DOE/IG-0455

INSPECTION REPORT

INSPECTION OF THE SALE OF A PARAGON SUPERCOMPUTER BY SANDIA NATIONAL LABORATORIES

DECEMBER 1999

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF INSPECTIONS

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Report on "Inspection of the Sale of a Paragon Supercomputer by Sandia National Laboratories," DOE/IG-0455

BACKGROUND

On July 27, 1999, we initiated an inspection into the facts and circumstances surrounding the sale and repurchase of an INTEL Paragon XPS supercomputer (Paragon) by Sandia National Laboratories (Sandia), Albuquerque, New Mexico. This inspection was initiated at your request based on concerns that the sale of the Paragon supercomputer to a Chinese national could be detrimental to the national security of the United States.

RESULTS OF INSPECTION

The inspection disclosed that Sandia failed to exercise prudent management judgment in its determination to excess and the process it used to sell the Paragon computer. Further, Sandia was not sufficiently sensitive to potential national security issues associated with the sale of the supercomputer. Specifically:

- Sandia did not treat the Paragon as high risk property at the time of the sale even though it met the high risk criteria for export controlled property; and, it could arguably have met the high risk criteria for proliferation sensitive property.

- Sandia failed to include the required export/import clause in the sales invitation for bid and did not use the proper Export Restriction Notice for high risk property required by the Department's Property Management Regulations.

- Sandia sold the Paragon with at least 34 manuals, guides, and notes relating to the operation and maintenance of the Paragon system that were not reviewed for export control considerations prior to the sale. The Department of Commerce is currently investigating the possibility of a deemed export violation.

- Sandia sold the Paragon with approximately 130 “unclassified” data storage disks that were not sanitized prior to sale. While there is currently no evidence that the “unclassified” disks contained classified information, no one at Sandia attempted to make a determination of the exact nature of the information contained on the disks.

- Sandia sold the Paragon before it completed the required 36-day reutilization screening period.

- Sandia’s approved Property Management System did not contain any written procedures for the sale of excess property.

- Sandia did not address potential national security concerns after the Paragon was sold. Specifically, Sandia failed to act on two separate occasions after learning that the company that purchased the Paragon might have had intentions of providing Paragon parts to the People’s Republic of China.

While there was a clear breakdown at several levels at Sandia, we concluded that a fundamental weakness in the sale of the Paragon was that senior level management officials were not aware of the sale and were not, therefore, afforded the opportunity to exercise management judgement on how to dispose of high risk property like a Paragon supercomputer. In fact, one Sandia senior vice president called the sale of the Paragon an action of “enormous stupidity.”

We made several recommendations to the Manager of the Albuquerque Operations Office that address weaknesses in Sandia’s High Risk Property Control Process and Sandia’s Property Management process. We also made a recommendation to the General Counsel for the development of an opinion on the legality of Department contractors inquiring about the possible foreign ownership of companies that bid on excess property.

MANAGEMENT REACTION

Management concurred or partially concurred with the recommendations and has initiated, or is in the process of initiating, appropriate corrective actions.

Attachment

cc: Deputy Secretary
Under Secretary

INSPECTION OF THE SALE OF A PARAGON SUPERCOMPUTER BY SANDIA NATIONAL LABORATORIES

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Overview

Introduction and Objectives

On July 27, 1999, the Office of Inspector General, U.S. Department of Energy (Department) initiated an inspection into the facts and circumstances surrounding the sale and repurchase of an INTEL Paragon XPS supercomputer (Paragon) by Sandia National Laboratories (Sandia), Albuquerque, New Mexico. Sandia originally purchased the Paragon from INTEL Corporation on July 1, 1993, for $9.554 million. According to the Sandia Senior Vice President for National Security and Arms Control, the justification for the purchase of the Paragon included the fact that it was a cutting edge research instrument essential to the Department's nuclear weapons program.

On September 29, 1998, after approximately five years of use, Sandia sold the Paragon for $30,888 to EHI Group (EHI) USA, Inc., a company incorporated in the State of California.[1] The sale included 21 cabinets of processors and hard drives, the operating system, and 34 manuals, guides, and notes. According to Sandia's Chief Information Officer, if reassembled, the Paragon would be one of the 100 fastest computers in the world, having the capability to operate at 190,000 million theoretical operations per second (MTOPS). On July 21, 1999, after concerns were raised that the Paragon might be exported to the People's Republic of China, Sandia repurchased the Paragon from EHI for $88,888. The Paragon is currently in storage at Sandia's facility in Livermore, California.

This inspection was initiated at the request of the Secretary of Energy. In a memorandum to the Inspector General dated July 26, 1999, the Secretary wrote that, according to recent press reports, Sandia had sold the Paragon to a Chinese national residing in California. Concerns have been raised both within and outside the Government that the sale of the Paragon supercomputer to a Chinese national could be detrimental to the national security of the United States.

The objectives of this inspection were to determine: (1) if Sandia followed applicable property management requirements in the excessing and sale of the Paragon; (2) if Sandia followed all of the applicable export control requirements in the sale of the Paragon; (3) if any officials in the Department of Energy or senior level Sandia officials knew of and/or approved the sale of Paragon; and, (4) if Sandia and Department officials took appropriate actions when they learned about the sale of the Paragon to a Chinese national.

[1] Since the sale of the Paragon, the Chief Executive Officer (CEO) of EHI has been identified as a Chinese national living in the United States as a non-immigrant worker.

Observations and Conclusions

In the process of excessing and selling the Paragon, Sandia did not fully comply with the High Risk Personal Property Procedures contained in the Department's Property Management Regulations. Of particular significance, Sandia did not treat the Paragon as high risk property at the time of sale even though it met the high risk criteria for export controlled property, and could arguably have met the high risk criteria for proliferation sensitive property. As a result, Sandia did not perform a documented evaluation of the Paragon for any significant risks to national security and nuclear non-proliferation as required by the Property Management Regulations, thereby missing an opportunity to receive input from senior Department or Sandia officials on whether to proceed with the sale or render the Paragon useless for its original intended purpose.

Sandia also failed to include the required export/import clause in the sales invitation for bid. Sandia did place an export clause on the shipping document. However, Sandia did not consider the Paragon to be high risk property at the time of sale, and did not use the Export Restriction Notice for high risk property required by the Department's Property Management Regulations. As a result, the notice given to EHI did not include a reference to the Espionage Act, nor was there a direct statement that "the use, disposition, export and reexport of this property are subject to all applicable laws and regulations." In addition, Sandia sold the Paragon with at least 34 manuals, guides, and notes relating to the operation and maintenance of the Paragon system that were not reviewed for export control considerations prior to sale. The Department of Commerce (Commerce) is currently investigating the possibility of a deemed export violation associated with the 34 manuals, guides, and notes.

Sandia also sold the Paragon with approximately 130 "unclassified" data storage disks that were not sanitized prior to the sale to EHI. Sandia's focus was on selling the Paragon as an operating system to maximize their return on investment, and Sandia made a conscious decision that to sanitize the "unclassified" disks would render the Paragon worthless except for scrap or parts. While there is currently no evidence that the "unclassified" disks contained classified information relating to Sandia's classified operations of the Paragon, Sandia did not know the exact nature of the information contained on the "unclassified" disks at the time the Paragon was sold. In fact, no one at Sandia attempted to make this determination. The Department's Office of Security Affairs attempted to have the information stored on some of the "unclassified" disks read in order to determine if there was any classified, sensitive unclassified, or export controlled information on them. However, they were unable to retrieve interpretable data.

In addition, Sandia sold the Paragon before it completed the required 36-day reutilization screening period. We also noted that Sandia's approved Property Management System did not contain any written procedures for the sale of excess property.

Sandia also did not address potential national security concerns after the Paragon was sold. Specifically, in December 1998, Sandia personnel learned of concerns that EHI may have had intentions of providing Paragon parts to the People's Republic of China, but failed to act. Sandia treated these concerns as "unsupported speculation" that was insufficient to cause the matter to be brought to the attention of Sandia's export control or counterintelligence offices. Then in June 1999, the concerns resurfaced but were not reported to counterintelligence. As a result, the Paragon remained in the possession of EHI from December 1998 until July 1999, when the media raised additional concerns about the sale. Sandia then learned that a Chinese national was the CEO of EHI. Sandia, in coordination with Department officials, then took action to locate the Paragon, put its storage location under surveillance, and initiate negotiations to buy it back.

We believe that a fundamental weakness in the sale of the Paragon was that senior level management officials were not aware of the sale. Therefore, senior level officials were not afforded the opportunity to provide input or exercise management judgement on how to dispose of high risk property like a Paragon supercomputer. Property that is not on the trigger list, munitions list, or dual use list[2] could still be considered sensitive from a national security or nonproliferation standpoint. For the most part, Sandia treated the Paragon as if it were any other piece of excess property, when, in fact, it was a supercomputer that had been used in the Department's Nuclear Weapons Program. Sandia's High Risk Property Control Process, and approved property management procedures, had focused primarily on weapons and weapon components prior to the sale of the Paragon. There was minimal emphasis on computing equipment as high risk. As a result, the

[2] Trigger List means nuclear material, equipment, and related technology as described in the International Atomic Energy Agency Information Circular (INFCIRC) 254, Part 1. Munitions list means articles, services, and related technical data designated as defense articles and defense services by the Arms Export Control Act of 1968, as amended. Dual use list means nuclear-related material, equipment, and related technology as described in the INFCIRC 254, Part 1.

process for excessing and selling the Paragon did not include any input or management judgement by senior level officials on potential risks to national security and nuclear non-proliferation. The Sandia Senior Vice President for National Security and Arms Control said that when he served as the Sandia Senior Vice President for National Security Programs, the issue of excessing and disposing of the Paragon never came before him. The Sandia Senior Vice President said that if it had come to him, he would have said “no” to the sale of the Paragon. He said that it was “enormous stupidity” to sell the Paragon.

The Department’s Office of Contract and Resource Management has prepared an “INCIDENT REVIEW TEAM REPORT” titled “SANDIA NATIONAL LABORATORIES’ SALE OF AN INTEL PARAGON SUPERCOMPUTER.” This review addressed the sale of the Paragon and covered an evaluation of Sandia’s compliance with High Risk Property Procedures and the Guidelines on Export Control and Non-proliferation. While the review team’s report and this report do address different issues, these reports contain similar findings in some areas. However, a notable difference exists in the conclusions on whether Sandia followed the High Risk Personal Property Procedures contained in the Department’s Property Management Regulations.

Details of Finding

Sandia's Adherence to Property Management Requirements

The Department's Property Management Regulations, 41 CFR subpart 109-1.53, "Management of High Risk Personal Property," provides identification, accounting, control, and disposal policy guidance for the following categories of high risk personal property:

- Especially designed or prepared property.
- Export controlled property.
- Nuclear weapon components or weapon-like components.
- Proliferation sensitive property.

These regulations state that "[i]tems of high risk property may present significant risks to the national security and nuclear non-proliferation objectives of the Government which must be evaluated." These regulations also provide that organizations will identify high risk property and control its disposition to eliminate or mitigate such risks. In addition, these regulations state that the "designated contractor property management organization may not process high risk personal property into a reutilization/disposal program without performing the reviews prescribed by the local high risk property management system," and that the reviews must be properly documented.

Sandia's High Risk Assessment

However, the high risk assessment performed by Sandia was not consistent with the Department's Property Management Regulations. Sandia's high risk assessment primarily consisted of the Property Administrator asking a Sandia employee in early 1998 whether another supercomputer was a high risk item. The Property Administrator was told that the other supercomputer was not high risk, but was export controlled due to its speed. The Property Administrator said that he applied this information to the Paragon and determined that the Paragon was not a high risk item.

Although Sandia recognized that the Paragon was "export controlled property," Sandia did not recognize that "export controlled property" is also high risk property.[3] In addition, Sandia did not consider whether the Paragon should be included under the Property Management Regulations' definition for "proliferation sensitive property." Since Sandia did not consider the Paragon to be high risk, Sandia did not perform a documented evaluation of the Paragon for any significant risks to national security and nuclear non-proliferation.

[3] The Property Administrator acknowledged during our inspection that anything that is export controlled is considered to be high risk.

Evidence strongly suggests that the Paragon should have been considered "proliferation sensitive property." Specifically, the Paragon meets the definition of "proliferation sensitive property," identified in 41 CFR § 109-1.100-51 as "nuclear-related or dual-use equipment, material, or technology as described in the Nuclear Suppliers Group Trigger List and Dual-Use List, **or equipment, material, or technology used in the research, design, development, testing, or production of nuclear or other weapons** [emphasis added]." Officials from Sandia, INTEL, and the Department have acknowledged that the Paragon could still be useful in a weapons program. For example, the Department's Deputy Assistant Secretary for Research, Development and Simulation within the Office of Defense Programs said that such a computer could be highly valuable to a military program. He said that, upon hearing that the Paragon had been sold, his primary concern was national security. He said that he felt it was a "…huge national security risk to sell this computer." He said that he was concerned because Sandia was looking at the sale as an export control issue, and no one was looking at it from the standpoint of national security.

Sandia's High Risk Property Control Process

The Department's Property Management Regulations require an evaluation of items of high risk property for risks to the national security and nuclear non-proliferation objectives of the Government. However, Sandia's Personal Property Management Process Manual under RP-14, "High Risk Property Control," and the associated Sandia High Risk Property Home Page, do not address the evaluation of high risk property for such risks.[4]

Sandia's Property Administrator said that, at the time of the Paragon sale, the emphasis for high risk property was on weapons and weapon components. He said that Stockkeepers in the Reapplication yard had been through a non-proliferation class which made them good at identifying weapons components, and that property personnel had received some training on nuclear weapons and weapons components. He said that, prior to the Paragon, the emphasis on computing equipment as high risk property was very minimal.

[4] Sandia's process for the management of high risk property is part of Sandia's Property Management System that was approved by the Albuquerque Operations Office in April 1998.

Sanitization of Computer Disks Prior to the Sale of the Paragon

Sandia sold the Paragon with approximately 130 “unclassified” data storage disks that were not sanitized before the Paragon was acquired by EHI. The Department’s Property Management Regulation, 41 CFR § 109-43.307-53, “Automatic data processing equipment (ADPE),” requires that all automatic data processing equipment be sanitized before being transferred into an excess status to ensure that all data, information, and software has been removed from the equipment.

However, the Acting Manager, Property Management and Reapplication Organization, acknowledged that the Paragon “unclassified” disks were not sanitized. The Acting Manager said that to further sanitize the system in the traditional sense would have effectively rendered the Paragon worthless except for scrap or parts. Other Sandia personnel told us that the Paragon was sold as an operating system in order to maximize the return on Sandia’s original investment in this property.

Process for Assuring That No Classified Information Was Contained on the “Unclassified” Disks

Sandia maintained a process during the operation of the Paragon that they believed assured that no classified information was contained on the “unclassified” disks. A Technical Staff Member said that the Paragon had two separate sides: an unclassified side that could be accessed via the internet by many different authorized users; and, a classified side that was only accessible to individuals who had the access code and a “need to know.” The Technical Staff Member said that the computer had triple redundant security procedures to prevent classified information from being stored on the “unclassified disks.” He said that Paragon’s classified disks were removed and degaussed by Sandia’s Central Site Operations staff.[5] An INTEL employee who worked with the Paragon identified 42 “classified” disks, 15 tapes, and two floppy disks that were removed from the system, and “degaussed” in order to remove all classified information.

However, while there is currently no evidence that the “unclassified” disks contained classified information relating to Sandia’s classified operations of the Paragon, the process for excessing the Paragon did not provide assurance that there was no classified, sensitive unclassified, or export controlled information on the “unclassified" disks. Specifically, Sandia did not know the exact nature of the information contained on the “unclassified” disks at the time the Paragon was sold. In fact, no one at Sandia made any attempt to determine exactly what information was on

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[5] Degaussing is a process whereby the magnetic field is removed or neutralized. At Sandia, the degaussing process involves the use of a National Security Agency (NSA) certified machine that interrupts the data contained in the media.

the "unclassified" disks prior to the sale. The Department removed some of the "unclassified" disks from the Paragon's storage location in Livermore, California, and attempted to read the information stored on these disks in order to determine if there was any classified, sensitive unclassified, or export controlled information on them. However, they were unable to retrieve interpretable data.

Reutilization Screening

Sandia sold the Paragon before it completed the required reutilization screening. The Department's Office of Procurement and Assistance Management requires a total of 36 days for screening within the Department and with other Federal agencies. Specifically, a 15-day period is required to allow the Department an opportunity to redistribute the property internally. If no organization within the Department requests the property, Federal Property Management Regulations, Temporary Regulations H-29, requires that the property be offered to other Federal agencies for a period of 21 calendar days.

Sandia entered the Paragon into the Department's Reportable Excess Automated Property System (REAPS) on September 10, 1998. Under the current guidelines, this would have made the Paragon surplus property eligible for sale on October 16, 1998.[6] However, the Request for Bids for the Paragon was issued on September 16, 1998, and EHI's bid was accepted on September 29, 1998. Sandia's Property Administrator said that, by the time the Paragon was acquired by EHI (October 27, 1998), the screening period had expired. However, he acknowledged that there could have been an issue if another Federal agency had requested the Paragon after Sandia had sold it.

Sandia's Procedures for the Sale of Excess Property

The Paragon was sold under Sandia's "excess" property sales process. However, Sandia's approved Property Management System did not contain any written procedures for the sale of excess property. Sandia's approved Property Management System includes their Personal Property Management Process Manual, but this manual only includes written procedures for "Auction Sales."

Sandia's Property Administrator said that, in the fall of 1997, the issue was raised that there were brokers that could sell excess property items for more than the Property Management and Reapplication organization was getting from auction sales. He said that Sandia initially used a contractor that conducted excess sales, but terminated the contract and began selling excess property on

[6] This date is calculated by considering the 15-day screening period within the Department and the 21-day screening period for other Federal agencies.

their own. The Property Administrator said that, at the time the Paragon was sold, Sandia did not have any written excess sales procedures that had been approved by the Albuquerque Operations Office. He said that they are in the process of developing their written excess sales procedures, and that a draft of these procedures dated May 6, 1999, has been given to the Albuquerque Operations Office for review and approval. The Property Administrator said that the Department was aware of Sandia's excess sales program, and that they received encouragement from the Department to conduct excess sales.

Sandia's Adherence to Applicable Export Control Requirements

The Acting Manager of the Sandia Property Management and Reapplication Organization stated that all regulations, guidelines and processes pertaining to export control were adhered to in the sale of the Paragon. In a July 31, 1999, self-assessment "Memo of Record Regarding Paragon Sale," the Acting Manager stated that an export control review was performed, and that the transfer of the Paragon was made within the United States and included export control guidance. She also stated that the transfer was made to a "US Person" (a company legally incorporated in California).

According to the Sandia Export Control Coordinator, Sandia's export control review contained two elements. The Export Control Coordinator said that he looked at a list that was included under the Export Administration Regulations to determine if the owner of EHI was someone that had been observed or caught re-exporting or illegally diverting export controlled items. This list, published in the Federal Register and included on the Denied Persons List, identifies individuals who were denied export privileges. The Export Control Coordinator said that he also looked at a second list, prepared by the Department of Treasury, which identifies certain countries and groups to determine if EHI was on the list of organizations and individuals that Sandia should not be doing business with. The Export Control Coordinator told us that he did not find EHI or its CEO on either list.

The Paragon was determined to be export controlled by the Property Administrator because it operated at a speed of 190,000 MTOPS, considerably above Commerce's export limit of 2,000 MTOPS in effect at the time of the Paragon sale to EHI.[7] The Department's Property Management Regulations, 41 CFR subpart 109-45.3, "Sale of Personal Property," at 41 C.F.R. § 109-45.301-51, requires an export/import clause on all sales invitations for bid. However, Sandia failed to include any export/import clause on the

[7] This determination was made as a result of the Property Administrator's inquiry concerning whether a supercomputer should be considered high risk, and not as a result of any export control review.

sales invitation for bid. As a result, EHI was not notified before the sale that export restrictions were a consideration.

In her July 31, 1999, self-assessment, the Acting Manager of the Sandia Property Management and Reapplication Organization stated that the Department's Property Management Regulations required the inclusion of an export notice in "the invitation to bid," and that this "…clearly was an oversight on the part of this organization." She stated that this "…minor deviation is rendered substantially less serious as a result of [the Property Administrator] having provided the export control disclosure to [the CEO of EHI] when he took possession of the equipment." The Acting Manager was referring to inclusion of the following clause on the Paragon shipping document:

> "ALL COMMODITIES MAY BE SUBJECT TO EXPORT CONTROLS UNDER THE CODE OF FEDERAL REGULATIONS, TITLES L0, [sic] 15, 22 & 31. ANY EXPORT OF THESE COMMODITIES CONTRARY TO U.S. LAW IS PROHIBITED. FOR ASSISTANCE CALL THE U.S. DEPARTMENT OF COMMERCE, BUREAU OF EXPORT ADMINISTRATION. THE INFORMATION IN THIS PARAGRAPH REGARDING EXPORT REQUIREMENTS MUST ACCOMPANY ANY TRANSFER/SALE OF THESE COMMODITIES."

We were told that Sandia places this clause on all shipping documents as a matter of routine. However, the use of this export clause as part of the sale of the Paragon was not consistent with the requirements of the Department's Property Management Regulations. Specifically, 41 CFR § 109-1.5303 (b) (6) requires a prescribed "Export Restriction Notice" for the transfer, sale, or other offerings of high risk personal property.

Since Sandia did not consider the Paragon to be high risk at the time of sale, Sandia did not use the required high risk "Export Restriction Notice" as required by the Department's Property Management Regulations. Notably missing in any documents relating to the sale of the Paragon was (1) any reference to the Espionage Act[8] and prohibitions on the making of false statements and concealment of any material information regarding use or disposition, export or reexport of the property, and (2) a direct statement that "The use, disposition, export and reexport of this

[8] The citation for the Espionage Act is 18 U.S.C. § 792 *et seq.*

property **are** [emphasis added] subject to all applicable U.S. laws and regulations."

Deemed Exports

The Export Administration Regulations (EAR), issued by the Department of Commerce, state that a deemed export is any release to a foreign national of technology or source code subject to the EAR. Such release is deemed to be an export to the home country or countries of the foreign national. In her self-assessment, the Acting Manager of the Property Management and Reapplication Organization stated that Sandia adhered to all regulations, guidelines and processes pertaining to high risk and export control, the Department's Guidelines on Export Control/Non-Proliferation, and the EAR.

In July 1999, Sandia requested that an outside law firm provide them with advice concerning U.S. export control laws as they applied to the sale. On July 23, 1999, this law firm opined that there are only two ways that a purely domestic U.S. transaction might be subject to the EAR. One is where a U.S. item is sold domestically with "knowledge" that it was to be illegally exported. The other is where technology or software source code is released to a foreign national in the United States. Sandia officials said that they had no knowledge, prior to the sale, that the CEO of EHI had any intentions of exporting the Paragon to the People's Republic of China. According to the law firm, absent Sandia's "knowledge" that an item was to be illegally exported, there would be no violation of this provision in a purely domestic U.S. transaction.

The law firm also stated that the mere inspection of controlled equipment might not convey licensable technology, in which case "no deemed export would have occurred." They also stated that "a release of software can be considered a deemed export." However, they noted that "the deemed export rule only applies to source code software and excludes object code software." The law firm stated that, provided the software sold with the Paragon was object code, the release of the object code software to the CEO of EHI in the United States "could not be considered a deemed export of software and therefore would not raise the possibility of a deemed export violation of the EAR."

However, EHI may have had the opportunity to do more than merely inspect controlled equipment. The Paragon was sold to EHI with 34 manuals, guides, and notes relating to the operation and maintenance of the Sandia Paragon system that were not reviewed for export control considerations prior to the sale. These included items such as a Hardware Maintenance Manual; a

Hardware Installation Manual; a High-Performance Parallel Interface Manual; a System Cabling Guide; and a Paragon OSF/1 Operating System-Programmer's Reference.

It is not clear if these manuals, guides, and notes contain any export controlled information that would result in a deemed export violation, or if the inspection of the Paragon parts would constitute a release of technology. To address these issues, the Department has sent relevant material to the Department of Commerce's Office of Export Enforcement for their review.

Approval for the Sale of the Paragon Supercomputer

As mentioned earlier, the Paragon was sold under Sandia's "excess" property sales process. In the fall of 1997, the Director of the Sandia Computation, Computers, and Math Center accepted a recommendation from his organization to excess the Paragon supercomputer. He stated that reasons for excessing the Paragon were: (1) Sandia had recently purchased another supercomputer 15 times more powerful than the Paragon; (2) Sandia had determined that maintaining and operating the Paragon would have cost the laboratory close to $3 million; and, that (3) there were reliability problems associated with the Paragon, so that nuclear weapons calculations could not be done.

In June 1998, Sandia's Property Management and Reapplication Organization assisted the Computation, Computers, and Math Center in an attempt to sell the Paragon. The Paragon was placed for bid under Property Management Regulations controlling "ULITIZATION AND DISPOSAL OF PERSONAL PROPERTY PURSUANT TO EXCHANGE/SALE AUTHORITY," 41 CFR part 101-46. On July 17, 1998, Property Management and Reapplication received one bid of $2,550 from Century Computer Sales. On August 5, 1998, the decision was made jointly between Property Management and Reapplication and the Computation, Computers, and Math Center to excess the Paragon. On August 6, 1998, Property Management and Reapplication formally rejected the bid.

On August 13, 1998, Property Management and Reapplication accepted the Paragon into Sandia's excess disposal process. The Property Administrator said that he, in consultation with the Manager of the Computational Physics Research and Development Department, decided to make a second attempt to sell the supercomputer. On September 16, 1998, the Paragon was placed for bid a second time under the Department's Property Management Regulations regarding Sale, Abandonment, and Destruction of Personal Property. On September 25, 1998, Sandia received a bid of $30,888 from EHI. On September 29, 1998, Sandia accepted EHI's bid. Title to the Paragon was transferred to EHI on October 26, 1998.

We found no evidence that any Department Headquarters or Albuquerque Operations Office official approved the sale of the Paragon or even knew that the Paragon was being sold in September 1998. Albuquerque Operations Office property management officials said that they did not become aware of the sale until concerns were raised in July 1999. They said that they would not routinely be involved in the sale of individual pieces of excess property. Kirtland Area Office personnel stated that they first found out about the sale of the Paragon on, or about, July 14, 1999, and that Department headquarters personnel became involved during the same time frame.

Likewise, we found no evidence that any senior level Sandia official approved the sale of the Paragon or knew that it was being sold at that time. The Sandia Senior Vice President for National Security and Arms Control said that, when he managed Sandia's National Security Programs, no one mentioned to him that the Paragon was to be sold. He said that he first learned of the sale after concerns were raised that the Paragon was sold to a Chinese national. Additional comments from the Sandia Senior Vice President are included in the "Observations and Conclusions" section of this report.

The Senior Vice President said that he believed there should have been some discussion on what to do with the Paragon due to its original cost and the purpose for which it was originally acquired by Sandia. He said that the policy for excessing property should include guidelines for the exercise of management judgement before property, such as a Paragon supercomputer, is sold.

Actions Taken by Sandia to Address Concerns After the Sale of the Paragon

Sandia did not take any action in December 1998 when Sandia personnel first learned from INTEL of concerns that EHI may have had intentions of providing Paragon parts to the People's Republic of China. Sandia treated these concerns as "unsupported speculation" insufficient to cause the matter to be brought to the attention of Sandia's export control or counterintelligence offices. Then in June 1999, the concerns resurfaced, but were again not reported to counterintelligence.

As a result, the Paragon remained in the possession of EHI from December 1998 until July 1999 when the media raised concerns about the sale. At this point in time, Sandia learned that a Chinese national was the CEO of EHI, and Sandia, in coordination with Department officials, then took action. The Paragon was located, its storage location was put under surveillance, and negotiations were initiated to buy it back. On July 21, 1999, the Paragon was re-purchased from EHI for $88,888.88. The Paragon is currently in storage at Sandia's facility in Livermore, California.

Appendix II contains further details on the Department's and Sandia's actions between December 1998 and July 1999 to address concerns about the sale of the Paragon, including the issue of selling the Paragon to a Chinese national. Appendix II contains Sandia's statement that it would have been a violation of the Civil Rights Act of 1970 to inquire about the nationality of the CEO of a U.S. Corporation as a condition of sale.

Recommendations

We recommend that the Manager, Albuquerque Operations Office, direct that the following actions be taken by the Albuquerque Operations Office:

1. Direct the Property Management and Administrative Services Division to conduct a thorough review of Sandia's High Risk Personal Property Control Process and their Excess Sales Process. Require Sandia to resubmit their written procedures for approval after the necessary revisions are made to assure full compliance with the provisions of the Department's Property Management Regulations.

2. Place a moratorium on Sandia's "Excess Sales or Sales-In-Lieu-Of-Trade-In" until written procedures have been approved.

We recommend that the Manager, Albuquerque Operations Office, direct that the following actions be taken by Sandia:

3. Direct Sandia to revise their High Risk Property Control Process guidelines and include specific language that addresses export controlled property and proliferation sensitive property, and submit this revision to the Albuquerque Operations Office for approval.

4. Direct Sandia to develop formal procedures in their High Risk Property Control Process for the evaluation of high risk property for risks to national security and nuclear non-proliferation, and submit this revision to the Albuquerque Operations Office for approval.

5. Direct Sandia to expand their consideration of high risk property beyond the more commonly identified items of high risk personal property such as weapons and weapons components.

6. Direct Sandia to conduct refresher training for all property coordinators on the types of personal property that could potentially be considered high risk, and on the process for evaluating any risks to national security and nuclear non-proliferation.

7. Direct Sandia to comply with all the requirements of the Department's Property Management Regulations regarding the sanitizing of computer disks, and require Sandia to seek an exemption for any deviation from these requirements.

8. Direct Sandia to use the export notice required by the Department's Property Management Regulations during the transfer or sale of high risk personal property.

9. Direct Sandia to include the required export/import clause in all sales invitations for bid.

10. Direct Sandia to review all high risk personal property and associated materials for any deemed export concerns prior to sale or transfer.

11. In coordination with the Albuquerque Operations Office, direct Sandia to develop policy that includes senior Sandia and Department management in the disposition decisions for excess high risk property.

12. Direct Sandia to comply with the required reutilization screening period established by the Property Management Regulations.

13. Direct Sandia to re-emphasize to all Sandia personnel during regularly scheduled security training that any concerns relating to the inappropriate disposition of high risk property, including export controlled property, need to be brought immediately to the attention of Sandia's export control and counterintelligence offices.

We recommend that the General Counsel:

14. Issue a legal opinion on whether Department contractors may legally inquire as to possible foreign ownership of companies incorporated in the United States during the process of selling excess personal property, and whether Department contractors may refuse to sell excess property to a particular company based on the foreign ownership.

Management Reaction

The Assistant Manager for Management and Administration, Albuquerque Operations Office provided a response to the draft report on December 10, 1999, and concurred or partially concurred with recommendations 1 through 13. The Assistant Manager stated that the draft report, in several instances, duplicated recommendations provided by the DOE HQ Incident Review Team (IRT) in their report on the sale of the Paragon dated September 23, 1999. The Assistant Manager suggested that, in order to minimize duplicative work by DOE staff, the Office of the

Inspector General (OIG) simply refer to the IRT report and recommendations.

The Office of General Counsel provided a response on December 15, 1999, and concurred with recommendation 14.

The Director for the Office of Procurement and Assistance Management provided a response on December 10, 1999. The Director stated that his office concurred with the report's recommendations. However, the Director took exception with the OIG conclusion that the "high risk assessment performed by Sandia was not consistent with the Department's Property Management Regulations."

Inspector Comments

We reviewed the Assistant Manager's suggestion that the OIG refer to the IRT recommendations in situations where the Assistant Manager believed that there was duplication. As a result of this review, we determined that the actions recommended in our report are best served by retaining them as separate and distinct from the IRT. We have reached this position for the following reason. The Assistant Manager indicated that OIG recommendations 1, 3, 4, and 6 are also addressed by the IRT recommendation 2. OIG recommendations 1, 3, 4, and 6 address several weaknesses in Sandia's High Risk Property Control Process, including the failure of Sandia's written procedures to address critical elements of the Department's High Risk Property Management Procedures. However, IRT recommendation 2 only addresses the establishment of formal procedures to ensure that functional experts contribute to transfer and sales decisions, and does not mention Sandia's High Risk Property Control Process or the Department's High Risk Property Management Procedures. In addition, the Assistant Manager indicated that OIG recommendation 7 was addressed by the IRT recommendation 5. However, IRT recommendation 5, while addressing the same issue as OIG recommendation 7, requires Sandia to comply with DOE PMR Part 109-45.307-53, which does not exist. The correct citations are 109-45.309-51 and 109-43.307-53.

With regard to the exception taken by the Director for the Office of Procurement and Assistance Management to the OIG conclusion on Sandia's high risk assessment, our report remains unchanged. The Director's position is not supportable based on the Department's criteria for high risk property and the application of that criteria to the Paragon. In his response, the Director stated that the Paragon would not meet the high risk criteria for "Nuclear weapon component or weapon-like component." However, the

Director did not address the OIG position that the Paragon met the high risk criteria under the definition of “Export controlled property,” and could arguably have met the high risk criteria under the definition of “Proliferation-sensitive property.”

Appendix I

Scope and Methodology

We reviewed the concerns surrounding the excessing, sale, and repurchase of the Paragon supercomputer by Sandia National Laboratories. In reviewing these concerns, we evaluated:

- The process used by Sandia to excess and sell the Paragon.
- The process used to approve the sale of the Paragon.
- The applicable property management requirements associated with the excessing and sale of the Paragon.
- The applicable export control requirements associated with the sale of the Paragon.
- The level of management that was involved in the approval of the sale of the Paragon both within the Department and at Sandia.
- The appropriateness of the actions taken by Sandia when concerns regarding the Paragon were raised.

As part of our review, we interviewed Sandia National Laboratories officials involved in the excessing, sale and repurchase of the Paragon supercomputer. We also interviewed Department of Energy officials at the Albuquerque Operations Office and Department Headquarters. In addition, we reviewed documentation relating to the excessing, sale and re-purchase of the Paragon, including: 1) Sandia electronic mail messages involving the excessing, sale and repurchase of the Paragon; 2) Reclamation's file on the Paragon supercomputer which contained documentation on the excessing and sale of the Paragon; 3) Federal Property Management Regulations on the disposal of Property and the responsibilities of the holding agencies; 4) Code of Federal Regulations on DOE property management; 5) United States Code, Title 42, Chapter 21, subchapter I; 6) DOE and Sandia Policy on sanitizing magnetic media; 7) DOE regulations on disposal of computer media; 8) Sandia's Personal Property Management Process Manual; 9) Proposed changes to the Sandia Personal Property Management Process Manual for the sale of excess property; 10) Relevant Export Administration Regulations; 11) The Chief Information Officer's notes on the sale of the Paragon supercomputer; 12) Property Management and Reapplication's self-assessment; 13) An outside law firm's advice to Sandia on the sale of the Paragon supercomputer; and 14) DOE's Energy Asset Disposal System user guide. This inspection was conducted between July and October 1999.

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

ADDITIONAL CONCERNS REGARDING THE SALE OF THE PARAGON

According to Sandia's Chief Information Officer, on November 7, 1998, Sandia personnel directed the CEO of EHI to INTEL after he had requested additional parts for the Paragon. The Chief Information Officer said that in November or December of 1998, INTEL personnel told a Sandia employee that they were suspicious about the CEO of EHI and speculated that the computer might already be in China.

The INTEL Manager for Supercomputers said that he was first contacted by the CEO of EHI in July 1998, prior to the sale of the Paragon. He said that the CEO requested parts for a Paragon customer. He said that INTEL asked the CEO what the parts were going to be used for, and the serial number of the system for which the parts were intended. He said that the CEO of EHI gave incorrect serial numbers and would not identify the Paragon system for which the parts were intended. The INTEL Manager said that he already knew about two Paragon systems that had been sold to China.[9] He said that he asked the CEO if the parts were intended for use in these two systems; and the CEO confirmed that the parts would be used for these two systems. However, the INTEL Manager said that the requested parts would not fit either of the systems that had been sold to China. He said that in August 1998, INTEL decided to disengage from any further discussion with the CEO of EHI because he believed that the CEO was not being truthful about the requested parts.

December 1998 Concerns

The INTEL Manager for Supercomputers said that he had discussions with a Sandia Technical Staff member on the sale of the Sandia Paragon after the sale had taken place. The INTEL Manager believed that the CEO of EHI who had contacted him for the Paragon parts in July 1998 was the same individual who had purchased the Sandia Paragon. The INTEL Manager said that he told the Technical Staff Member that he felt the CEO of EHI was working with the Chinese, and that the CEO had not been truthful with INTEL regarding the requests for Paragon parts. On December 7, 1998, the INTEL Manager, at the request of the Technical Staff Member, sent an E-mail message that conveyed his concerns about EHI. The E-mail message, which was addressed to the Technical Staff Member, stated that "The name of the company that has been trying to get nodes, etc. from us is EHI Group USA Inc." and that "… our contact has been [the CEO of EHI]." This message went on to state that the CEO

[9] According to the Sandia Chief Information Officer, a Sandia Technical Staff Member affirmed that the Department of Commerce, in the 1994-1995 time frame, had approved the export of two Paragon computers to the People's Republic of China for seismic analysis related to oil exploration.

"… has not been truthful with us saying that he was getting parts for a Paragon customer…," and that while "… we never got any confirmation, the feeling was the parts were headed to China."

The Sandia Technical Staff Member forwarded this E-mail message to the Property Administrator on the same day it was received. However, no action was taken to address INTEL's concerns. The Sandia Chief Information Officer said that Sandia did not have reason to suspect involvement by the People's Republic of China at the time of the sale. He said that it would have been a violation of the Civil Rights Act of 1970 to inquire about the nationality of the CEO of a U.S. Corporation, and then, on that basis, refuse to sell the Paragon after bids were received.[10] He said that INTEL's "conjecture" to the Technical Staff Member was "unsupported speculation." He said that, since nothing was publicly known then about China's actions against National Laboratories, the "unsupported speculation" was insufficient to cause the Property Administrator or the Technical Staff Member to bring this matter to the attention of Sandia's export control or counterintelligence offices.

July 1999 Concerns

According to Sandia's Chief Information Officer (CIO), following a two day security stand down on June 21 and 22, 1999, the same Sandia employee again discussed the sale of the Paragon to EHI and INTEL's allegations (that the computer had been sent to China) with the Property Administrator. The matter was reported to the Export/Import Team Lead. The Team Lead checked the list of names of individuals to whom export controlled items should not be sold, and considered providing the information received from the Sandia employee to counterintelligence. However, he went on vacation without contacting counterintelligence.

Concerns were raised by the media in mid-July about Sandia's sale of a supercomputer. On July 13, 1999, a reporter from KOAT-TV in Albuquerque contacted the Sandia public relations organization. He said that a source told him that Sandia had sold a Cray Supercomputer to the People's Republic of China. The Sandia Public Relations Office informed him that parts for a Paragon supercomputer were sold to an U.S. company in compliance with the requirements governing the sale of export-controlled property.

[10] 42 United States Code section 1981, states that all persons within the jurisdiction of the United States shall have the same right in every State and Territory to make and enforce contracts. Legal Counsel for Sandia stated that he was not sure if Sandia could have refused to contract with the CEO of EHI. He said that decisions could not be based on the color of skin or the ability to speak English.

On July 14, 1999, Sandia's CIO discussed the sale of the Paragon with Sandia's Senior Vice President for the Nuclear Weapons Program, the Sandia Senior Vice President for National Security and Arms Control, and the Department's Deputy Assistant Secretary for Research, Development and Simulation. The Sandia CIO was appointed Sandia's point-of-contact on the matter. On July 15, 1999, the Department's Deputy Assistant Secretary for Research, Development and Simulation informed Sandia that the Under Secretary for DOE had assigned the Director of the Department's International Policy and Analysis Division as the Action Officer.

On July 14, 1999, Sandia's Property Administrator contacted the CEO of EHI as a "quality check on the sale of export controlled property." During this conversation, Sandia discovered that the CEO of EHI was a citizen of the People's Republic of China. The Property Administrator requested a copy of the CEO's "green card." The CEO provided Sandia an Immigration and Naturalization Service "Notice of Action" approving EHI Group's petition for a non-immigrant worker, Class L1A.

The Sandia CIO said that on July 15, 1999, Sandia contacted INTEL to get information on the number of Paragon computers that had been sold. The CIO said that an INTEL employee told Sandia that the CEO of EHI had contacted INTEL frequently to ask for parts. The CIO said that during one such conversation, the CEO said he was trying to "prepare it for a customer in the People's Republic of China." However, the INTEL employee said that he never said, nor implied, to Sandia personnel that the Sandia Paragon system purchased by the CEO was going to China. The INTEL Manager for Supercomputers said that at no time did he, or the other INTEL employee, make any statement that they felt the Sandia Paragon system was going to China.

The Sandia Senior Vice President for National Security and Arms Control stated that he had a discussion with the Assistant Secretary for Defense Programs and the Deputy Assistant Secretary for Research and Development within Defense Programs. The Senior Vice President said that he made the suggestion that the computer be repurchased. He said the Deputy Assistant Secretary agreed with him and confirmed the wisdom of repurchasing the Paragon. The CIO stated that he followed his initial direction from the Vice President to repurchase the Paragon, and that he received additional direction from the Department's Action Officer on this matter.

On July 21, 1999, the CIO repurchased the Paragon supercomputer from EHI. According to the CIO, one of the considerations in arriving at the negotiated re-purchase price was the estimation of a price at which the CEO of EHI could preserve “face” with his Joint-Venture backers in China. In a document titled “EHI-USA Inc Business Analysis,” the CIO wrote “Assume Chinese’s Joint Venture backing him wants at least 18% return on their investment, plus equity position to justify the risk since stock market mutual fund returns of 18%.”

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