



**OFFICE OF INSPECTOR GENERAL**

U.S. Department of Energy

# SPECIAL REPORT

DOE-OIG-19-07

November 2018

**MANAGEMENT CHALLENGES AT THE  
DEPARTMENT OF ENERGY -  
FISCAL YEAR 2019**



**Department of Energy**  
Washington, DC 20585

November 15, 2018

MEMORANDUM FOR THE SECRETARY

*April Stephenson*

FROM: April G. Stephenson  
Acting Inspector General

SUBJECT: INFORMATION: Special Report on “Management Challenges at the Department of Energy – Fiscal Year 2019”

INTRODUCTION

The Department of Energy’s mission is to ensure America’s security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. The Department’s world-leading science and technology enterprise generates the innovations that fulfill its missions. Through 17 national laboratories, the Department engages in cutting-edge research that expands the frontiers of scientific knowledge, generates new technologies to address the country’s greatest energy challenges, and strengthens national security by maintaining and modernizing the nuclear stockpile. To execute this diverse portfolio, the Department receives an annual appropriation of approximately \$31 billion, employs approximately 112,000 Federal and contractor personnel, and manages assets valued at \$188.5 billion. The Office of Inspector General annually identifies what it considers to be the most significant management challenges facing the Department. The Office of Inspector General’s goal is to focus attention on significant issues with the objective of working with Department managers to enhance the effectiveness of agency programs and operations.

MANAGEMENT CHALLENGES

Based on the results of our body of work over the past year, the management challenges list for fiscal year 2019 remains largely consistent with that of the previous year. These challenges include:

- Contract Oversight
  - Contractor Management
  - Subcontract Management
- Cybersecurity
- Environmental Cleanup
- Nuclear Waste Disposal
- Safeguards and Security
- Stockpile Stewardship
- Infrastructure Modernization

## WATCH LIST

The Office of Inspector General also prepared an annual Watch List, which incorporates other issues that do not meet the threshold of a management challenge, yet in our view, warrant special attention by Department officials. For fiscal year 2019, the Watch List includes the Department's Employee Concerns Program, the Power Marketing Administrations, Human Capital Management, the Loan Guarantee Program, and Worker and Community Safety.

## SUMMARY

Attached is a brief synopsis of each management challenge, accompanied by summaries of work conducted that informed our decision process. A complete list of reports can be found at <https://energy.gov/ig/calendar-year-reports>, and press releases may be found at <https://energy.gov/ig/listings/media-releases>.

The management challenges process is an important tool that assists us in focusing our finite resources on what we consider to be the Department's most significant risks and vulnerabilities. We look forward to working with you and your leadership team in addressing and resolving these issues.

## OTHER MATTER

Building upon the process for developing the annual Management Challenges report, we applied a similar process to the Hanford Site and reported the results under a separate report. Due to the complex nature of operations at the Hanford Site and the significant funding involved, as well as the trend of Office of Inspector General findings involving mismanagement, weak internal controls, and fraud committed by contractors and subcontractors, Special Report *Compilation of Challenges and Previously Reported Key Findings at the Hanford Site for Fiscal Years 2012 – 2018* (DOE-OIG-19-04, November 2018), presented a consolidated body of work representing Office of Inspector General findings from fiscal years (FYs) 2012-2018. The Special Report highlights management challenges and key findings we have identified in our previous audits, inspections, and investigations related to the Hanford Site.

### Attachment

cc: Deputy Secretary  
Chief of Staff  
Under Secretary of Energy  
Under Secretary for Science  
Administrator, National Nuclear Security Administration  
Chief Information Officer  
Chief Financial Officer

## **Contract Oversight**

The Department of Energy is the largest civilian contracting agency in the Federal Government and spends approximately 90 percent of its annual budget on contracts to operate its scientific laboratories, engineering and production facilities, and environmental restoration sites and to acquire capital assets. As of September 2018, the Department managed 14,455 contracts valued at more than \$25 billion. Additionally, according to the Office of Acquisition Management, the Department's management and operating contractors reported over \$375 million in subcontracts during fiscal year (FY) 2018.

Oversight of the Department's contracts is necessary to ensure that contractors meet the established requirements, from contract award through completion or termination. Contract oversight starts with the development of a clear, concise performance based statement of work and a plan that effectively measures the contractor's performance. The specific nature and extent of oversight varies by contract and can range from simple acceptance of delivery and payment to extensive involvement by program, audit, and procurement officials. The goal of effective contract oversight is to ensure that the Government receives procured products and services and that the public interest is effectively protected.

The Department has been challenged, both internally and externally, to improve the efficiency and effectiveness of its contract oversight process. Since 1990, the Government Accountability Office has designated the Department's contract management, which included inadequate contract and project oversight, as a high risk area. In addition, our investigative work and referrals to the Office of Inspector General (OIG) Hotline have identified continued vulnerabilities with less than adequate subcontract oversight. Because of these issues and the large number of contracts and subcontracts managed by the Department, we continue to believe that the area of Contract Oversight, which encompasses both Contractor Management and Subcontract Management as sub-components, remains a management challenge.

## **Contractor Management**

As noted in our *Management Challenges at the Department of Energy – Fiscal Year 2018* report (DOE-OIG-18-09, November 2017), the Government Accountability Office previously reported that the Department lacked the capacity to resolve contract and project management problems. It was further reported that the Department had not demonstrated progress toward implementing measures to resolve high-risk areas. The Government Accountability Office did acknowledge that the Department continued to meet the leadership commitment criteria and partially met the criteria for having a corrective action plan. Additionally, the Government Accountability Office acknowledged that the Department had improved its monitoring of the effectiveness of corrective measures.

However, similar to prior years, our FY 2018 work identified numerous issues related to Contractor Management. Specifically, we found issues/weaknesses with project management and oversight resulting in additional incurred costs. Given the number of contracts handled by the Department and the complexity and importance of the Department's numerous multimillion dollar projects, the area of Contractor Management is a significant management challenge.

The following reports and investigative work highlight the need for continued focus by the Department on Contractor Management.

*Decontamination and Decommissioning Activities  
at the Separation Process Research Unit  
March 2018, DOE-OIG-18-27*

The Separations Process Research Unit is a set of inactive radiological facilities located at the Knolls Atomic Power Laboratory in Niskayuna, New York. Constructed in the late 1940s, the Separations Process Research Unit facilities include a former process research building, a waste processing building with an associated waste tank farm, and several interconnecting tunnels. In its September 2007 Action Memorandum, the Department's Office of Environmental Management set forth its plan to decontaminate and remove Separations Process Research Unit buildings and equipment, dispose of the resulting waste and contaminated soil, and return the areas to the Office of Naval Reactors for continuing mission use. In December 2007, the Office of Environmental Management awarded a \$67 million cost-plus-incentive-fee task order to URS Energy & Construction, Inc. to complete the decontamination and decommissioning activities described in the Action Memorandum by November 4, 2011.

Our review found that the Department's management of the Separations Process Research Unit decontamination and decommissioning project was not always effective. Despite the Department's efforts, the project encountered significant challenges that slowed progress and increased the Department's costs. While it had made significant cleanup progress, as of January 2018, URS Energy & Construction, Inc.'s schedule showed that decontamination and decommissioning work most likely would continue into July 2018, nearly 7 years beyond the contract's original target completion date. Additionally, the contract's cost to the Department had increased to approximately \$180 million through January 2018. These contract costs included additional reimbursed costs for work scope determined to be the responsibility of the Department.

Complicating the management of the project was the inability of the Department and contractor to agree upon a baseline after implementing a cost cap in 2011. In addition, we noted that the cost cap lacked effective mechanisms to incentivize schedule performance once the contractor reached the capped amount. Due to the lagging schedule, the Department estimated that it could incur nearly \$18 million in additional direct costs to oversee the project, as compared to the original project baseline.

The full report is available at <https://www.energy.gov/sites/prod/files/2018/03/f49/DOE-OIG-18-27.pdf>.

*Civil Settlement with Department Contractor  
Semiannual Report to Congress October 1, 2017 – March 31, 2018 (DOE-OIG-0074)*

The U.S. Department of Justice entered into a \$15 million settlement agreement with a contractor to several Federal agencies, including the Department of Energy. The settlement resolves civil and administrative monetary claims arising out of the contractor's failure to

comply with immigration laws. The Department of Justice requested the Department of Energy OIG's assistance during this civil matter, which was initiated by a criminal investigation conducted by U.S. Immigration and Customs Enforcement Homeland Security Investigations. The OIG determined that the contractor conducted business, while not in compliance with immigration laws, with multiple Department of Energy entities. The Department of Energy entities included the Western Area Power Administration, Bonneville Power Administration, and Brookhaven National Laboratory. Additionally, the civil investigation identified clauses in Department of Energy contracts that required specific approvals regarding foreign nationals. The \$15 million civil settlement was allocated between the affected Federal agencies, with the Department of Energy recovering \$684,226. This investigation was coordinated with the U.S. Attorney's Office, Eastern District of Pennsylvania.

The full report is available at

[https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018\\_2.pdf](https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018_2.pdf), page 26.

*Management of the Workers' Compensation Program at the Hanford Site  
August 2018, DOE-OIG-18-44*

The Department of Energy uses operating contractors at the Hanford Site to clean up hazardous and radioactive contamination left over from nuclear weapons production activities. The Department is self-insured and is responsible for paying all costs associated with Hanford Site Workers' Compensation claims for work related injuries and illnesses for contractors that are covered by the Memorandum of Understanding between the Department and Washington State's Department of Labor and Industries. The Department's Richland Operations Office has a contract with Penser North America, Inc. to act on the Department's behalf as a third-party administrator to process all claims for employees of Hanford Site operating contractors designated in a Memorandum of Understanding. On behalf of the Department, Penser North America, Inc. makes the initial claim determination and makes a recommendation to allow or deny Workers' Compensation claims to Washington State's Department of Labor and Industries, who has the authority on allowing or denying such claims.

In a letter dated March 8, 2017, U.S. Senators Maria Cantwell and Patty Murray requested that the OIG perform a review of Workers' Compensation issues at the Hanford Site. This request identified several areas of inquiry, including concerns about: possible intimidation of workers who file Workers' Compensation claims; Departmental oversight of the Penser North America, Inc. contract; qualifications of the medical providers for chemical exposure claims; whether Penser North America, Inc. is providing all relevant documentation; and the number of denied claims with chemical exposure as the cause.

We determined that the Department did not have effective processes, procedures, and controls over the Workers' Compensation Program at the Hanford Site. We identified problems with: incomplete documentation packages sent to the State of Washington's Department of Labor and Industries, approximately \$21.8 million in billing and payment discrepancy with the State of Washington's Department of Labor and Industries related to pension benefits costs, questioned costs relating to indemnity claims, and concerns with the letter of credit and payments processes.

Further, we observed issues with communication and trust relating to Workers' Compensation claims at several levels. The challenges associated with communication are exacerbated by a fragmented Hanford Site Workers' Compensation process that workers find confusing. The process involves many players, including the worker, the operating contractors, the union, health advocates, the occupational medical services, the Department, Penser North America, Inc., physicians and medical professionals, attorneys, and the State of Washington's Department of Labor and Industries.

The full report is available at <https://www.energy.gov/sites/prod/files/2018/08/f54/DOE-OIG-18-44.pdf>.

### **Subcontract Management**

As previously noted, the Office of Acquisition Management indicated that the Department's management and operating contractors reported over \$375 million in subcontracts during FY 2018. Many of the contractual provisions that are included in management and operating contracts are required to be flowed down into any subcontracts. However, work conducted during FY 2018 and prior years has indicated that the Department and its contractors had not always provided adequate oversight of subcontracts. For instance, during the past year, the OIG investigated issues of contract and subcontract management and received complaints through the Hotline concerning mismanagement of personnel, including hiring irregularities and time and attendance issues. Given the importance of the Department's subcontracts, this area was identified as a subcomponent of contract oversight in our FY 2018 Management Challenges report and continues to be a challenge area for FY 2019.

The following examples from our investigative work highlight the need for continued focus by the Department on subcontract management.

#### *Guilty Pleas and Sentencings in Small Business Concern Fraud Investigation Semiannual Report to Congress October 1, 2017 – March 31, 2018 (DOE-OIG-0074)*

An individual and his company pleaded guilty and were sentenced in the U.S. District Court for the District of South Carolina to Conspiracy to Defraud the United States. The individual was sentenced to 24 months incarceration, 3 years of supervised release, and a \$100 special assessment. The company was sentenced to 5 years of probation, a \$500,000 fine, and a \$400 special assessment. Additionally, a co-conspirator pleaded guilty to making a False Statement, and three other co-conspirators pleaded guilty to Misprision of a Felony. All of the co-conspirators were sentenced in the U.S. District Court, District of South Carolina to 3 years of probation. Another co-conspirator pleaded guilty to Wire Fraud and is awaiting sentencing. As reported in the September 30, 2016, Semiannual Report to Congress, a 20-count indictment including charges of Conspiracy to Defraud the United States, False Statements, Major Fraud against the Government, Wire Fraud, and Misprision of a Felony was returned against 7 co-conspirators. The investigation determined the defendants conspired to use figurehead small business concerns, meaning they were not controlled by individuals eligible for small business set aside awards, in order to obtain set aside contracts. The set aside contracts included two Department subcontracts and one Department-funded other agency contract.

The full report is available at

[https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018\\_2.pdf](https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018_2.pdf), page 27.

*Japanese Fiber Manufacturer to Pay \$66 Million for Alleged False Claims  
Related to Defective Bullet Proof Vests  
March 2018, Department of Justice Press Release*

Toyobo Co. Ltd. of Japan and its American subsidiary, Toyobo U.S.A. Inc., f/k/a Toyobo America Inc. (collectively, Toyobo), have agreed to pay \$66 million to resolve claims under the False Claims Act that they sold defective Zylon fiber used in bulletproof vests that the United States purchased for Federal, state, local, and tribal law enforcement agencies.

The settlement resolves allegations that between at least 2001 and 2005, Toyobo, the sole manufacturer of Zylon fiber, knew that Zylon degraded quickly in normal heat and humidity, and that this degradation rendered bulletproof vests containing Zylon unfit for use. The United States further alleged that Toyobo nonetheless actively marketed Zylon fiber for bulletproof vests, published misleading degradation data that understated the degradation problem, and when Second Chance Body Armor recalled some of its Zylon-containing vests in late 2003, started a public relations campaign designed to influence other body armor manufacturers to keep selling Zylon-containing vests. According to the United States, Toyobo's actions delayed by several years the Government's efforts to determine the true extent of Zylon degradation. Finally, in August 2005, the National Institute of Justice completed a study of Zylon-containing vests and found that more than 50 percent of used vests could not stop bullets that they had been certified to stop. Thereafter, the National Institute of Justice decertified all Zylon-containing vests.

This settlement is part of a larger investigation undertaken by the Civil Division of the body armor industry's use of Zylon in body armor. The Civil Division previously recovered more than \$66 million from 16 entities involved in the manufacture, distribution, or sale of Zylon vests, including body armor manufacturers, weavers, international trading companies, and five individuals. This settlement brings the Division's overall recoveries to over \$132 million. The United States still has lawsuits pending against Richard Davis, the former chief executive of Second Chance, and Honeywell International, Inc.

This case was handled by the Justice Department's Civil Division, along with the General Services Administration, Office of the Inspector General; the Department of Commerce, Office of Inspector General; the Defense Criminal Investigative Service; the U.S. Army Criminal Investigative Command; the Department of the Treasury, Office of Inspector General for Tax Administration; the Air Force Office of Special Investigations; the Department of Energy, Office of the Inspector General; and the Defense Contracting Audit Agency.

The full press release is available at <https://www.justice.gov/opa/pr/japanese-fiber-manufacturer-pay-66-million-alleged-false-claims-related-defective-bullet>.



*Restitution Imposed in Recovery Act Grand Fraud Investigation  
Semiannual Report to Congress October 1, 2017 – March 31, 2018 (DOE-OIG-0074)*

The president of a green technology startup company that received Department Recovery Act funds was ordered to pay \$663,395 in restitution. As reported in the September 30, 2017 Semiannual Report to Congress, the president and Chief Executive Officer of the green technology startup company were each indicted on five counts of Wire Fraud in the U.S. District Court, Northern District of Illinois. The president pleaded guilty to one count of Wire Fraud and was sentenced to 24 months of incarceration, 1 year of supervised release, and 60 hours of community service. The Chief Executive Officer entered into a Pretrial Diversion Agreement and was ordered to pay a \$10,000 fine, serve 200 hours of community service, and was further ordered to not apply for, or hold, any management, executive, or leadership role in any entity which is the recipient or administrator of grant funding from any governmental entity. The investigation determined the president and Chief Executive Officer of the green technology startup company fraudulently obtained approximately \$1.4 million in Recovery Act grant funds by falsifying vendor and subcontractor payment documents submitted to the City of Chicago, Pennsylvania Department of Environmental Protection, and Bay Area Air Quality Management for installing electric vehicle charging stations in Chicago, Pennsylvania, and California. This was a joint investigation with the Federal Bureau of Investigation and the City of Chicago Office of Inspector General.

The full report is available at

[https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018\\_2.pdf](https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018_2.pdf), page 37.

## Cybersecurity

The Department operates nearly 100 entities across the Nation and depends on information technology systems and networks for essential operations required to accomplish its national security, research and development, and environmental management missions. The systems used to support the Department's various missions face millions of cyber threats each year, ranging from unsophisticated hackers to advanced persistent threats. According to the Office of Management and Budget, Federal agencies reported over 35,000 cyber incidents in FY 2017, which is a 14 percent increase compared to FY 2016. The Office of Management and Budget concluded in the *FY 2017 Federal Information Security Modernization Act of 2014* report that the Department continues to address the gaps that contribute to risk, which included, but were not limited to: outdated cybersecurity policies that do not adequately reflect recent Federal mandates; inconsistent endpoint security controls and vulnerability and configuration management practices; and legacy hardware, software, and systems.

Although the Department made progress in the area of cybersecurity, our annual review of the Unclassified Cybersecurity Program continued to identify deficiencies with the Department's management of the program. For instance, in our FY 2017 review of the *Department's Unclassified Cybersecurity Program* (DOE-OIG-18-01, October 2017), we noted that the Department had made progress remediating weaknesses identified in our FY 2016 evaluation, which resulted in the closure of 13 of 16 prior year deficiencies. However, issues related to

vulnerability management, system integrity of Web applications, and access controls continued to exist. Given the importance and sensitivity of the Department's activities, along with the vast array of data it processes and maintains, protecting cyber assets continues to be a crucial aspect of the Department's overall security posture. As a result of these inherent risks and the sensitivity of much of the Department's work, Department management must continue to emphasize the importance of cybersecurity.

The following reports and investigative work identified weaknesses in the Department's cybersecurity programs.

*The Department of Energy's Unclassified Cybersecurity Program – 2017  
October 2017, DOE-OIG-18-01*

The *Federal Information Security Modernization Act of 2014* requires Federal agencies to develop, implement, and manage agency-wide information security programs. In addition, Federal agencies are required to provide acceptable levels of security for the information and systems that support their operations and assets. In our 2017 review of the Department of Energy's Unclassified Cybersecurity Program, we found that the Department, including the National Nuclear Security Administration (NNSA), had taken a number of actions over the past year to address previously identified weaknesses related to its cybersecurity program. In particular, programs and sites made progress remediating weaknesses identified in our FY 2016 evaluation, which resulted in the closure of 13 of 16 prior year weaknesses. For instance, the Department reduced the number of vulnerability management findings from nine in FY 2016 to five in FY 2017. While these actions were positive, our current evaluation found that the types of weaknesses identified in prior years, including issues related to vulnerability management, system integrity of Web applications, and access controls, continue to exist.

The weaknesses identified occurred, in part, because Department officials had not fully developed and/or implemented policies and procedures related to the issues identified in our report. For instance, similar to previous years, we found that current configuration and security patch management processes had not ensured that software remained up-to-date and secure. In addition, the Department had not always implemented effective performance monitoring and risk management programs. For example, we continued to identify concerns with the Department's implementation of plans of action and milestones and the effective use of corrective action plans to address identified weaknesses. We also noted that security testing at several locations reviewed was not fully supportive of an effective continuous monitoring cybersecurity program. The OIG has continuously recognized cybersecurity as a management challenge area for the Department, emphasizing the critical need to enhance the Department's overall security posture.

The full report is available at <https://www.energy.gov/sites/prod/files/2017/10/f37/DOE-OIG-18-01.pdf>.

*Department Contractor Disallows Cost in Spear-Phishing Investigation  
Semiannual Report to Congress October 1, 2017 – March 31, 2018 (DOE-OIG-0074)*

In response to an Investigative Report to Management, the Pacific Northwest Site Office disallowed \$430,167 in costs associated with a Pacific Northwest National Laboratory fraudulent payment to a false contractor. The investigation determined that Pacific Northwest National Laboratory was targeted in a spear-phishing scheme which resulted in a Pacific Northwest National Laboratory contractor's legitimate bank routing information being changed to that of a fraudulent account. This resulted in an improper payment by Pacific Northwest National Laboratory of \$530,000 to the fraudulent account.

The full report is available at

[https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018\\_2.pdf](https://www.energy.gov/sites/prod/files/2018/06/f52/Semiannual%20Report-%20Oct%202017-March%202018_2.pdf), page 35.

*Search Warrant Served in Network Intrusion Investigation  
January 2018*

On January 18, 2018, a search warrant was served on a server provider based in Ann Arbor, Michigan with datacenters in the United States. To date, the investigation has determined that a series of phishing emails were sent in October 2017 to over 1,000 Brookhaven National Laboratory email accounts. One Brookhaven National Laboratory user clicked on what appeared to be an Information Technology Help Desk hyperlink within the email and entered their Brookhaven National Laboratory credential after being presented with a fraudulent Outlook Web Access login webpage. Malicious actor(s) then utilized the obtained Brookhaven National Laboratory credential to login to the compromised Brookhaven National Laboratory user account and send another phishing email to nearly 1,300 Brookhaven National Laboratory email accounts. Numerous additional Brookhaven National Laboratory accounts were compromised as a result of the second phishing email. The investigation revealed that the fraudulent Outlook Web Access login webpages associated with the phishing emails were stored at the premises owned, maintained, controlled, or operated by the server provider. This was a joint investigation with the Federal Bureau of Investigation.

## **Environmental Cleanup**

The Department is responsible for addressing the Nation's Cold War environmental legacy resulting from five decades of nuclear weapons production and Government-sponsored nuclear energy research. The cleanup operation is the largest in the world and includes 107 sites across the country, encompassing an area equal to the combined size of Rhode Island and Delaware. Fifty years of activities has produced unique and technically complex problems. Specifically, this legacy includes some of the world's most dangerous sites with large amounts of radioactive wastes, spent nuclear fuel, excess plutonium and uranium, thousands of contaminated facilities, and contaminated soil and groundwater.

Since 1989, the Department has spent over \$164 billion to retrieve, treat, and dispose of nuclear and hazardous waste and has completed cleanup at 91 of the 107 sites. In the last 6 years alone,

the Department has spent \$35 billion, primarily to treat and dispose of nuclear and hazardous waste and construct capital asset projects to treat waste. Cleanup activities can last for decades and often require first-of-a-kind solutions. Characterization of legacy waste sites is performed in conjunction with planning and executing cleanup activities, such as deactivating and decommissioning facilities, removing hazardous materials, stabilizing waste streams to prevent additional environmental damage, and restoring the sites to conditions required by legal agreements.

Despite billions spent on environmental cleanup, the Department's environmental liability has roughly doubled from a low of \$176 billion in FY 1997, as reported in the Government Accountability Office's February 2017 *High-Risk Series* report, to the Department's *Fiscal Year 2017 Agency Financial Report* estimate of \$384 billion. The Department is responsible for 83 percent of the Federal Government's approximately \$465 billion FY 2017 reported environmental liability, which is mostly related to nuclear waste cleanup. Half of the Department's environmental liability resides at the Hanford Site in Washington State and the Savannah River Site in South Carolina. Further, in October 2018, the Office of Environmental Management provided a revised estimate increasing the FY 2018 Hanford Site environmental liability by \$82 billion to \$242 billion, further demonstrating the considerable risk of the environment management program.

As our work has illustrated, the Department faces challenges associated with Environmental Cleanup. For example, as discussed in the Contract Management section, *Decontamination and Decommissioning Activities at the Separation Process Research Unit* (DOE-OIG-18-27, March 2018), is applicable to Environmental Cleanup, but is not repeated in this section. Further, while not specific to Environmental Cleanup, our report on the *Management of the Workers' Compensation Program at the Hanford Site* (DOE-OIG-18-44, August 2018) identified issues specific to the Office of Environmental Management. In addition, our recent report on the Well Decommissioning at the Hanford Site, as shown below, further highlights some of the challenges faced by the Department in this area.

*Followup on Well Decommissioning at the Hanford Site  
August 2018, DOE-OIG-18-45*

The goal of the Richland Operations Office Soil and Groundwater Remediation Project is to eliminate the risk of contaminated groundwater reaching the Columbia River using a network of wells to extract contaminants and monitor areas of the Hanford Site. Remediation support activities may include groundwater well installation, well decommissioning, environmental sampling, and well maintenance. CH2M Hill Plateau Remediation Company is the contractor responsible for soil and groundwater remediation activities at the Hanford Site.

Our review determined that the Department effectively decommissioned wells at the Hanford Site. However, we found that the Hanford Environmental Information System, used to manage well information, such as inspections and decommissioning, did not contain all current or relevant information; although, for the 15 wells we reviewed, we found hard-copy documents supporting that well activities had been performed, as appropriate. Additionally, the Well Decommissioning Plan had not been updated since 2008. Specifically, the CH2M Hill Plateau

Remediation Company did not: (1) Enter well inspection dates in the Hanford Environmental Information System database, so the information shown in the Materialized View was not always correct and could not be relied upon; and (2) Update the Well Decommissioning Plan. As a result, the Materialized View did not accurately reflect the current status of well inspections. Documenting inspection results into Hanford Environmental Information System ensures that the Department has the most current information available to promptly identify any wells that are in disrepair and prevent potential pathways for contaminants to reach the groundwater. To its credit, the Department maintained hard-copy inspection and well decommissioning records. However, not documenting inspection results into Hanford Environmental Information System prevents the Department from accurately tracking the status of all wells using the Materialized View. Documenting inspection results would provide the Department with a visual snapshot of the current status of more than 12,000 wells at Hanford and ensure adequate oversight of timely inspections and decommissioning.

The full report is available at <https://www.energy.gov/sites/prod/files/2018/08/f55/DOE-OIG-18-45.pdf>.

## **Nuclear Waste Disposal**

The Department is responsible for safely disposing of nuclear waste and seeks cost effective and environmentally responsible project execution methods. The Department's waste management mission involves planning and optimizing tank waste processing and nuclear materials, including spent nuclear fuel. Overall, the Department has approximately 88 million gallons of liquid waste stored in underground tanks and approximately 4,000 cubic meters of solid waste derived from the liquids stored in bins. The Department's current estimated cost for retrieval, treatment, and disposal of this waste exceeds \$50 billion. The highly radioactive portion of this waste, located at the Hanford Site, Idaho National Laboratory, and Savannah River sites, must be treated and immobilized, and prepared for shipment to a waste repository.

To accomplish its mission, the Department operates several waste processing and storage facilities. The Department is currently in the process of designing and building the Waste Treatment and Immobilization Plant. When complete, the Waste Treatment and Immobilization Plant will be the world's largest radioactive waste treatment plant. Its mission is to process and stabilize 56 million gallons of radioactive and chemical waste currently stored at the Hanford Site. In addition, after re-opening the Waste Isolation Pilot Plant, which was closed as a result of an accidental radiological release, the Department resumed accepting waste shipments in April 2017 and mining operations in January 2018. Further, after much uncertainty, National Nuclear Security Administration (NNSA) delivered a notice on October 10, 2018 to terminate the contract for the Mixed Oxide Fuel Fabrication Facility and begin the process of winding down construction operations.

Finally, the Department has been involved in numerous lawsuits pertaining to the delay in beginning disposal of spent nuclear fuel. In accordance with the *Nuclear Waste Policy Act of 1982*, the Department entered into more than 68 Standard Contracts with utilities in which, in return for payment for fees into the Nuclear Waste Fund, the Department agreed to begin disposal of spent nuclear fuel by January 31, 1998. Because the Department has no facility

available to receive spent nuclear fuel, it has been unable to begin disposal of the utilities' spent nuclear fuel as required by the contracts. Significant litigation claiming damages for partial breach of contract has ensued as a result of the delay. Specifically, to date, 40 suits have been settled and an additional 57 cases have been resolved, resulting in \$7.4 billion paid to the utilities for the delay damages.

Our recent investigation report shows some challenges the Department faces in regards to disposing of nuclear waste.

*Indictment in Conspiracy to Commit Money Laundering  
January 2018*

On January 10, 2018, a co-conspirator was indicted in the District of Maryland on 11 counts of Conspiracy, Wire Fraud, International Money Laundering, and violations of the Foreign Corrupt Practices Act. The investigation determined the co-conspirator, a former co-president of a Maryland-based transportation company that provides services for the transportation of nuclear materials to customers in the U.S. and abroad, engaged with several co-conspirators in a scheme to bribe a Russian official to influence the awarding of contracts with the Russian State-owned nuclear energy corporation, TENEX. This was a joint investigation with the Federal Bureau of Investigation.

### **Safeguards and Security**

Safeguards and Security programs are an essential part of the Department's ability to efficiently and effectively meet all its obligations to protect Special Nuclear Material, other nuclear materials, classified matter, sensitive information, Government property, and ensure the safety and security of employees, contractors, and the general public. Safeguards and Security programs are required to incorporate a risk-based approach to protect assets and activities against the consequences of attempted theft, diversion, terrorist attack, espionage, unauthorized access, compromise, and other acts that may have an adverse impact on national security or the environment.

In March 2018, the Office of Enterprise Assessments issued its *Lessons Learned from Assessments of Emergency Management Program at U.S. Department of Energy Sites* report, which identified weaknesses in emergency management programs. Some of the issues included that the contractors did not always ensure that:

- Exercise scenarios demonstrated their full response capabilities over a 5-year period;
- Emergency response organization performance was effective during exercises;
- Communications and integration among responders were fully adequate;
- Corrective actions fully addressed the findings and were effective; and
- Responsibilities for maintaining long-term effectiveness of the program were addressed during and after contractor transition.

Safeguards and Security has been included in our management challenges report since FY 2001 and remains an area of focus for the Department, as evidenced by our recent report on *Security Allegations at a Western Area Power Administration Site*.

*Security Allegations at a Western Area Power Administration Site  
June 2018, DOE-OIG-18-36*

Western Area Power Administration (Western) is one of four power marketing administrations within the Department whose role is to market and transmit electricity from multi-use water projects. Western's transmission system encompasses 15 states and is operated and maintained from 4 regional offices. Western's Office of Security and Emergency Management is responsible for physical security at Western's facilities, and in March 2015, Western approved an acquisition plan to standardize all of Western's security guard services under one contract. In June 2016, a contractor was awarded the contract to provide armed guard security services for all Western sites. In August 2016, the contractor began performing security services at a Western site.

The OIG received two Hotline complaints with multiple allegations related to security at a Western site. For the purposes of our review, we summarized the details of the complaints into 15 allegations that were applicable to either the contractor or Western. Of the 15 allegations, 2 were substantiated with impact, 3 were substantiated or partially substantiated with no impact, and the other 10 were not substantiated. We substantiated one allegation related to cameras and one related to evacuation drills. We found that some of the cameras used to monitor facilities within one of Western's regions had very poor visibility, especially at night. We also found that Western officials had not conducted evacuation drills at the Western site. Western officials were in the process of correcting issues with the cameras and fully implementing an Emergency Management Program.

In addition, during the performance of our inspection, we identified other matters that warrant management's attention. Specifically, we found that the contractor did not or may not have met other contract requirements. For example, the contractor had not ensured that security guards received all training as required and may not have performed services during the days and hours specified in the contract.

The full report is available at [https://www.energy.gov/sites/prod/files/2018/06/f53/DOE-OIG-18-36\\_1.pdf](https://www.energy.gov/sites/prod/files/2018/06/f53/DOE-OIG-18-36_1.pdf).

## **Stockpile Stewardship**

The Department and NNSA are responsible for enhancing national security through the military application of nuclear science. The NNSA maintains and enhances the safety, security, and effectiveness of the Nation's nuclear weapons stockpile without nuclear testing. Nuclear weapons are continuously assessed and evaluated to detect any potential problems. The NNSA's mission is supported by three crosscutting capabilities: science, technology, and engineering; people and infrastructure; and management and operations. These capabilities are spread across the NNSA nuclear security enterprise at Headquarters, the field offices, production

facilities, national security laboratories, and a national security site. These locations consist of approximately 39,000 Federal civilian employees, contractor personnel, as well as assigned members of the military.

While the Department indicated that substantial progress on priorities had been made, including life extension programs, continued investment is required to ensure the stockpile remains safe, secure, and effective. The nuclear weapons stockpile is aging and contains many obsolete technologies that must be replaced as the service lives of the weapons are extended. Further, NNSA's mission depends on the facilities, infrastructure, and equipment for success.

As noted in our reports on *The Sandia National Laboratories Silicon Fabrication Revitalization Effort* and *Supplier Quality Management at National Nuclear Security Administration Sites*, stockpile stewardship remains an area of emphasis for the Department.

*The Sandia National Laboratories Silicon Fabrication Revitalization Effort  
August 2018, DOE-OIG-18-42*

Sandia National Laboratories (Sandia) supports NNSA's mission through the development, design, and manufacturing of strategic radiation-hardened microelectronics at its Silicon Fabrication facility. The Silicon Fabrication facility, constructed in 1988, reached its design end of life in 2013 and relies on fabrication tools configured for processing 6-inch silicon wafers to produce the radiation-hardened integrated circuits used in the stockpile. Commercial support for maintaining fabrication tools for 6-inch silicon wafers no longer exists. To address this problem, in 2012, Sandia began the Sandia Silicon Fabrication Revitalization effort with the objective of reducing the risk of Silicon Fabrication facility equipment failures through the replacement or refurbishment of tools and facility modifications. The Sandia Silicon Fabrication Revitalization effort was originally scheduled to be completed in FY 2018 with a Total Project Cost of \$150 million.

Our review revealed that Sandia had managed the Sandia Silicon Fabrication Revitalization effort project scope within the planned cost and schedule, but NNSA did not require Sandia to execute the project within Departmental requirements. In addition, we found that Sandia had prioritized the replacement or refurbishment of Silicon Fabrication facility equipment based upon the risk of equipment failure and regularly re-evaluated the risk ranking to account for changes in equipment condition. However, we identified issues that, if corrected, should improve Sandia's management of the Sandia Silicon Fabrication Revitalization effort and NNSA's oversight of the Sandia Silicon Fabrication Revitalization effort. Nothing came to our attention to indicate that Sandia will not continue to make progress in refurbishing or replacing silicon fabrication tools and facility modifications. Nevertheless, the issues we identified may contribute to problems in project execution in the future. We noted that Sandia had not:

- Generated reliable, accurate, and reasonable earned value data related to cost and completion estimates for managing the Sandia Silicon Fabrication Revitalization effort;
- Employed an earned value management system certified by the Department as compliant with established standards;



- Included NNSA in the baseline change approval process; and
- Established management reserve based on a formal risk analysis, and instead, determined management reserve as a percentage of remaining project costs.

The full report is available at [https://www.energy.gov/sites/prod/files/2018/08/f54/DOE-OIG-18-42\\_0.pdf](https://www.energy.gov/sites/prod/files/2018/08/f54/DOE-OIG-18-42_0.pdf).

*Supplier Quality Management at National Nuclear Security Administration Sites  
July 2018, DOE-OIG-18-41*

As part of its mission, the Department's NNSA ensures the sustainment of a safe, secure, and effective nuclear deterrent through the application of science, technology, engineering, and manufacturing. NNSA's Management and Operating contractors and suppliers support this mission by integrating quality requirements into management and work practices to build weapon components and procure materials so that the mission is accomplished and customer requirements are met.

The NNSA's Weapon Quality Policy (NAP-24A) identifies requirements that increase NNSA's confidence that quality and performance requirements are met. In addition, NNSA uses the weapon quality assurance processes to ensure consistent and integrated implementation across its Management and Operating contractor sites (NNSA sites). In November 2015, NNSA revised its policy to include more rigorous requirements. In particular, Nuclear Enterprise Assurance requirements were developed due to concerns about the increased trend toward a non-domestic procurement supply chain for nuclear weapon components, coupled with the reality of increasingly sophisticated adversaries.

We noted that NNSA could improve program efficiencies with the supplier evaluation process. In particular, we identified instances where NNSA sites were not fully utilizing an available database tool known as the Master Approved Supplier List. Although the use of the Master Approved Supplier List was not required by NNSA, it was designed, developed, and implemented to serve as a single master database of all suppliers, eliminate the duplication of supplier evaluation efforts, and achieve cost savings across NNSA. Sites were not always using the Master Approved Supplier List for weapons component procurements because the use of multiple and inconsistent supplier evaluation checklists and standards made it difficult for sites to share the results of supplier evaluations. In addition, the Kansas City National Security Campus raised legal concerns regarding nondisclosure agreements with suppliers, which had not been addressed. As a result, NNSA sites may be spending more than necessary for supplier evaluations.

The full report is available at <https://www.energy.gov/sites/prod/files/2018/07/f53/DOE-OIG-18-41.pdf>.

### **Infrastructure Modernization**

The Department is responsible for a vast portfolio of infrastructure that consists of world-leading scientific and production tools, as well as the general purpose infrastructure needed to enable the

use of those tools. As of March 2018, the Department had the fourth largest inventory of real property in the Federal Government by square footage, including 9,575 buildings totaling 107.2 million square feet with approximately \$2.1 billion in annual operating and maintenance costs. Modern and reliable infrastructure is critical to support the Department in successfully and efficiently executing its missions both today and in the years ahead. According to the Department of Defense's February 2018 *Nuclear Posture Review Report*, in order to remain safe, secure, and effective, a responsive and resilient nuclear weapons infrastructure is essential to the United States capacity to adapt to shifting requirements. However, the average age of the Department's facilities and utilities is 37 and 40 years, respectively.

While the Department made significant investments in world class experimental facilities, much of the supporting infrastructure that enables the mission and forms the backbone of the Department enterprise is in need of greater attention. Facilities and infrastructure can have a substantial impact on laboratory research and operations in a variety of ways. For instance, poor conditions in laboratory facilities and infrastructure can lead to inadequate functionality on mission performance; negative effects on the environment, safety, and health of the site; higher maintenance costs; and problems with recruiting and retaining high-quality scientists and engineers.

Although the OIG did not conduct any work related to infrastructure modernization during FY 2018, Department reports indicate that the agency is facing a systemic challenge of degrading infrastructure and levels of deferred maintenance that have been increasing. Specifically, the March 2018 *Annual Infrastructure Executive Committee Report to the Laboratory Operations Board* report issued by the Infrastructure Executive Committee, indicated that 35 percent of Department-owned buildings and trailers were considered substandard and 16 percent were considered inadequate. In addition, the *Fiscal Year 2018 Stockpile Stewardship and Management Plan* states that the current demands of the stockpile stewardship program have placed increasing loads on an aging NNSA infrastructure.

We noted that the Department has planned critical infrastructure repair/replacement projects at the Waste Isolation Pilot Plant, including \$84 million for the Safety Significant Confinement Ventilation System and \$1 million for the Utility Shaft. Further, NNSA has requested over \$3 billion in FY 2019 funding for Infrastructure and Operations to include deferred maintenance at its aging facilities and infrastructure. This includes the construction of a new facility in Albuquerque for Federal staff who currently work in inadequate facilities built in the 1940s and 1950s. Despite the planned projects and an increase in FY 2019 budget, infrastructure modernization continues to be a management challenge for the Department because of the significant amount of remaining work.

## Watch List Items

Annually, the OIG also prepares a Watch List to accompany the Management Challenges listing. These areas incorporate issues that, at the current time, do not meet the threshold of a management challenge; however in our view, they warrant special attention by Department officials.

### Department's Employee Concerns Program

The Department's Employee Concerns Program provides Department Federal, contractor, and subcontractor employees with an independent avenue to raise any concern related, but not limited, to the environment, safety, health, and management. The Employee Concerns Program is designed to encourage open communication and ensure employees can raise issues without fear of reprisal. Free and open expression of employee concerns is essential to the safe and efficient accomplishment of the Department's mission. The Department's contractors have two options when filing whistleblower complaints through the 708 (10 C.F.R. 708: *DOE Contractor Employee Protection Program*) and 4712 (*National Defense Authorization Act's Enhancement of Contractor Protection from Retaliation for Disclosure of Certain Information Act*, 41 U.S.C. § 4712) processes. One of the differences between the two processes is the statute of limitation. For the 708 process, the statute of limitation is 90 days after the date the employee knew, or reasonably should have known, of alleged retaliation. For the 4712 process, the statute of limitation is 3 years after the dates of which the alleged reprisal occurred.

In FY 2018, the OIG identified the Department's Employee Concerns Program as a Watch List item due to concerns that contractors were not adequately addressing employees' concerns and may be suppressing complaints, in addition to an investigation that identified an employee who was wrongfully fired as a result of retaliation. One year later, indications of the need for special attention by the Department remain. For instance, not all Department contracts currently include the 4712 clause. We will be initiating an audit in FY 2019 regarding the Department's process for incorporating the 4712 contract clause in contracts. As such, the OIG is concerned about whistleblower protections and whether the process is available to all contractors. Citing an investigation report issued by the OIG in 2017, the Department found that a contractor, Savannah River Nuclear Solutions, retaliated against the complainant when it fired that person following that person's disclosure of information to the Government Accountability Office. The Department ordered Savannah River Nuclear Solutions to reinstate the complainant, pay the complainant back pay, and reimburse the complainant for expenses. For these reasons, the Department's Employee Concerns Program remains on this year's Management Challenges Watch List.

### Power Marketing Administrations

In FY 2018, the OIG added the Power Marketing Administrations to the Management Challenges Watch List. The Department's four Power Marketing Administrations sell electricity primarily generated by Federally-owned hydropower projects. Preference in the sale of power is given to public entities and electric cooperatives. Revenues from the sale of Federal power and transmission services are used to repay all power and transmission costs. However, over the

past few years, the Department has experienced challenges in overseeing the Power Marketing Administrations. Based on our work at the Power Marketing Administrations, we found issues related to physical security, priority of resources, and possible lack of transparency in regards to management decisions. We also have multiple ongoing reviews at one of the Power Marketing Administrations stemming from complaints received by the OIG Hotline. Due to the increase in issues identified during audit, inspection, and investigative work, specifically at the Western Area and Southwestern Power Administrations, the identified area remains on this year's Management Challenges Watch List.

### **Human Capital Management**

The strategic management of human capital requires comprehensive planning and analysis in order to develop, implement, and evaluate programs that support every facet of employee work life. Human capital management is a significant challenge that impacts the ability of Federal agencies to meet performance goals and to execute their missions efficiently. However, the lack of adequate, predictable funding and staffing could negatively affect an agency's ability to meet its mission. In fact, according to the 2016-2020 *Strategic Human Capital Plan*, over 35 percent of the Department's Federal employees will be eligible to retire by 2020, including many of its most experienced and highly skilled professionals. Officials from the Department's Office of Nuclear Energy and Office of the Chief Human Capital Officer have indicated that Human Capital Management is a workforce challenge. For these reasons, Human Capital Management is on this year's Management Challenges Watch List.

### **Loan Guarantee Program**

The Department's Loan Programs Office operates direct loan and loan guarantee programs; the Advanced Technology Vehicles Manufacturing Loan Program; and the Title XVII Innovative Clean Energy Projects Loan Program. The Advanced Technology Vehicles Manufacturing Loan Program authorizes direct loans to support the development of advanced technology vehicles and associated components. The Title XVII Innovative Clean Energy Projects Loan Program provides loan guarantees to accelerate the deployment of innovative clean energy technology. Further, in July 2018, the Department established the Tribal Energy Loan Guarantee Program which will provide \$2 billion in partial loan guarantees to support economic opportunities for Native American and Alaska Native communities through energy development projects and activities. Currently, the Loan Programs Office manages a portfolio comprising more than \$30 billion of loans, loan guarantees, and conditional commitments, covering more than 30 projects. However, work performed in this area revealed that the Department had not always managed these loan guarantee programs effectively. Additionally, during FY 2018, the OIG received an increase in Hotline complaints regarding personnel and management of the Loan Program Office. Further, the OIG has been made aware of recent issues concerning the construction of Vogtle. For these reasons, the Loan Guarantee Program is on this year's Management Challenges Watch List.

### **Worker and Community Safety**

The Department's worker and health and safety requirements, and expectations ensure protection of workers from the hazards associated with Department operations. The Department supported the Department of Labor in the implementation of the *Energy Employees Occupational Illness Compensation Program Act* and implemented medical surveillance and screening programs for current and former workers. Health studies conducted determine worker and public health effects from exposure to hazardous materials associated with Department operations and supports international health studies and programs. Departmental worker health and safety programs and activities also serve to assist Department headquarters and field elements in the implementation of policy and resolve worker safety and health issues. However, citing an inspection report issued by the OIG in February 2018, we found that Los Alamos did not fully implement a Prevention Program, resulting in a potential increased risk that workers were inappropriately exposed to beryllium contamination in locations used for other purposes. Because of the importance of Department employees, worker and community safety is on this year's Management Challenges Watch List.

## **FEEDBACK**

The Office of Inspector General has a continuing interest in improving the usefulness of its products. We aim to make our reports as responsive as possible and ask you to consider sharing your thoughts with us.

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