIO drafted a policy letter to provide LLNL and other NNSA sites with specific requirements for clearing, sanitizing, and destroying unclassified controlled information on computers and electronic memory devices. NNSA did not issue the policy letter until August 2006. As of March 1, 2007, according to Livermore Site Office (LSO) officials, LLNL was working on implementing the policy.

In 2000, Congress enacted the National Nuclear Security Administration Act (NNSA Act), which established NNSA as a separately organized agency within DOE, with the NNSA Administrator being responsible for overseeing the agency. As an organizational element within DOE, NNSA is subject to a DOE directive if either the Secretary or Deputy Secretary of Energy issues the directive stating that it is applicable to NNSA. Additionally, under the NNSA Act, the NNSA Administrator has the authority and responsibility to develop policies and guidance for all organizations within NNSA. NNSA has created a system of policy letters (referred to as "NAPs") as one of the methods used to implement DOE policies, establish internal policies, and provide guidance to its elements.

In February 2004, DOE Notice 205.12, "Clearing, Sanitizing, and Destroying Information System Storage Media, Memory Devices, and Other Related Hardware," was issued by the Deputy Secretary. The Notice identified specific requirements for removing unclassified controlled information from electronic memory devices to prevent unauthorized dissemination of the information when the devices were excessed and removed from a DOE-controlled environment. The Notice specified that it was applicable to NNSA, with a 90-day implementation period from the date of the policy's issuance.

In June 2005, DOE Manual 205.1-2, "Clearing, Sanitization, and Destruction of Information System Storage Media, Memory Devices, and Related Hardware Manual," was issued to replace DOE Notice 205.12. The Manual was issued by the Secretary and identified specific requirements for removing unclassified controlled information from electronic memory devices prior to the devices leaving a DOE-controlled environment. The Manual also was applicable to NNSA and had a 90-day implementation period.

LSO officials told us that, after the Notice was issued, LSO was directed not to implement it locally because a NAP was being developed that would address the actions required by the Notice. LSO officials provided us with February 2004 and March 2004 e-mails to NNSA officials requesting guidance on implementing the Notice. In its e-mails, LSO indicated that it was trying to determine whether the Notice should be added to LLNL's contract. A response from an NNSA Albuquerque Service Center official said that an official from NNSA's OCIO stated at an "all fed" meeting on February 25, 2004, that no NNSA site should take action until the NNSA OCIO official directs it and to expect further guidance from the NNSA OCIO. A March 2004 e-mail from the NNSA OCIO official responding to one of the LSO queries stated that "It appears that we will need to issue another NAP to implement 205.12." LSO officials told us that they must rely on directions from the NNSA OCIO in order to implement cyber security related Department policy at LLNL. Therefore, they said, they delayed implementing the Notice and the successor Manual into the LLNL management contract pending the release of the NAP by the NNSA OCIO.

LSO officials said that it was not until February 2006 that NNSA finally instructed LSO to incorporate the Manual into the LLNL contract. The Manual was incorporated into the LLNL contract in July 2006. In August 2006, NNSA issued NAP-14.16, "Clearing, Sanitizing, and Destroying Information System Storage Media, Memory Devices, and Other Related Hardware." Thus, there was a delay of almost 2½ years in NNSA directing the implementation of Department policy regarding clearing, sanitizing, and destroying information on memory devices. As of March 1, 2007, according to LSO officials, LLNL was working on implementing the policy.

When asked about the delay, one NNSA OCIO official cited various issues, including resources, and acknowledged that authorization was not obtained to delay implementation of the Notice and the Manual. The NNSA OCIO official referred to above in the e-mails provided by LSO also cited issues such as resources as leading to the delay in issuing NAP-14.16. However, he said that he did not direct LSO to not implement the two directives locally and that ultimately it was the responsibility of LSO to implement Department policy into the LLNL management contract.

We reviewed NAP-14.16 and noted that its requirements were very similar to those in the Manual. In addition, many of the LSO officials we interviewed during our inspection told us that in their

opinions it would have been much simpler to implement the Notice, and later the Manual, rather than wait for the NAP.

We contacted NNSA officials at other NNSA sites regarding their implementation of the Manual and were provided information indicating the Manual was implemented inconsistently throughout the NNSA complex. For example, we were told that Sandia National Laboratories and Los Alamos National Laboratory did not implement the Manual within the designated 90-day period, but that the Nevada Test Site and the Kansas City Plant did.

EXCESSING OF COMPUTERS AT LLNL

We found that, due to the delay in implementing the DOE directives at LLNL, the Laboratory did not establish certain site-wide procedures and internal controls necessary to ensure the proper clearing, sanitization, and destruction of memory devices. As discussed below, LLNL did not ensure that during the excessing process all equipment that potentially contained embedded memory devices was examined to make certain that stored data was properly removed; that computer hard drives reused on-site were adequately overwritten; and that the overwriting of memory devices was always properly documented in accordance with Department policy.

Disposal of Other Office Equipment

DOE Manual 205.1-2 provides specific requirements for clearing, sanitizing, and destroying various types of memory devices that may be embedded in electronic equipment, such as facsimile and copier machines, prior to excessing the equipment. We determined that, prior to excessing, LLNL did not always examine facsimile and copier machines for possible embedded memory devices that could retain scanned information. We also determined that LLNL did not have specific policies and procedures comparable to those in the Manual that identify different types of memory devices and the specific methods and requirements for clearing, sanitizing, or destroying these devices.

Internal Reuse of Computers

DOE Manual 205.1-2 requires that computer hard drives containing unclassified controlled information be overwritten three times before being transferred to a new user within a DOE-controlled environment. This procedure ensures that unclassified controlled information, including personally identifiable information, cannot be recovered from the hard drives by individuals reusing the computers. We determined that many times computer hard drives that may have been used to process unclassified controlled information were only being overwritten one time prior to being transferred to new users within LLNL.

Documentation Requirements

DOE Manual 205.1-2 requires that, when memory devices are cleared and/or sanitized (e.g., overwritten) to remove unclassified controlled information, detailed documentation must be maintained that includes: the media serial number, make, and model; the purpose for clearing or sanitizing; and the procedures used. We were told by LLNL officials that many of the LLNL directorates clear, sanitize, and/or remove hard drives from excess computers prior to their being sent to LLNL's excess property center and that they had not documented the required information.

RECOMMENDATIONS

We recommend that the Administrator, NNSA:

1. Review the circumstances regarding the failure to implement DOE Notice 205.12 and the delayed implementation of DOE Manual 205.1-2; then take appropriate action to ensure there is not a recurrence of such a delay in implementing policy within NNSA.

2. Ensure that the requirements of DOE Manual 205.1-2 and NAP-14.16 have been implemented throughout NNSA.

We recommend that the Manager, Livermore Site Office, ensures that:

3. All computers and other equipment with electronic memory devices that contain or may contain unclassified controlled information are cleared/sanitized in accordance with the requirements in DOE Manual 205.1-2 and NAP-14.16 prior to transfer to a new user within a DOE-controlled environment.

4. LLNL implements DOE Manual 205.1-2 and NAP-14.16 requirements pertaining to: (a) documentation of the clearing and/or sanitization of unclassified controlled information memory devices; and (b) the examination of electronic equipment that potentially has embedded memory devices.

MANAGEMENT COMMENTS

In comments on a draft of this report, management did not specifically state whether it concurred with our recommendations; however, management indicated that certain corrective actions have been or will be initiated.

INSPECTOR COMMENTS

We will work with management to ensure appropriate resolution of our recommendations. Management's comments are included in their entirety at Appendix B.

Appendix A

SCOPE AND METHODOLOGY

The fieldwork for this inspection was conducted between April and June 2006. As part of this inspection, we interviewed NNSA, LSO, and LLNL officials, as well as LLNL employees involved in the excessing of computers and other equipment that utilizes electronic memory devices. We also reviewed DOE, NNSA, and LLNL policies, procedures, and records relating to the excessing of information technology equipment. Documents used in this review included:

- 41 Code of Federal Regulations 102, "Federal Management Regulations";
- DOE Notice 205.12, "Clearing, Sanitizing, and Destroying Information System Storage Media, Memory Devices, and Other Related Hardware";
- DOE Manual 205.1-2, "Clearing, Sanitization, and Destruction of Information System Storage Media, Memory Devices, and Related Hardware Manual";
- National Nuclear Security Administration Act (Public Law 106-65); and
- NAP-14.16, "Clearing, Sanitizing, and Destroying Information System Storage Media, Memory Devices, and Other Related Hardware."

Pursuant to the requirements of the Government Performance and Results Act of 1993, we assessed the performance measures applicable to the excessing of computers used for unclassified controlled information at LLNL.

This inspection was conducted in accordance with the "Quality Standards for Inspections" issued by the President's Council on Integrity and Efficiency.

Department of Energy
National Nuclear Security Administration
Washington, DC 20585

February 20, 2007

MEMORANDUM FOR Christopher R. Sharpley
Deputy Inspector General
for Investigations and Inspections

FROM: Michael C. Kane
Associate Administrator
for Management and Administration

SUBJECT: Comments to Livermore Excessing Computers Draft Report; S06IS019/ 2006-09341

The National Nuclear Security Administration (NNSA) appreciates the opportunity to review the Inspector General's draft report, "Excessing of Computers Used for Unclassified Controlled Information at Lawrence Livermore National Laboratory." We understand that this inspection was conducted to determine if Livermore excessed unclassified computers in accordance with directives and if Livermore had adequate internal controls in place.

While the IG concluded that Livermore was adhering to its own policies, these policies were not always consistent with departmental policies. NNSA's Office of Cyber-Security will review the circumstances regarding the failure to implement our policies for "Clearing, Sanitizing, and Destroying Memory Devices" and will work with the sites and the laboratories to ensure that the implementation of our policies for "Clearing, Sanitizing, and Destroying Memory Devices" occurs. The Site Office and Laboratory have developed an implementation plan to address the requirements of NAP 14.16, and the Laboratory is currently revising internal policies and practices appropriately. NNSA will validate these changes when the Site Office conducts its FY 2007 Safeguards and Security survey.

Should you have any questions about this response, please contact Richard Speidel, Director, Policy and Internal Controls Management.

cc: Manager, Livermore Site Office
Associate Administrator for Defense Nuclear Security
Chief Information Officer

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Appendix C

PRIOR REPORTS

The following Office of Inspector General reports are related to the excessing of computers and other electronic memory devices.

"Internal Controls for Excessing and Surplusing Unclassified Computers at Los Alamos National Laboratory" (DOE/IG-0734, July 2006). This report found that Los Alamos did not follow DOE directives and internal policies pertaining to excessing computers. As a result, an excessed computer with an intact, unsanitized hard drive was sold to the public. Further, the internal control failure relating to the excessing and surplusing of this computer raised concerns as to whether the hard drives for seven other computers excessed at the same time were sanitized and removed prior to the computers being sent to auction.

"Destruction of Classified Hard Drives at Sandia National Laboratory-New Mexico" (DOE/IG-0735, August 2006). This report found that Sandia did not destroy classified computer hard drives in accordance with DOE directives. Sandia did not always maintain proper documentation, destroy hard drives on the same day they were removed from the site, obtain proper approval for off-site destruction of hard drives, and use appropriately cleared personnel for the destruction process.

"Excessing of Computers Used for Unclassified Controlled Information at Idaho National Laboratory" (DOE/IG-0757). This report found that the Idaho National Laboratory (INL) did not have adequate policies and internal controls for excessing computers and other electronic memory devices to prevent the unauthorized dissemination of unclassified controlled information. INL did not always excess computers in accordance with applicable policies and procedures, and new Department policies on clearing, sanitizing, and destroying hard drives and other memory devices were not implemented at INL for approximately 16 months.

IG Report No. DOE/IG-0759

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