Fiscal Year 2017
Agency Financial Report

DOE/CF-0138

U.S. DEPARTMENT OF ENERGY

Foreword

The Reports Consolidation Act of 2000 authorizes Federal agencies, with the Office of Management and Budget's (OMB) concurrence, to consolidate various reports to provide performance, financial and related information in a more meaningful and useful format. For Fiscal Year (FY) 2017, the Department of Energy (Department or DOE), has produced an *Agency Financial Report*. DOE will provide a combined *Annual Performance Report/Annual Performance Plan* which will be available at the website below, when completed.

Agency Financial Report (AFR) – The AFR is presented in three major sections.

- **Management's Discussion and Analysis** provides executive-level information on the Department's history, mission, organization, Secretarial priorities, analysis of financial statements, systems, controls and legal compliance and other management priorities facing the Department.
- **Financial Results** provides the Department's consolidated and combined financial statements and the Auditors' Report.
- **Other Information** provides the Inspector General's Statement of Management Challenges and other statutory reporting.

Annual Performance Report/Annual Performance Plan (APPR) –The APPR will provide the detailed performance information and descriptions of results for each performance measure, and performance targets for the current and upcoming fiscal years, including performance measures related to the DOE Management Priorities as required by the GPRA Modernization Act of 2010. DOE's performance reports are available at https://www.energy.gov/budget-performance.

This report meets the following reporting requirements:

- Grants Oversight and New Efficiency (GONE) Act requires agencies to close out expired grants.
- Fraud Reduction and Data Analytics Act (FRADA) of 2015 requires agencies to identify and assess fraud risks and design and implement controls to mitigate fraud.
- Improper Payments Elimination and Recovery Act of 2010 (IPERA) and the Improper Payments Elimination and Recovery Improvement Act of 2012 (IPERIA).
- Federal Financial Management Improvement Act (FFMIA) of 1996 requires an assessment of the agency's financial systems for adherence to Government-wide requirements.
- Government Management Reform Act (GMRA) of 1994 requires an agency to have audited financial statements.
- Federal Managers' Financial Integrity Act (FMFIA) of 1982 requires a report on the status of internal controls and agency priorities.
- Inspector General (IG) Act of 1978 (Amended) requires information on management actions in response to IG audits.
- Department of Energy Organization Act of 1977 requires an annual report on agency activities.

The above reports will be available at www.energy.gov/budget-performance

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Management's Discussion and Analysis

SLAC Linac at Sunset
The linear accelerator, or simply "linac," at the SLAC National Accelerator Laboratory, is the world's longest linear particle accelerator. Since its construction in 1962, it has been accelerating electrons and positrons over its 2-mile length to provide cutting-edge research and development. Today portions of the accelerator power the Linac Coherent Light Source (LCLS), the world's most powerful X-ray laser.
Photo Credit: Matt Beardsley/SLAC National Accelerator, May 22, 2017.

Agency Highlights
(Unaudited)

MISSION

To enhance United States (U.S.) security and economic growth through transformative science, technology innovation, and market solutions to meet our energy, nuclear security, and environmental challenges.

History

The Department of Energy's lineage can be traced back to the Manhattan Project and the race to develop the atomic bomb during World War II. Following the war, Congress created the Atomic Energy Commission (Commission) in 1946 to oversee the sprawling nuclear scientific and industrial complex supporting the Manhattan Project and to maintain civilian Government control over atomic research and development (R&D). During the early Cold War years, the Commission focused on designing and producing nuclear weapons and developing nuclear reactors for naval propulsion. The creation of the Commission ended the exclusive Government use of the atom and began the growth of the commercial nuclear power industry, with the Commission having authority to regulate the new industry.

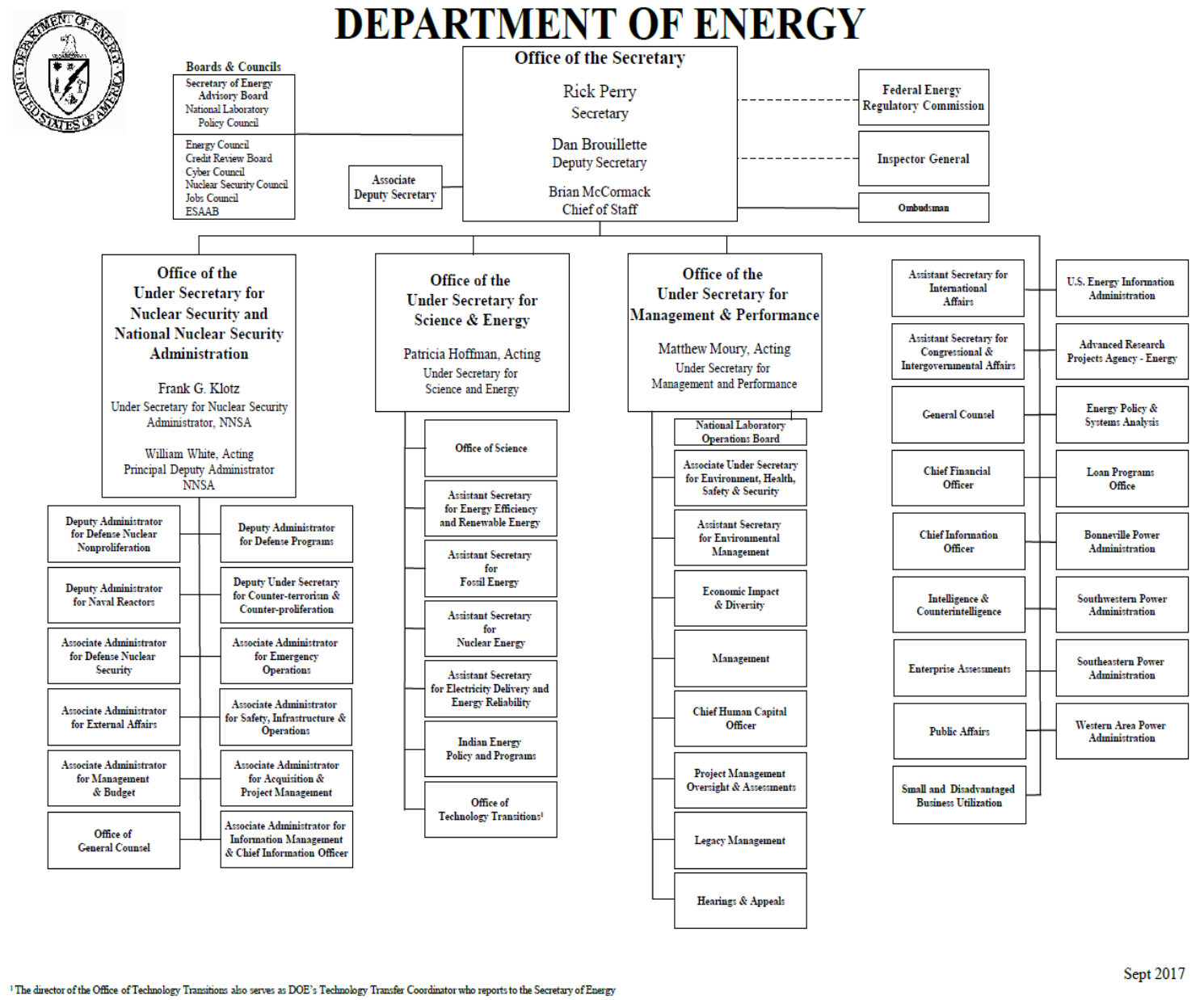
In response to changing needs and an extended energy crisis, the Congress passed the Department of Energy Organization Act in 1977, creating one of the most diverse agencies in the federal Government. That legislation brought together for the first time, not only most of the Government's energy programs, but also science and technology programs and defense responsibilities that included the design, construction and testing of nuclear weapons. The Department provided the framework for a comprehensive and balanced national energy plan by coordinating and administering the energy functions of the federal Government. The Department undertook responsibility for long-term, high-risk R&D of energy technology, federal power marketing, energy conservation activities, the nuclear weapons programs, certain energy regulatory programs, and a central energy data collection and analysis program.

Over its history, the Department has shifted its emphasis and focus as the energy and security needs of the Nation have changed. During the late 1970s, the Department emphasized energy development and regulation but shifted to nuclear weapons research, development and production during the 1980s. With the end of the Cold War, DOE focused on environmental cleanup of the nuclear weapons complex, as well as non-proliferation and stewardship of the nuclear stockpile. Today, the Department is committed to meeting America's energy, nuclear security and environmental challenges through science and technology innovation.

The Manhattan Project
The unveiling of the site plaque on the West Stands of Stagg Field, on the fifth anniversary of the first controlled release of nuclear energy. Photo credit: U.S. Department of Energy, December 2, 1947.

Illustration of microbes inside a fracking well
Credit: Pacific Northwest National Laboratory, October 20, 2017.

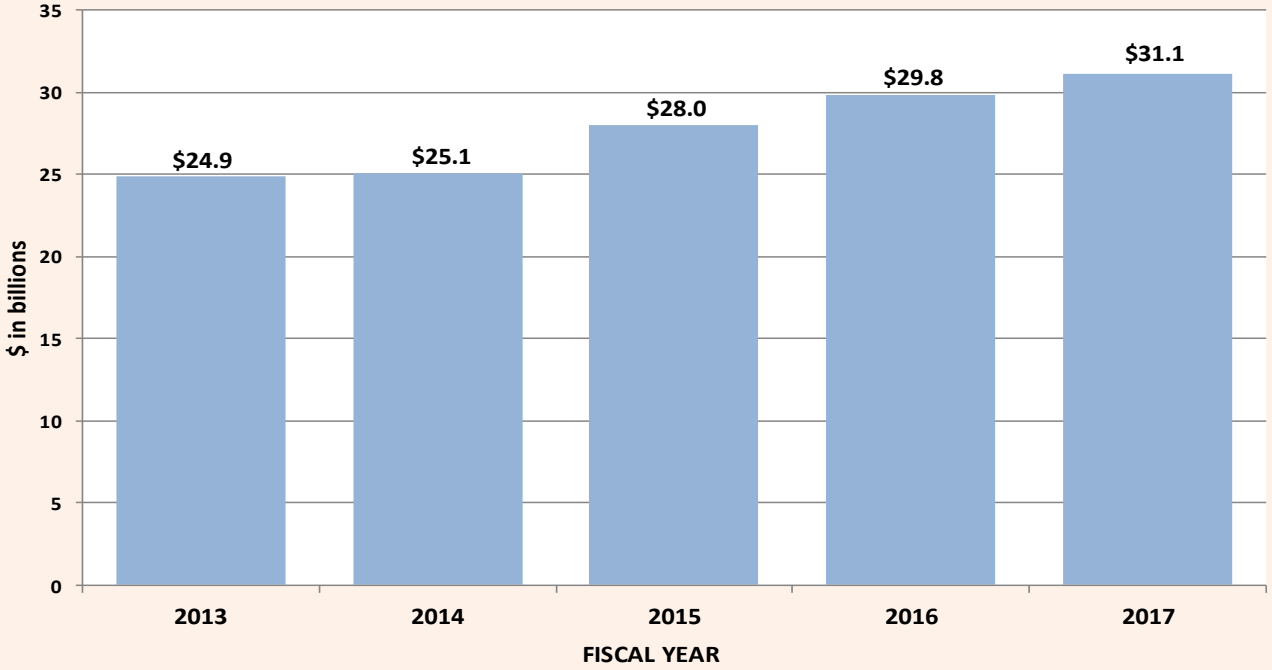
Organizational Structure



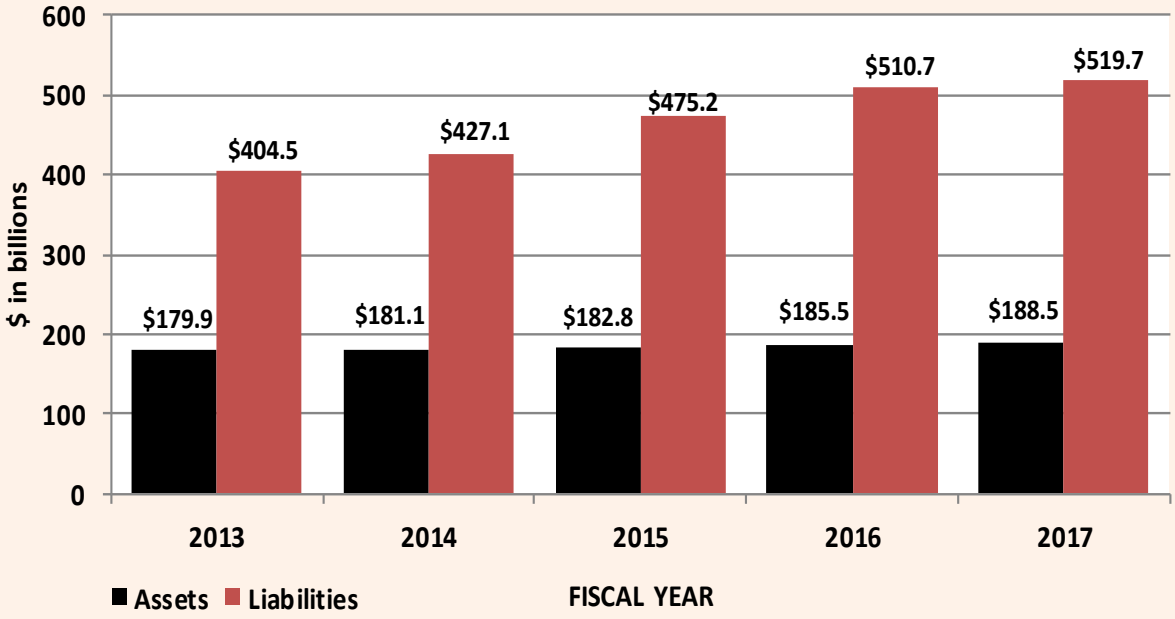
Financial Resources

Appropriations

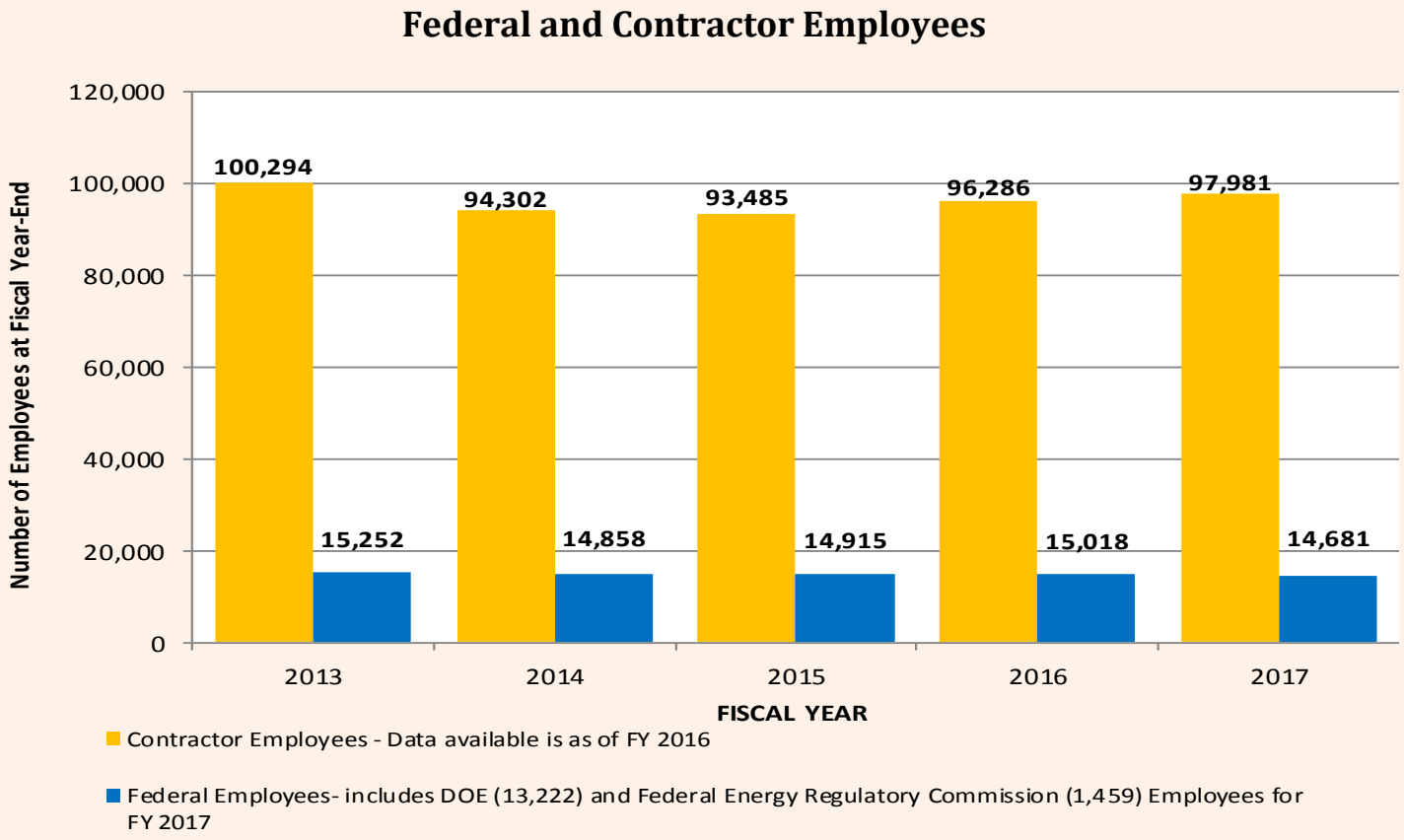
(Appropriations are defined per the FY 2017 *Combined Statements of Budgetary Resources*)



Assets and Liabilities



Human Capital Resources



Financial Management Report Card

COMPLIANCE YES	COMPLIANCE NO	REQUIREMENT OR INITIATIVE	SUPPORTING INDICATORS (see page references for more detail)
☑		Government Management Reform Act –Financial Statement Audit	Unmodified Audit Opinion (see pages 110-120)
☑		Federal Managers' Financial Integrity Act – Internal Controls (Section II) Financial Systems (Section IV)	No Material Weaknesses (Section II) (see pages 28-29 and 127) Financial Systems generally conform to (Section IV) requirements and no FISMA significant deficiencies identified (see pages 28-29 and 127)
☑		OMB Circular A-123, Appendix A	No Material Weaknesses (see pages 28-29 and 127)
☑		Federal Financial Management Improvement Act	Substantially comply with federal financial management system requirements (see pages 28-29 and 127)
☑		Federal Information Security Management Act (FISMA)	Substantially comply with FISMA requirements as evidenced by annual FISMA reporting data (see pages 28-29 and 127)
☑		Improper Payments Information Act, as amended by the Improper Payments Elimination & Recovery Act and the Improper Payments Elimination and Recovery Improvement Act	<1% overall Erroneous Payment Rate and not susceptible to significant improper payments (see pages 130-131)

Performance Summary

The tables in this section will be updated with FY 2017 data in the Department's *FY 2017 Annual Performance Report*. Additional performance results can be obtained at http://energy.gov/budget-performance.

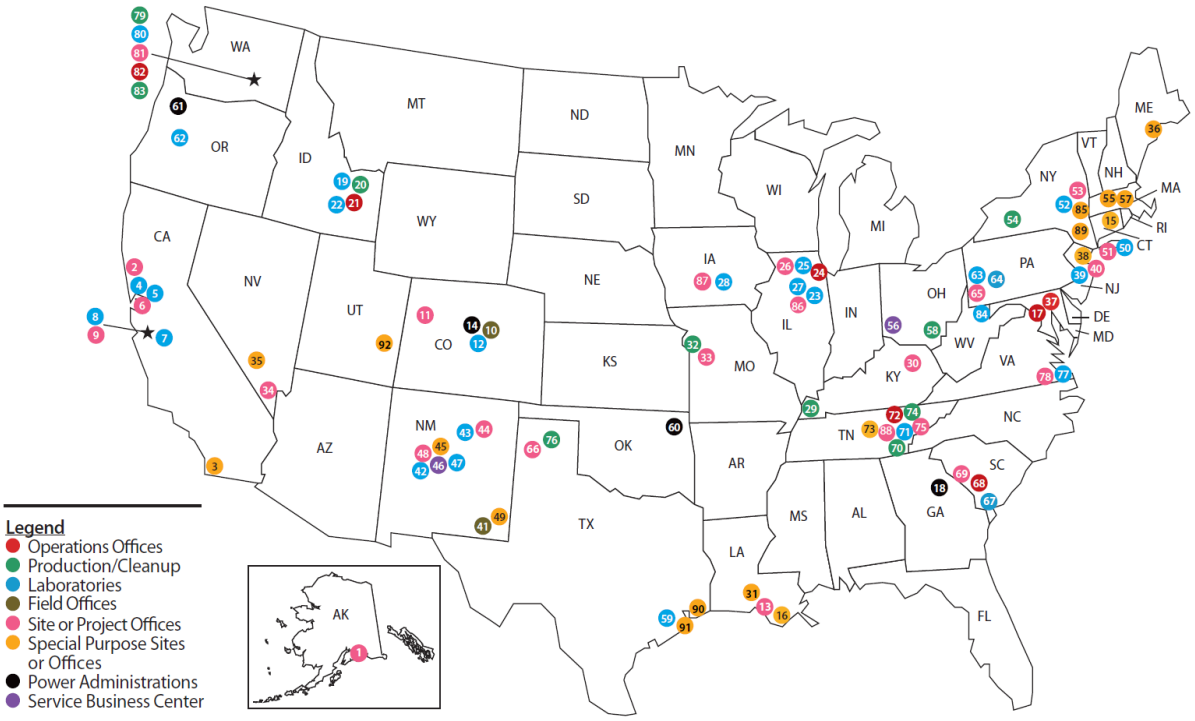
STRATEGIC GOAL	ACTIVITY	Fiscal Year 2015 Performance *			Fiscal Year 2016 Performance		
		Targets Met	Targets Not Met	Results Unknown	Targets Met	Targets Not Met	Results Unknown
Strategic Goal 1: Science and Energy							
	Electricity Delivery & Energy Reliability	8			8		
	Western Area Power Administration	2			2		
	Bonneville Power Administration	3			3		
	Southeastern Power Administration	2			2		
	Southwestern Power Administration	4			4		
	Solar Energy	3			1		
	Wind Energy	1	1		2		
	Geothermal Technologies	1			1		
	Water Power	3			3		
	Bioenergy Technologies	4	1		1		
	Hydrogen & Fuel Cell Technologies	2			1		
	Vehicle Technologies	5			1		
	Advanced Manufacturing	2			1		
	Building Technologies	2			1		
	Federal Energy Management	1			1		
	Weatherization & Intergovernmental	2				1	
	Fossil Energy R&D	3			2	1	
	Petroleum Reserves	3			2	1	
	New Nuclear Generation Technologies	5			5		
	Nuclear Infrastructure	1	1		2		
	Energy Information Administration	2			2		
	Loan Guarantees	2	2		2	2	
	Advanced Research Projects Agency-Energy	2			2		
	Advanced Scientific Computing Research	2			2		
	Basic Energy Sciences	3			3		
	Biological & Environmental Research	2			2		
	Fusion Energy Sciences	3	1		3		
	High Energy Physics	2	1		3		
	Nuclear Physics	3			3		
	Total Goal 1	**78**	**7**	**0**	**65**	**5**	**0**
Strategic Goal 2: Nuclear Security							
	NNSA Federal Salaries & Expenses	1			1		
	Directed Stockpile Work	2	2		4		
	Science Campaign	1			1		
	Engineering Campaign	1			1		
	Inertial Confinement Fusion Ignition & High Yield Campaign	2			1		
	Advanced Simulation & Computing Campaign	1			1		
	Advanced Manufacturing Development	1			1		
	Infrastructure and Operations	2			2	3	
	Secure Transportation Asset	1			1		
	Nuclear Counterterrorism Incident Response	1			2	1	
	Site Stewardship	1					
	Defense Nuclear Security	3			3		
	Information Technology and Cybersecurity	1				1	
	Counterterrorism & Counterproliferation	1					
	Defense Nuclear Nonproliferation R&D	5			4		
	Nonproliferation & International Security	3					
	Global Material Security	3	2		3	1	
	Material Management and Minimization	2	2	1	3	2	

AGENCY HIGHLIGHTS (Unaudited)

STRATEGIC GOAL	ACTIVITY	Fiscal Year 2015 Performance			Fiscal Year 2016 Performance		
		Targets Met	Targets Not Met	Results Unknown	Targets Met	Targets Not Met	Results Unknown
Continued Strategic Goal 2: Nuclear Security							
	Nonproliferation and Arms Control	3			3		
	Naval Reactors	2			1		
	Nonproliferation Construction						1
	Total Goal 2	**37**	**6**	**1**	**32**	**8**	**1**
Strategic Goal 3: Management and Performance							
	Environmental Management	7	7		6	8	
	Legacy Management	2			2		
	Information Management (CIO)	1	13		1	11	
	Departmental Management/Project Management Oversight and Assessments	3	2		5		
	Human Capital	1	1		1	1	
	Hearings and Appeals	1			1		
	Environment, Health, Safety and Security	1			1		
	Total Goal 3	**16**	**23**	**0**	**17**	**20**	**0**
	DOE Total	**131**	**36**	**1**	**114**	**33**	**1**
	Share of Targets	**78%**	**21%**	**<1%**	**77%**	**22%**	**<1%**

* FY 2015 results in the Performance Summary table differ from those presented in the FY 2016 Agency Financial Report because of updates to preliminary results and the addition of FY 2015 results for measures added in FY 2016.

Major Laboratories and Field Facilities



Alaska
1 Arctic Energy Office

California
2 Berkeley Site Office
3 Energy Technology Engineering Center
4 Lawrence Berkeley National Laboratory
5 Lawrence Livermore National Laboratory
6 Livermore Field Office
7 Sandia National Laboratories
8 SLAC National Accelerator Laboratory
9 SLAC Site Office

Colorado
10 Golden Field Office
11 Grand Junction Office
12 National Renewable Energy Laboratory
14 Western Area Power Administration

Connecticut
15 Northeast Home Heating Oil Reserve

District of Columbia
17 Washington D.C. Headquarters

Georgia
18 Southeastern Power Administration

Idaho
19 20 Idaho National Laboratory
21 Idaho Operations Office
22 Radiological Environmental Sciences Laboratory

Illinois
23 Argonne National Laboratory
86 Argonne Site Office
24 Chicago Office
25 Fermi National Accelerator Laboratory
26 Fermi Site Office
27 New Brunswick Laboratory

Iowa
28 Ames Laboratory
87 Ames Site Office

Kentucky
29 Paducah Gaseous Diffusion Plant
30 Portsmouth/Paducah Project Office

Louisiana
13 Strategic Petroleum Reserve (SPR) Project Management Office
16 SPR - West Hackberry Site
31 SPR - Bayou Choctaw Site

Maine
36 Northeast Gasoline Supply Reserve

Maryland
37 DOE Headquarters - Germantown Campus

Massachusetts
55 Northeast Gasoline Supply Reserve
57 Northeast Home Heating Oil Reserve

Missouri
32 Kansas City National Security Campus
33 Kansas City Field Office

Nevada
34 Nevada Field Office
35 Nevada National Security Site

New Jersey
38 Northeast Home Heating Oil Reserve
39 Princeton Plasma Physics Laboratory
40 Princeton Site Office

New Mexico
41 Carlsbad Field Office
42 Inhalation Toxicology Research Institute
43 Los Alamos National Laboratory
44 Los Alamos Field Office
45 National Training Center
46 NNSA Albuquerque Complex
47 Sandia National Laboratories
48 Sandia Field Office
49 Waste Isolation Pilot Plant

New York
50 Brookhaven National Laboratory
51 Brookhaven Site Office
52 Knolls Atomic Power Laboratory
53 Naval Reactors Laboratory Field Office - Schenectady
54 West Valley Demonstration Project
85 Separations Process Research Unit
89 Northeast Gasoline Supply Reserve

Ohio
56 EM Consolidated Business Center
58 Portsmouth Gaseous Diffusion Plant

Oklahoma
60 Southwestern Power Administration

Oregon
61 Bonneville Power Administration
62 National Energy Technology Laboratory – Albany

Pennsylvania
63 Bettis Atomic Power Laboratory
64 National Energy Technology Laboratory –Pittsburgh
65 Naval Reactors Laboratory Field Office - Pittsburgh

South Carolina
67 Savannah River National Laboratory
68 Savannah River Operations Office
69 Savannah River Field Office

Tennessee
70 East Tennessee Technology Park
71 Oak Ridge National Laboratory
88 Oak Ridge National Laboratory Site Office
72 Oak Ridge Office
73 Office of Scientific and Technical Information
74 Y-12 National Security Complex NNSA
75 NNSA Production Office - Oak Ridge

Texas
76 Pantex Plant
66 NNSA Production Office - Amarillo
59 National Energy Technology Lab – Sugar Land
90 Strategic Petroleum Reserve - Big Hill Site
91 Strategic Petroleum Reserve - Bryan Mound Site

Utah
92 Moab UMTRA Project

Virginia
77 Thomas Jefferson National Accelerator Facility
78 Thomas Jefferson Site Office

Washington
79 Hanford Site
80 Pacific Northwest National Laboratory
81 Pacific Northwest Site Office
82 Richland Operations Office
83 Office of River Protection

West Virginia
84 National Energy Technology Laboratory – Morgantown

Strategic Plan and Program Performance

(Unaudited)

The narrative below discusses FY 2017 results and outcomes for DOE programs as aligned with the strategic goals presented in the 2014-18 DOE Strategic Plan. A detailed discussion of results for the Department's FY 2017 performance goals, assessment methodologies, metrics, external reviews, and documentation of performance data will be presented in the *FY 2017 DOE Annual Performance Report*. Additional performance information is available at http://energy.gov/about-us/budget-performance.

Goal 1: Science and Energy

Advance foundational science, innovate energy technologies, and inform data driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of and enhance resilience against climate change

Objective 1
Advance the goals and objectives in the President's Climate Action Plan by supporting prudent development, deployment, and efficient use of "all of the above" energy resources that also create new jobs and industries

Objective 2
Support a more economically competitive, environmentally responsible, secure and resilient U.S. energy infrastructure

Objective 3
Deliver the scientific discoveries and major scientific tools that transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation

Contributing Programs

- Advanced Research Projects Agency-Energy
- Electricity Delivery and Energy Reliability
- Energy Efficiency and Renewable Energy
- Energy Information Administration
- Energy Policy and Systems Analysis
- Fossil Energy
- Indian Energy Policy and Programs
- International Affairs
- Loan Programs
- Nuclear Energy
- Power Marketing Administrations
- Science
- Strategic Petroleum Reserve
- Technology Transitions

DOE leads the nation in the transformational research and development that expands the frontiers of scientific knowledge and generates new technologies to address the country's greatest energy challenges. DOE also leads national efforts to develop technologies to modernize the electricity grid, enhance the security and resilience of energy infrastructure, and expedite recovery from energy supply disruptions. DOE conducts robust, integrated policy analysis and regional engagement to support the nation's energy agenda. DOE is the largest federal sponsor of basic research in the physical sciences. Below are examples of FY 2017 program accomplishments in these areas.

New Cyber-Attack Energy Assurance Exercise: The Office of Electricity Delivery and Energy Reliability (OE) took an important step to strengthen the security and resilience of the Nation's energy infrastructure against cyber threats by co-sponsoring Liberty Eclipse, a new regional energy assurance exercise to promote state- and local-level preparedness and resilience for future energy emergencies stemming from a cyber incident. Approximately 100 participants and over 60 participating organizations, including Federal, state, and local governments; trade and state associations; national laboratories; oil and natural gas companies; electric utilities; and communications companies participated in the exercise.

Streamlined Transmission Permitting: OE issued a Record of Decision and Presidential Permit for two transmission projects. The Great Northern Transmission Line is a 224-mile overhead alternating current transmission line that will bring up to 883 megawatts of hydropower from Manitoba Power in Canada to Grand Rapids, Minnesota and deliver wind power generated in North Dakota to Manitoba Power in Canada. The New England Clean Power Link Transmission Line is a 154-mile underground and underwater direct current transmission line that will bring up to 1,000 megawatts of hydropower from Quebec, Canada to southern Vermont. The project has the potential to provide enough reliable, affordable, and carbon-free electricity to serve approximately 1 million residential customers in New England. These transmission lines are examples of the collaborative principles detailed in the Integrated Interagency Pre-Application Process (IIP), the rulemaking process

finalized in September 2016 that streamlined permitting and siting by encouraging early engagement with local, state, and tribal communities on electric grid transmission projects. As a result, the reviews for both transmission lines were completed in 2.5 years. Large-scale infrastructure projects often take longer to complete.

High Performance Computing Speeds Up Assessment of Grid Security: With increasing uncertainties in modern power systems, having a computer-based tool that can quickly evaluate grid security in near real-time is essential to better understand the operational risks and make timely control decisions to ensure system reliability. Today's tools, however, are not fast enough to meet the needs of the power industry. Early stage research funded by OE at Pacific Northwest National Laboratory (PNNL) produced new algorithms using high performance parallel computing. The prototype tool, which has shown significant speed improvements, is now available to research facilities using the GridPack software suite.

Transportation: The Department's Office of Energy Efficiency and Renewable Energy (EERE) funded R&D initiatives that have lowered the cost of electric vehicle (EV) batteries to $245/kilowatt per hour (kWh), about a 75% reduction since 2008. DOE is working with industry, academia, and its national laboratories toward achieving an even more aggressive goal of reducing the cost of EV batteries by more than half, to less than $100/kWh (ultimate goal is $80/kWh); increasing range to 300 miles; and decreasing charge time to 15 minutes or less by 2028. The cost and performance of batteries are a key factor in continuing to lower the up-front cost of purchasing EVs. Lowering the cost and improving the performance of batteries for plug-in electric vehicles (PEVs) is key to improving vehicles' efficient operation.

Renewable Energy: The solar industry has benefited from EERE's Solar Energy Technology Office (SETO), achieving 90% of the SunShot 2020 cost target of $0.06/kWh for utility-scale photo voltaics (PV). SETO has been driving investment in innovation throughout the industry. SETO's $158 million investment in early-stage small businesses accelerated market access for new products and services, yielding $3.4 billion in private follow-on funding for businesses. That equates to $22 in private financing for every $1 of public support. As solar has become more affordable, the industry is growing 17 times faster than the U.S. economy. SETO investment in early stage solar technology research will help to further reduce costs to make solar energy more accessible and affordable for American families and businesses.

Oil and Gas Production: In collaboration with the states of the Groundwater Protection Council, EIA launched the National Oil and Gas Gateway, the first publicly available national database of well-level oil and natural gas data. EIA made the software available to the states to improve accessibility on their own websites. EIA also added a supplement to its Drilling Productivity Report with estimates of the number of drilled but uncompleted wells (DUCs) in the seven key oil and natural gas producing regions. Changes in the number of DUCs provide further insight into upstream industry conditions.

Grid Reliability Study: In response to direction from the Secretary of Energy, DOE undertook a comprehensive assessment of the stability and reliability of the electricity grid in the face of changing contributions from a range of generation sources. The report was led by OE with support from Energy Policy and Systems Analysis (EPSA) and the Offices of Energy Efficiency and Renewable Energy (EERE), Fossil Energy (FE), and Nuclear Energy (NE) as well as the Energy Information Agency and DOE national labs. The report included an in-depth analysis of power plant closures over the past 15 years, and found that the electricity grid continues to operate reliably and as intended, even as it is challenged by the addition of low-priced natural gas, regulatory impact on coal and nuclear plants, and an increase in renewable generation sources. Recommendations from the grid study will be used for a number of follow-on policy and study recommendations to ensure that electricity grid performance continues to be robust and affordable for U.S. consumers. The report and responses to it are available at https://energy.gov/staff-report-secretary-electricity-markets-and-reliability.

Energy Security Reports: DOE has produced two critical assessments to enhance U.S. electrical grid security. In January 2017, EPSA completed a Report to Congress on the Valuation of Energy Security as required in the 2015 Fixing America's Service Transportation (FAST) Act. The report detailed methodologies and considerations to be included in comprehensive energy security policy development. DOE also responded to the President's Executive Order, *Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure*, with a detailed study on the government's protection from, and response to, a prolonged cyber-attack on the U.S. electrical grid. This study was co-led by OE and EPSA and will be used to develop additional policy actions to help ensure the performance and resiliency of the electrical grid in the face of cyber threats.

Petra Nova Project: On January 10, 2017 NRG Energy, Inc. (NRG) announced the start of commercial operation at the Petra Nova project – the world's largest post-combustion CO_2 capture system delivering and permanently storing ~1.4 metric tons of CO_2 per year for enhanced oil recovery. The Petra Nova project was completed on-budget and on-schedule. NRG held a project ribbon cutting ceremony on April 13, 2017 that was

attended by the U.S. DOE Secretary, along with the Governor of Texas, and the CEOs of NRG, JX Nippon, and Hilcorp. During this ceremony, the Secretary summarized project accomplishments by saying that the Petra Nova project "demonstrates that clean coal technologies can have a meaningful and positive impact on the Nation's energy security and economic growth." Since commissioning began, Petra Nova has already captured and stored over 700,000 metric tons of CO_2 as of July 2017.

LNG Exports: Liquefied Natural Gas (LNG) exports from the U.S. lower 48 states commenced in February 2016. Since then exports have totaled 494 billion cubic feet (Bcf) of natural gas in 155 LNG tankers, averaging 1.0 Bcf per day through June 2017 from the Sabine Pass Terminal in Louisiana. Additionally, 59 shipments totaling 0.2 Bcf of small scale exports of LNG have been sent to Barbados from the Hialeah, Florida small-scale facility through June 2017. Exports have been sent to 25 countries, across North and South America, Asia, Europe, the Middle East and the Indian subcontinent, the five largest of which are Mexico, Chile, Japan, South Korea, and China.

Strategic Petroleum Reserve (SPR) Sales and Exchanges: In FY 2017, the Department conducted SPR crude oil sales to begin financing SPR Modernization Program activities, pursuant to Section 404 of the Bipartisan Budget Act of 2015 (P.L. 114-74). The Section 404 sale of 6.3 million barrels produced $323 million deposited into the Energy Security and Infrastructure Modernization Fund to begin SPR Life Extension II project design work and procurement of long-lead equipment for three storage sites. Additionally, in FY 2017, the Department conducted a sale of 10 million barrels of SPR crude oil to meet requirements of the 21st Century Cures Act (P.L. 114-255). Following Hurricane Harvey, the Department authorized up to 5.3 million barrels of SPR crude oil in six separate emergency exchanges with four different companies. Companies contracted for 5.0 million barrels to be delivered in late August and all of September, with return barrels, including premium barrels, to be returned to the SPR in FY 2018.

Supporting Tribal Electricity Generation: Indian Energy (IE) programs resulted in the installation of 3.2 MW of new generation in Tribal communities in 2017. Thirteen new competitive awards announced in 2017 will result in 6.3 MW of new generation for more than 3,000 tribal buildings and homes across Indian Country and are estimated to save those communities more than $2 million each year. Another nineteen awards announced in 2017 will provide energy planning grants for tribal communities.

Catalyzing Private Sector Investment: The Energy Investor Center (EIC), managed by DOE's Office of Technology Transitions, has extended the impact of DOE expertise, technologies, and facilities by bringing investors together with scientists and researchers at DOE national laboratories to identify opportunities to catalyze mission-oriented private investments. Through the technology-specific Laboratory Investor Knowledge Series (LINKS), Energy Investor Roundtables, and Innovation Interface (I2) activities, EIC worked with philanthropic and family foundations, venture capital firms, strategic corporations, incubators and accelerators, and university endowments to identify opportunities to advance development of technologies and partnerships at the national laboratories. EIC has engaged private sector entities from the utilities, original equipment manufacturers, system integrators and other verticals with a specific interest in grid-related technologies, including energy storage, grid resiliency, cybersecurity of the grid and broader grid modernization in discussions with several DOE national laboratories. These engagements are establishing a new and enhanced platform for commercializing lab-developed technologies. Since its inception, the EIC has expanded to embrace the broad range of national laboratory capabilities in areas such as grid technologies, cybersecurity, and artificial intelligence.

Loan Programs Office (LPO) 1st Advanced Fossil Project: LPO offered a conditional commitment for what would be its first Advanced Fossil Energy loan guarantee. The loan guarantee of up to $2 billion to Lake Charles Methanol, LLC would support construction of the world's first methanol production facility to employ carbon capture technology. Additionally, the project is estimated to create 1,000 full-time construction jobs, 200 permanent jobs and 300 jobs from the related enhanced oil recovery activities in Texas.

Small Modular Reactors: In December 2016, NuScale Power submitted for Nuclear Regulatory Commission (NRC) review its Design Certification Application for their small modular reactor (SMR) design. The NRC accepted the application for formal review in March 2017, and subsequently published a roughly 40-month review schedule. The progress on this first-of-its-kind regulatory review is a significant achievement as it will address many unique technical and operational issues, establishing a licensing blueprint for the next generation of advanced SMRs. Also in December 2016, the NRC docketed the application from Tennessee Valley Authority for an Early Site Permit (ESP) to site a SMR at its Clinch River site adjacent to the Oak Ridge National Laboratory in Tennessee for formal review and published a roughly 30-month review schedule. The ESP application is technology-neutral and applies bounding parameters encompassing all the U.S.-based SMR vendors in its analyses. When granted, ESP will certify the suitability of the site to construct and operate a SMR within acceptable safety and environmental parameters. These accomplishments are key steps toward accelerating the domestic deployment of SMR technology.

Bonneville Power Administration (BPA): BPA is a federal power marketing administration (PMA) with a legislatively mandated mission to market and transmit the power of the Federal Columbia River Power System (FCRPS), one of the national's largest nearly carbon-free

energy sources. To fulfill its mission to ensure an adequate, reliable, and low-cost power system for the economies and communities of the region, maintaining the availability and efficiency of the FCRPS is critical. In FY 2017, BPA met its target of achieving a Heavy Load-Hour Availability target of at least 97.5% and continued to prioritize and execute FCRPS capital investments to preserve and enhance 15,238 circuit miles of high-voltage transmission as well as hydro and nuclear power generation assets providing 11,736 MW in peak capacity. Major accomplishments included completion of turbine runner replacements for all 16 units at the second largest dam in the nation (Chief Joseph), upgrades to the Pacific DC Intertie, a range of key generation asset replacements and upgrades, environmental mitigation to address hydro project impacts, and moving forward with wire and non-wire transmission infrastructure investment to cost-effectively support high system reliability.

Southeastern Power Administration (SEPA)
Infrastructure Improvements: SEPA signed memoranda of agreement with its preference customers to fund maintenance, rehabilitations, and modernization of U.S. Army Corps of Engineers' (USACE) hydroelectric facilities in SEPA's operating area. On behalf of 424 municipal and electric cooperative customers, SEPA has transferred nearly $68 million in FY 2017 to fund infrastructure improvements assuring the reliability and dependability of Federal hydropower. In August 2016, PMA administrators began meeting quarterly with USACE commanding generals to emphasize our Federal power program partnership. Areas of discussion are USACE acquisition process, consistent accounting, water storage regulations, operations and maintenance efficiencies and coordinated communications.

Southwestern Power Administration (SWPA):
SWPA reorganized to optimize organizational effectiveness, reduce costs where possible, align business functions, and place additional focus on activities critical to SWPA customers. SWPA obligated $17 million (including alternative financing) toward upgrading the transmission infrastructure to assure the efficient and reliable delivery of Federal hydropower, enhancing energy security and the stability of the national electrical grid. SWPA's transmission system achieved service availability of 99.92 percent. The projects from which SWPA markets produced approximately 4,700 gigawatt-hours of clean renewable hydroelectric energy, saving the depletion of fossil fuels equivalent to 8.1 million barrels of fuel oil, 2.5 million tons of coal, or 37.8 billion cubic feet of natural gas, and bolstering energy security.

Western Area Power Administration (WAPA)
Commitment to customers: WAPA works with rural customers in need, such as the towns of Needles and Weaverville, California. WAPA built new transmission lines, took over load balancing, and purchased power, resulting in significant reliability improvements and rate reductions, contributing to the continued economic viability of these small towns.

Moving toward increased participation in an RTO:
Earlier this year, 10 electricity service providers, representing nearly 6.4 million customers in the Rocky Mountain region, announced plans to explore participation with an existing regional transmission organization (RTO). WAPA, as a participant in this informal group, known as the Mountain West Transmission Group, is in discussion with Southwest Power Pool to explore potential membership with a particular RTO. Anticipated benefits include optimized use of existing generation and transmission assets through an expanded electricity market; improved grid access; continued improved grid reliability services; and improved generation and transmission planning across multiple states and systems.

Supercomputers for Quantum Computers: Quantum computers could break common cryptography techniques, search huge datasets, and simulate quantum systems in a fraction of the time it would take today's computers. However, engineers first need to harness the properties of quantum bits, or qubits. Qubits are the quantum analogue to the classical computer bits "0" and "1." One of the leading methods for creating qubits involves exploiting specific structural atomic defects in diamonds. However, using diamonds is both technically challenging and expensive. Using the Edison and Mira supercomputers at DOE's National Energy Research Scientific Computing Center and Argonne National Laboratory respectively, researchers found that by applying strain to aluminum nitride, they can create structural defects in the material that may be harnessed as qubits similar to those seen in diamonds.

Graphene Ribbons Result in 100-Fold Increase in Gold Catalyst's Performance: Catalysts drive a wide range of commercial processes and are critical components of energy systems. The efficiency of the catalysts, typically small atomic clusters with high surface areas, depends on many factors. These factors include the materials that hold the catalysts in place during use. Scientists used precisely synthesized one-atom-thick carbon (graphene) nanoribbons as the support for a gold catalyst. Changing the support changed the chemical environment. The result was a faster and more efficient catalyst. Specifically, the catalyst was over 100-fold faster than the same catalyst on the traditional carbon support. These composite catalysts can be used to transform carbon dioxide to carbon monoxide, a first step in the conversion of carbon dioxide into fuels or other useful chemicals.

Weaving a Fermented Path to Nylons: Known for extreme toughness, strength, and elasticity, nylon is used for flooring, car parts, food packaging, and much more. Manufacturing the millions of tons of nylon produced annually involves making five- and six-member ring

compound precursors, called lactams, in harsh chemical and intensive heat conditions. Biological production of these highly valued precursors would reduce the need for energy-intensive heat and harsh chemicals. However, biological production has been limited due to a lack of enzymes that carry out crucial steps at room temperature and pressure. Researchers at the Joint BioEnergy Institute have demonstrated production of the lactam precursors via microbial fermentation using an enzyme in the bacteria *Streptomyces aizunensis.*

Plasma Turbulence Generates Flow in Fusion Reactors: Rotation and rotation shear benefit confinement in fusion plasmas. Such rotation is provided primarily by injecting momentum into the plasma with energetic neutral particles. The amount of torque that can be applied to the plasma is more limited than in present devices for future larger fusion reactors. Creating plasma self-generated flows would improve confinement and stability in future fusion reactors. Observations at DIII-D National Fusion Facility have shown that simply heating the plasma core of a fusion reactor causes it to generate a sheared flow. Researchers ran theoretical simulations to predict the intrinsically generated torque and plasma rotation, which were in agreement with observations. The results of the modeling shows that we now have a quantitative understanding of the amount of sheared flow that can be generated using this self-generated intrinsic torque. This work is a vital step towards definitively predicting the physics behind these self-generated flows. The potential impact of this research is better fusion reactor performance in terms of improved stability.

Laser Stripping Powers Protons: Scientists use high power proton beams to answer tough questions about materials. Industry uses high-power proton beams in medical and security applications. Large-scale accelerators deliver short, powerful pulses of proton beams. Creating the beams involves accumulating multiple lower power beam pulses to produce a single high-power beam pulse. The achievable proton beam powers are limited by the technology used to merge the incoming low-power pulses into a final high-power beam pulse. To resolve this limitation, scientists have demonstrated a new technique, called laser stripping, at the Spallation Neutron Source. This was the first demonstration of the technique for realistic time-scale beams in an accelerator. The technique resulted in a factor of 1000 increase in pulse duration. Laser stripping means next-generation accelerators will have significantly higher beam powers, resulting in increased rates of particle production and higher particle collision rates.

The Roadmap to Quark Soup: By tracking particles that emerge from nuclear collisions at the Relativistic Heavy Ion Collider (RHIC), located at Brookhaven National Laboratory in New York, physicists are seeking to understand nuclear phase transitions to learn how ordinary nuclei "melt" to create a quark-gluon plasma. The plasma is the stuff that existed in the very early universe before atoms or even protons and neutrons. By understanding how nuclei melt, they can learn how the quarks and gluons that ultimately make up these nuclear particles "freeze out" as they did at the dawn of time to form the visible matter of today's world. This "freeze out" is known as the "critical point." A new theoretical analysis has shown the researchers exactly what to look for the closer they get to this critical point to prove its existence. Specifically, the analysis predicts patterns in how the properties of particles emitted from the collisions are correlated as the energy of the collisions changes.

Goal 2: Nuclear Security

Strengthen national security by maintaining and modernizing the nuclear stockpile and nuclear security infrastructure, reducing global nuclear threats, providing for nuclear propulsion, improving physical and cybersecurity, and strengthening key science, technology, and engineering capabilities

Objective 4
Maintain the safety, security, and effectiveness of the nation's nuclear deterrent without nuclear testing

Objective 5
Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure

Objective 6
Reduce global nuclear security threats

Objective 7
Provide safe and effective integrated nuclear propulsion systems for the U.S. Navy

Contributing Programs

- National Nuclear Security Administration
- Intelligence and Counterintelligence
- International Affairs

DOE's national security missions support nuclear security, intelligence, and counterintelligence operations, and related national security needs. The National Nuclear Security Administration's (NNSA) nuclear security missions implement four major endeavors: (1) use science to maintain a safe, secure, and effective nuclear weapons stockpile that deters adversaries and protects allies; (2) reduce the threat posed by nuclear proliferation and terrorism, including unsecured or excess nuclear and radiological materials both domestically and internationally; (3) prepare to respond to, and mitigate, nuclear and radiological incidents worldwide; and (4) support safe and effective integrated nuclear propulsion for the U.S. Navy.

NNSA supports national security priorities articulated in the NNSA Enterprise Strategic Vision, the Stockpile Stewardship and Management Plan (SSMP), and Prevent, Counter, and Respond – A Strategic Plan to Reduce Global Nuclear Threats (NPCR). DOE's work reduces global nuclear security threats while permitting access to peaceful nuclear power for nations that respect the international nonproliferation regime.

Through the NNSA nuclear security enterprise, DOE plays a central role in sustaining a safe, secure, and effective nuclear deterrent and combating proliferation and nuclear terrorism. The science, technology, engineering, and manufacturing capabilities resident in the nuclear security enterprise underpin NNSA's ability to conduct stockpile stewardship and solve the technical challenges of verifying treaty compliance, combating nuclear terrorism and proliferation, and guarding against the threat posed by nuclear technological surprise. For example, the unique knowledge gained in nuclear weapons design developed to support the U.S. stockpile plays a critical role in the ability to understand strategic threats worldwide. DOE provides the design, development, and operational support to provide militarily effective naval nuclear propulsion plants and ensure their safe, reliable, and long-lived operations.

NNSA is addressing aging infrastructure by providing a modernized, responsive infrastructure to prepare for a range of potential future nuclear deterrence challenges. With its extensive science and technology capabilities and nuclear expertise, DOE provides support to defense, homeland security, and intelligence missions, primarily through national laboratories and sites. DOE also provides expert knowledge and operational capabilities for physical security, classification, emergency preparedness and response, nuclear forensics and cybersecurity.

Examples of FY 2017 program accomplishments:

Stockpile Stewardship: The science-based Stockpile Stewardship Program has allowed the Secretaries of Energy and Defense to certify to the President for the twenty-first time that the U.S. nuclear weapons stockpile remains safe, secure, and effective without the need for underground explosive nuclear testing.

W76-1 Life Extension Program (LEP): The W76-1 LEP extends the originally designed warhead service life an additional 30 years. NNSA started producing the W76-1 in FY 2008 and, by the end of FY 2017, NNSA has completed more than 80 percent of the total number of W76-1 warheads scheduled for delivery to the Navy. NNSA expects to complete production of the W76-1 on schedule in FY 2019. The Navy will then have a refurbished warhead for its ballistic missile submarine fleet that will last for at least another 30 years.

B61-12 Life Extension Program (LEP): NNSA continues to make progress on the B61-12 LEP, which will consolidate four variants of the B61 gravity bomb and improve the safety and security of the oldest weapon

system in the U.S. nuclear stockpile. In October 2016, NNSA completed the Baseline Cost Report, updating the program cost and schedule. In March 2017, NNSA completed the First System Qualification Drop Test. Delivery of the first production unit of the B61-12 in FY 2020 remains on schedule. NNSA is responsible for refurbishing the nuclear explosives package and updating the electronics for this weapon. The Air Force will provide the tail kit assembly under a separate acquisition program. When fielded, the B61-12 gravity bomb will support both Air Force long-range nuclear-capable bombers and dual-capable fighter aircraft, bolstering central deterrence for the United States while also providing extended deterrence to America's allies and partners.

W88 Alteration (Alt) 370 Program: In February 2017, NNSA completed the W88 Alt 370 Baseline Cost Report, which provided a high-fidelity cost estimate. Currently in Production Engineering (Phase 6.4), the W88 Alt 370 is on schedule, with the first production unit planned in December 2019. The W88 Alt 370 includes a new Arming, Fuzing and Firing system, lightning arrestor connector, trainers, flight test assemblies, and replacement of conventional high explosives main charges and associated components.

Countering Illicit Trafficking: In FY 2017, partners in 12 countries, including Kazakhstan, Moldova, and Ukraine, assumed operations, maintenance, and management responsibilities for 88 radiation detection systems. This progress reflects partner country commitment to sustain these systems. FY 2017 successes demonstrate continued impact in enhancing the global detection architecture and contribution to increased security for the United States.

Enhancing Radiological Security in the United States and Abroad: NNSA partnered with hospitals, universities, and industry to provide voluntary security enhancements for high-activity radioactive sources in the United States. NNSA has secured more than 2,100 buildings containing radiological materials and recovered more than 58,000 radioactive sources worldwide. In addition, NNSA is prioritizing the securing of Cesium-137 through accelerated domestic and global efforts. Cesium-137 sources are considered highly attractive as their chemical properties make them prime targets for effective "dirty bombs" or radiological dispersion devices. NNSA provided technical and financial assistance to enhance the security of these types of high-activity radioactive sources through cooperation with international partners. These efforts focused on enhancing security throughout the lifecycle of radioactive sources, including encouraging adoption of non-isotopic alternatives to radioactive sources.

Nonproliferation and Arms Control Verification: NNSA successfully executed a field experiment with interagency partners using a classified test bed at the Nevada National Security Site. The test bed provided a unique operational model for the whole of Government to develop and exercise capabilities for detecting and identifying proliferation signatures of interest, such as of machines and operational activities, and to develop capabilities that detect these signatures. NNSA established the multi-disciplinary Low Yield Nuclear Monitoring multi-laboratory R&D venture addressing the key obstacles that hamper the detection of low-yield, decoupled, evasive nuclear tests. NNSA also collected experimental data sets for validating forward modeling and simulation tools to predict signals produced by high explosives tests.

Nuclear Detonation Detection: NNSA delivered to the U.S. Air Force (USAF) two Global Burst Detector (GBD) sensor suites for integration on future Global Positioning System III navigation satellites. The GBD sensor suite detects, identifies, and precisely locates nuclear explosions. These are the latest space-based sensor additions to the U.S. Nuclear Detonation Detection System. The sensor deliveries continue the successful 54-year partnership between the USAF, NNSA, and the national laboratories.

Material Management and Minimization (M3): In 2017, NNSA reduced nuclear dangers by minimizing, and where possible, eliminating nuclear materials. This work in 2017 included successful cooperation with the International Atomic Energy Agency, China, and Ghana to convert Ghana's Miniature Neutron Source Reactor to low enriched uranium (LEU) fuel, conversion of South Africa's molybdenum-99 production from HEU to LEU, and confirming the shutdown of Canada's Slowpoke reactor in Alberta. As of the end of FY 2017, NNSA's has converted or verified the shutdown of 100 HEU facilities worldwide. In addition, NNSA worked collaboratively with several countries to remove fresh HEU and HEU spent fuel from 7 facilities. Since 1996, NNSA removed or confirmed the disposition of more than 6,367 kilograms of weapons-usable nuclear material and has eliminated all HEU from 31 countries and Taiwan. NNSA has also completed the disposition of a cumulative total of over 157 metric tons (MT) of surplus weapons-grade uranium and converted a cumulative total of more than 675 kilograms of plutonium to an oxide in preparation for final disposition.

Nuclear Counterterrorism (NCT) Assessment: NNSA provides the nation's technical capacity to understand and defeat Nuclear Threat Devices (NTDs), including Improvised Nuclear Devices (IND) and lost or stolen foreign nuclear weapons. In 2017, NCT Assessment conducted multiple studies and experiments at NNSA's National Security Laboratories and Sites, including efforts to build and validate predictive Render Safe capabilities and a full range of Standoff Disablement experiments and modeling activities. Additionally, NCT Program engaged in over a dozen technically-informed exchanges with the Republic of France and the United Kingdom through the Nuclear Threat Reduction (NTR) channels. NCT Program efforts inform DOE and NNSA policies, procedures, and operational capability development, directly supporting DOE's strategic Nuclear Security goal.

National Technical Nuclear Forensics: As a prime technical resource, DOE/NNSA partners with other federal agencies in the nuclear forensics mission, which ultimately

supports attribution and contributes to nuclear material security by holding nations accountable if their material is used in an attack. In 2017, NNSA participated in five interagency exercises aimed at ensuring the nuclear forensics community is prepared to respond to a pre- or post-detonation incident involving an IND.

Nuclear Incident Response: NNSA Crisis Response and Consequence Management operations focus on preventing and protecting the United States and its allies form threats and adversaries associated with nuclear/radiological materials and devices. These programs provided technical support at dozens of major public events, helping ensure that the venues were safe from radiological or nuclear threats. OPSIS II technical challenge was conducted September-October 2017 at the Nevada National Security Site, bringing together the counter nuclear terrorism render safe communities from the U.S., UK, and France. The challenge provided a venue for the exchange of technical information and best practices, improving the nuclear crisis response capabilities of the global render safe community.

S1B Reactor Plant Design: NNSA continued development on the S1B reactor plant, submitting the reactor vessel assembly final design, recommending core basket and closure head final design for approval, and delivering the rod control power supply engineering model. The reactor design is for a life-of-ship core that supports over 40 years of operation, allowing fulfillment of the strategic deterrence mission with two fewer submarines than the Ohio-class at a savings of $40 billion. These efforts support FY 2019 advance procurement of long lead reactor plant equipment to support FY 2021 lead ship construction start.

Goal 3: Management and Performance

Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue departmental missions

Objective 8
Continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities

Objective 9
Manage assets in a sustainable manner that supports the DOE mission

Objective 10
Effectively manage projects, financial assistance agreements, contracts, and contractor performance

Objective 11
Operate the DOE enterprise safely, securely, and efficiently

Objective 12
Attract, manage, train, and retain the best federal workforce to meet future mission needs

Contributing Programs

- Environmental Management
- Legacy Management
- Chief Financial Officer
- Chief Human Capital Officer
- Chief Information Officer
- Congressional and Intergovernmental Affairs
- Economic Impact and Diversity
- Enterprise Assessments
- Environment, Health, Safety and Security
- General Counsel
- Hearings and Appeals
- Inspector General
- Management
- Project Management Oversight & Assessments
- Public Affairs
- Small and Disadvantaged Business Utilization

Attaining mission success requires a sustained commitment to performance-based management and expectations of excellence from DOE headquarters to every site office, service center, laboratory, and production facility. At the center of this goal is a highly qualified, capable, and flexible federal workforce that can execute the mission in a safe, secure, efficient, and sustainable manner. DOE cultivates a performance-based system that links work to meeting agency and Administration goals and achieves results. Management of research and development involves prioritization of those activities with the greatest potential and likelihood for impact. Research decisions are informed by rigorous peer reviews at the portfolio level and solicitation levels. A top priority has been to improve contract and project management across the DOE enterprise, along with vigilant protection of DOE's cyber networks. Below are examples of FY 2017 program accomplishments in these areas.

Resumed Disposal of Transuranic Wastes at the Waste Isolation Pilot Plant (WIPP): The WIPP facility, located 26 miles southeast of Carlsbad, New Mexico, was constructed during the 1980s. Congress limited WIPP to the disposal of defense-generated transuranic wastes. WIPP suspended operations in February 2014 when a truck fire and unrelated radiological event temporarily closed the facility. Waste emplacement at WIPP resumed in January 2017, and disposal rates are progressively increasing with operational experience and equipment upgrades.

Completed Construction of Saltstone Disposal Unit 6 at the Savannah River Site (SRS): Workers completed construction of the massive disposal unit for SRS's saltstone waste in July 2017. Salt waste makes up about 90% of the waste volume in SRS tanks. The Saltstone facility receives decontaminated salt solution after highly radioactive isotopes – primarily cesium – are removed and transferred to the Defense Waste Processing Facility to be turned to glass and stored at SRS awaiting permanent disposal.

Inspection in Amchitka, Alaska: On June 19, 2017, DOE sent a team to Amchitka in the Aleutian Islands. The team inspected possible earthquake damage on mud-pit caps that may have resulted from a 7.9 magnitude earthquake that occurred in June 2014, with aftershocks ranging from 6.0 to 6.9 magnitude within a 100-mile radius of the island. Information was collected to evaluate and assess the extent of the damage, if any, and to determine what repairs might be necessary. As a part of LM's commitment to protecting human health and the environment, LM sends out a team annually to monitor the mud-pit caps for further damage and to verify the integrity of the seven mud-pit caps on the island. The mud-pit caps are where LM's waste is intended to be stored in the long-term, and moderate damage to these mud-pit caps was noted after the quake. During the most recent 4-day inspection of the island, inspectors noted that the mud-pits were intact and that previous earthquake damage has seemingly been stabilized. LM is currently working with the appropriate

stakeholders to develop a long-term plan to monitor and maintain the site.

Financial Management: In FY 2017, CFO led the successful implementation of the reporting requirements of the Digital Accountability and Transparency (DATA) Act, with the submission and certification of the required files to the Department of the Treasury. The DATA Act mandates government-wide standards for federal spending data. CFO submitted the FY 2018 DOE Budget Request to Congress and led the accompanying rollout activities. CFO produced the combined FY 2016 Annual Performance Report / FY 2018 Annual Performance Plan. This document provided DOE performance results and outlined performance targets for FY 2018 aligned with the Budget Request.

Established Two Additional HR Shared Service Centers: During FY 2017, the Office of the Chief Human Capital Officer continued transforming human resource (HR) service delivery across the Department through the implementation of a new service delivery model, centralizing accountability for the HR line of business while consolidating operations through the establishment of shared service centers. Two additional HR shared service centers were stood-up in FY 2017, one for the Power Marketing Administrations of Western Area, Southeastern, and Southwestern Power Administrations, and another for Bonneville Power Administration, for a total of four HR shared service centers dispersed throughout the country.

Supporting FITARA Implementation: Office of the Chief Information Officer (OCIO) continues to support the roll-out of the acquisition components of the Federal Information Technology Acquisition Reform Act (FITARA) across DOE. DOE has incorporated the CIO review of IT investments in the budget formulation process. Further, DOE is working to reengineer current acquisition strategy processes to include the CIO or representative in all IT-related acquisition and execution decisions.

Ensuring Cybersecurity: In 2017, the Department initiated an effort to implement enhancements and capabilities to the existing Site Level Security Operations Center (SOC) in support of the DOE Federal enterprise. This initiative is anticipated to provide a model Site Level SOC for the DOE enterprise, supporting cybersecurity initiatives such as the Metadata Taxonomy, Data Fusion, Intelligence Threat Assessment and Sharing, and Risk Management dashboards. DOE continued to advance its multifactor authentication (MFA) efforts by implementing its enterprise Personal Identity Verification Interoperability (PIV-I) service, which has been deployed to 3 Program Offices and a total of 17 sites. As of 2017, Program Offices reported 96% PIV or equivalent strong MFA for privileged users, and 66% for standard users. The Department expanded its strong multifactor authentication services beyond the network environment. As a result, DOE has been able to stand up a Federated Identity Management Infrastructure to 62% of the enterprise. As of 2017, the Department's Identity and Access Management solution has enabled the replacement of social security numbers with unique DOE-developed identifiers for systems supporting DOE staff. Similarly, standards-based Federated Access Management Infrastructure has been deployed to 51% of DOE's entities, enabling a high level of assurance concerning MFA to systems and applications. The Department made strong progress in leveraging the EINSTEIN 3 Accelerated (E3A) intrusion prevention service offered by the Department of Homeland Security (DHS) to federal agencies. DOE completed deployment of E3A for most Department-owned and operated networks as required by the Federal Cybersecurity Enhancement Act of 2015, and is deploying the service on all networks operated on its behalf by its national laboratories, plants, and sites. The Department has started implementation of its Continuous Diagnostics and Mitigation agency dashboard, security architectural design, and planning for Phase 2. Least Privilege and Infrastructure Integrity has also been initiated.

Managing DOE Engagement: The Office of Congressional & Intergovernmental Affairs (CI) manages and oversees engagement activities with Departmental stakeholders such as Congress, State, local, and Tribal governments, and other federal agencies and others to effectively position the Department in achieving the FY 2017 goals. During FY 2017, CI staffed approximately 500 briefings and 16 hearings, assuring that the Secretary's, Department's, and Administration's policies, legislative initiatives and budget requests were communicated effectively to decision-makers and stakeholders.

Supporting and Building the DOE Workforce: The Office of Economic Impact and Diversity (ED) continued the process of staffing the new agency-level DOE Office of Equal Employment Opportunity (EEO) and developed a new training strategy in support of equitable employment opportunities that starts with the new employee orientation and progresses to supervisor programs. ED developed and deployed a new process for improving employee confidence through efficient management of employee complaints of unlawful discrimination. The Office resolved 39% of EEO Complaint filings in the informal EEO process at Headquarters, thereby saving the agency approximately $44,000 in investigative costs that would have been expended had the case moved to the formal EEO process. ED also strengthened relationships with minority serving institutions, providing more exposure to DOE employment opportunities through research orientations and internships for students. ED partnered with the National Utilities Diversity Council to develop a Utility

Workforce Toolkit for regulators, utilities, and agencies that will provide data on the state of diversity in the energy sector and forecast needs. ED hosted two conferences and completed a major place-based initiative in support of employment opportunities in both DOE and the national energy sector. The Department participated in extensive outreach programs that included minority and disadvantaged communities, women and girls, and tribal communities. ED integrated the New Inclusive Quotient into the existing formal DOE training system to allow individuals and organizations to develop new skills related to an inclusive work environment. DOE initiated new programs (such as those described above) that align with national priorities to increase participation in science, technology, engineering, and mathematics (STEM), especially by women and minorities, to enhance DOE capabilities to attract a diverse, highly skilled workforce.

Safe, Secure, and Efficient Operations: The Office of Environment, Health, Safety and Security works with DOE Program and Field Offices, the national laboratories, and contractor working groups, to improve the safety and security of DOE operations, adopt best practices, and address new challenges. For FY 2017, there were several areas DOE focused on to improve its safe, secure, and efficient operations.

Safety: The Department utilizes the Integrated Safety Management framework to ensure worker safety at DOE facilities. Consistent with this framework, DOE continued its focus on performing rigorous hazard analysis, identifying effective hazard controls; ensuring the technical competency of its workers, and providing feedback to identify safety and operational improvements (both on a local and a corporate level). Furthermore, DOE continued work on improving its safety culture through the efforts of the Department's Safety Culture Improvement Panel to share best practices, to identify and provide training, and to support and communicate safety culture improvements across the complex. In support of these efforts, the Secretary of Energy issued two video messages emphasizing the importance of a robust safety culture at the Department. DOE also focused on improving contractor assurance systems, which are key to ensuring contractor operations are meeting DOE health and safety expectations, including expectations for involvement of their corporate parents.

Physical Security: In FY 2017, DOE completed and issued the Design Basis Threat Order which significantly revised DOE's security risk management framework. Its implementation will improve the security of DOE operations, including the protection of special nuclear material. In addition, DOE and the Power Marketing Administrations continued to implement the PowerSURGE (Security Upgrades for Reliable Grid Enhancements) initiative to improve electric grid reliability through the development of an all-hazards protection strategy based on sound risk management and informed investment analyses. A growing area of security concern/focus is the potential threat of unmanned aircraft systems (UAS). In FY 2017, DOE worked with other agencies, including the Federal Aviation Administration, to evaluate UAS devices and the growing threat they pose to DOE personnel and facilities. Finally, DOE continued to expand its Insider Threat Program to protect its people and assets and to improve its Human Reliability Program to ensure DOE judiciously evaluates personnel who must meet the highest standards of reliability.

Classified Matter Protection: DOE handles a significant amount of classified material, including both newly generated and legacy information. In FY 2017, DOE developed and updated classification guides and provided training to personnel performing classification activities to support the appropriate identification, marking, and protection of classified material.

Assessing Critical DOE Functions: The Office of Enterprise Assessments (EA) conducted independent oversight assessments of DOE operations to determine compliance with DOE requirements and the effectiveness of those requirements in protecting national assets, workers, and the public. In FY 2017, EA conducted 1) safeguards and security assessments, including force-on-force and limited-notice testing, at NNSA and other DOE sites with national security assets; 2) cybersecurity assessments, including unannounced testing of classified and unclassified systems; 3) physical and cybersecurity assessments of national security and sensitive information systems and facilities, and; 4) nuclear safety, worker safety, and emergency management assessments at sites with nuclear construction/design projects, large quantities of hazardous materials, and performance issues.

Decreased Time to Decision in Personnel Security Cases: The Office of Hearings and Appeals (OHA) provides adjudication of security clearance cases that determine the eligibility of DOE federal and contractor employees to have access to classified information or special nuclear material. In FY 2017, OHA reduced the time to issue a decision in personnel security cases, after receipt of the hearing transcript, from 16 days to 15 days, a reduction of 6 percent from FY 2016.

Project Management Success: Enhanced leadership support, reinforced with improved project management policies, has resulted in 88% of construction projects completed in FY 2015-2017 within original scope baseline and within 110% of the cost established at Critical Decision-2. This result nearly reached the goal of 90% of projects established in 2008.

Strategic Sourcing Savings: The FY 2017 target is $292.4 million, or 4% of the anticipated $7.3 billion in actionable procurement spend. Overall, through Q3 FY 2017 (the latest information available), strategic sourcing

efforts indicate DOE will exceed the annual cost savings/avoidance goal by approximately 40%, or about $118 million. Projections are DOE will save/avoid a total of approximately $410 million. As part of the strategic sourcing process, DOE continues to expand use of the Federal Supply Schedules, Government-wide acquisition contracts, multi-agency contracts, and any other procurement instruments intended for use by multiple agencies (e.g., Best-In-Class) for common supplies and services. This approach will help us to achieve our strategic objective of better managing the spend to reduce the Total Cost of Ownership.

Management's Analysis, Assurances and Priorities

Analysis of Financial Statements

The Department's financial statements report the financial position and results of operations of the entity, pursuant to the requirements of 31 U.S.C. 3515(b) (United States Code). The Department's management is responsible for the integrity and objectivity of the financial information presented in these financial statements.

The statements have been prepared from the Department's books and records in accordance with generally accepted accounting principles promulgated by the Federal Accounting Standards Advisory Board and the formats prescribed by the OMB. The financial statements are prepared in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

Balance Sheet

As shown in Chart 1, the Department's total liabilities exceed total assets with the Unfunded Environmental Liabilities being the largest component of the liabilities. Significant balance changes are detailed in Charts 2 and 3. Chart 4 provides a detailed trend analysis of the changes in the Department's environmental liabilities balances over the past five years. Most of DOE's environmental liabilities are managed by the Environmental Management (EM) program which addresses the legacy of contamination from the nuclear weapons complex and includes managing thousands of contaminated facilities formerly used in the nuclear weapons program, overseeing the safe management of large quantities of radioactive waste and nuclear materials, and cleanup of large volumes of contaminated soil and water. The active facilities portion of the environmental liability includes anticipated remediation costs for active and surplus facilities managed by DOE's ongoing program operations which will ultimately require stabilization, deactivation, and decommissioning. Other legacy liabilities are divided between environmental liabilities for active sites, including estimated cleanup; and the Office of Legacy Management (LM) for post-closure responsibilities, including surveillance and monitoring activities; soil and groundwater remediation; and disposition of excess material from sites after the EM program activities have been completed. The other legacy liabilities also include the Department's share of the estimated future costs of dispositioning its inventory of high-level waste and spent nuclear fuel (SNF).

Chart 1: Total Assets and Liabilities with Breakdown of FY 2017 Liabilities

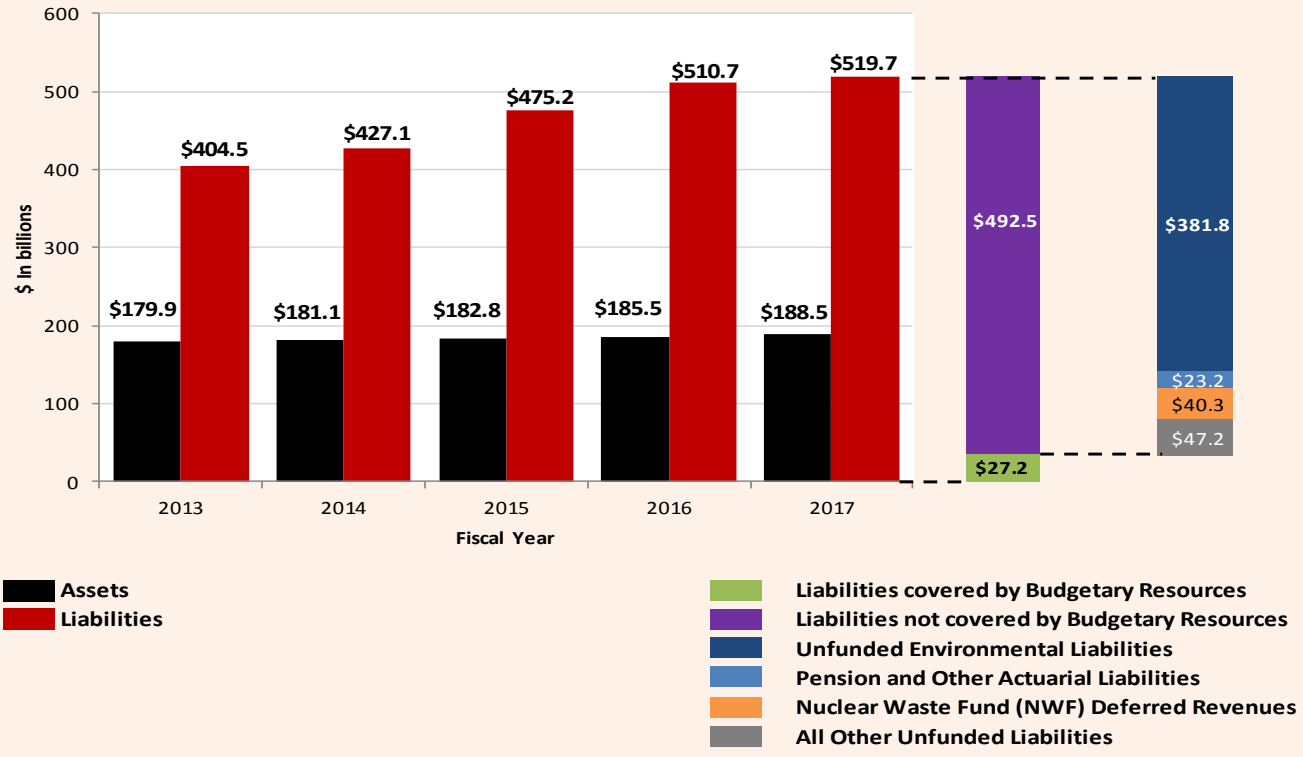
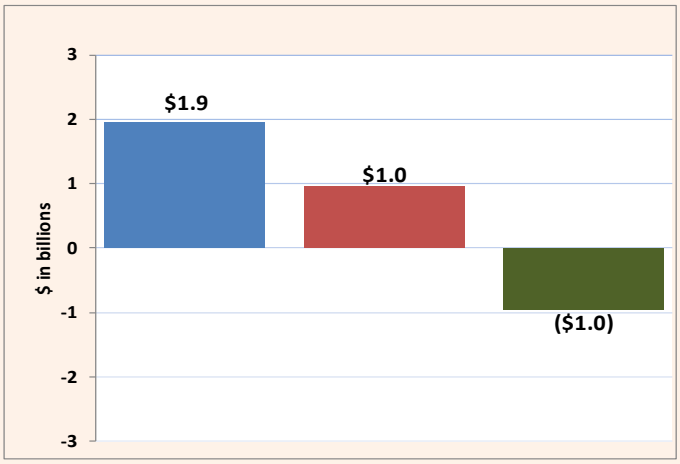


Chart 2: FY 2017 Significant Changes in Assets



Fund Balance with Treasury

The increase is primarily attributable to the increase in appropriations received and an increase in actual offsetting collections for which disbursements have not yet been recorded.

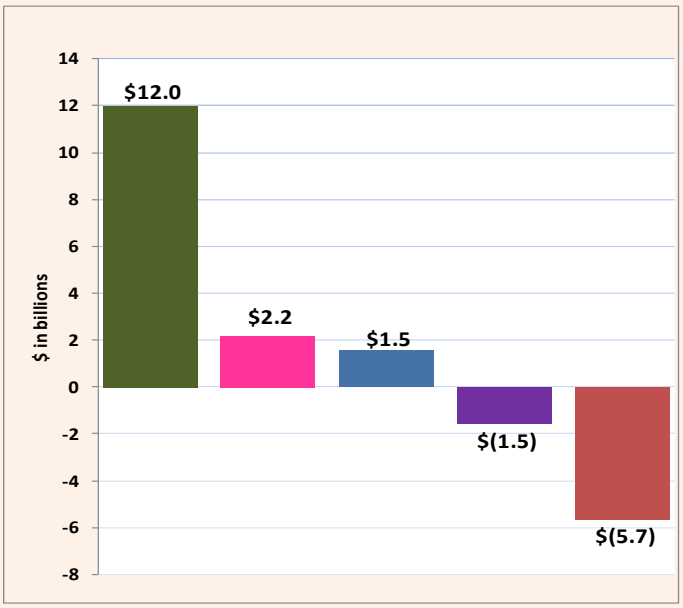
Investments

The increase is primarily from investment income received by the Nuclear Waste Fund in excess of current expenses, which is reinvested in U.S. Treasury Securities.

Loans and Loan Guarantees

Changes are primarily due to loan activity which includes disbursements, principal repayments, capitalized interest, write-offs and change in present value.

Chart 3: FY 2017 Significant Changes in Liabilities



Environmental Cleanup

The increase is primarily due to modifications of liability estimates driven by changes in technical approach, scope of activities, regulatory and legal changes, and inflation adjustments.

Pension and Other Actuarial Liabilities

Contractor pension plan liabilities decreased by $4.8 billion and other postretirement benefits plan liabilities decreased by $0.9 billion. The most significant component of the pension plan liabilities decrease resulted from an increase in asset returns and an increase in the rate used to discount the liabilities to present value (See Chart 8).

Deferred Revenues and Other Credits

Increase is from investment income in the Nuclear Waste Fund in excess of current expenses, which is recorded as an increase to deferred revenue.

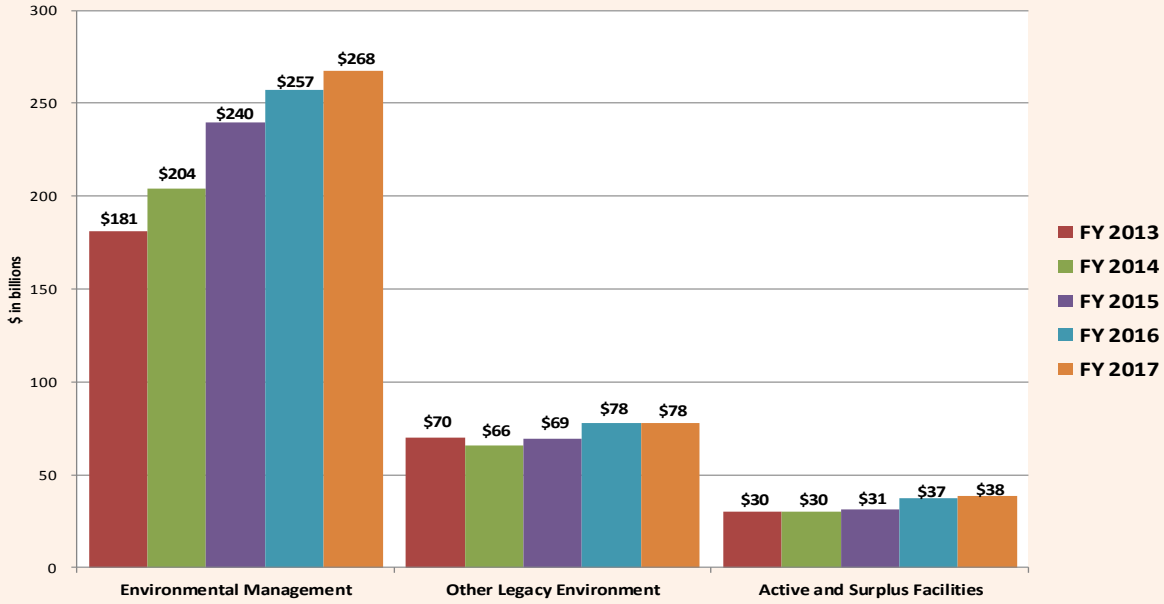
Contingencies and Commitments

Increase is primarily attributable to the Department's Spent Nuclear Fuel Liability offset by several cases that were paid out this fiscal year.

Intragovernmental Debt

Decrease primarily attributable to repayment of appropriated debt.

Chart 4: Composition of Environmental Cleanup and Disposal Liability



Net Cost of Operations

The major elements of net cost are shown in Chart 5. A breakdown of program costs (gross) by the Department's three programmatic goals, reimbursable work and other programs is provided in Chart 6.

The Department's overall net costs are primarily affected by changes to the Costs Not Assigned on the *Consolidated Statements of Net Cost*. The largest impact is due to the changes in the environmental liabilities estimates which is a component of the FY 2017 Costs Not Assigned - Chart 7.

The change in the environmental liabilities estimates costs in FY 2017 is attributed to refined estimates and the stabilization of the new active facilities model system that was implemented in FY 2016.

The Department's FY 2017 costs and unfunded liability estimates decreased by $4.8 billion for contractor pension plans and decreased by $0.9 billion for contractor postretirement benefits other than pensions (PRB) plans. The major components of these estimate changes are shown in Chart 8. The most significant components of the change in the contractor pension plan costs and liabilities resulted from favorable asset returns and changes to valuation assumptions, including an increase in the rate used to discount the liabilities to present value and a change in the rate of mortality improvements. The asset returns decreased the unfunded pension liability estimate by $3.8 billion, of which $1.5 billion was because of higher-than-expected returns. The discount rate is based on the yields of high-quality fixed income securities as of September 30, 2017 and September 30, 2016. The most significant component of the change in contractor PRB costs and liabilities resulted from a change to the valuation assumptions. This included decreases to the unfunded PRB liabilities of $0.3 billion from an increase in the rate used to discount the liabilities to present value, $0.4 billion from a change in the rate of mortality improvements, $0.1 billion from a change in assumed medical costs and healthcare inflation, $0.1 billion from changes to other demographic assumptions, and $0.1 billion because of differences in observed plan experience for the year compared to the actuarial assumptions for rates of retirement, termination of employment, compensation increases, health care inflation, and other demographic factors.

The Department's Research & Development (R&D) expenses are shown in Chart 9. These R&D expenses facilitate the creation, advancement, and deployment of new technologies and support the Department's mission to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. Overall, Research & Development expenses decreased by $0.9 billion in FY 2017.

Chart 5: Elements of Net Cost

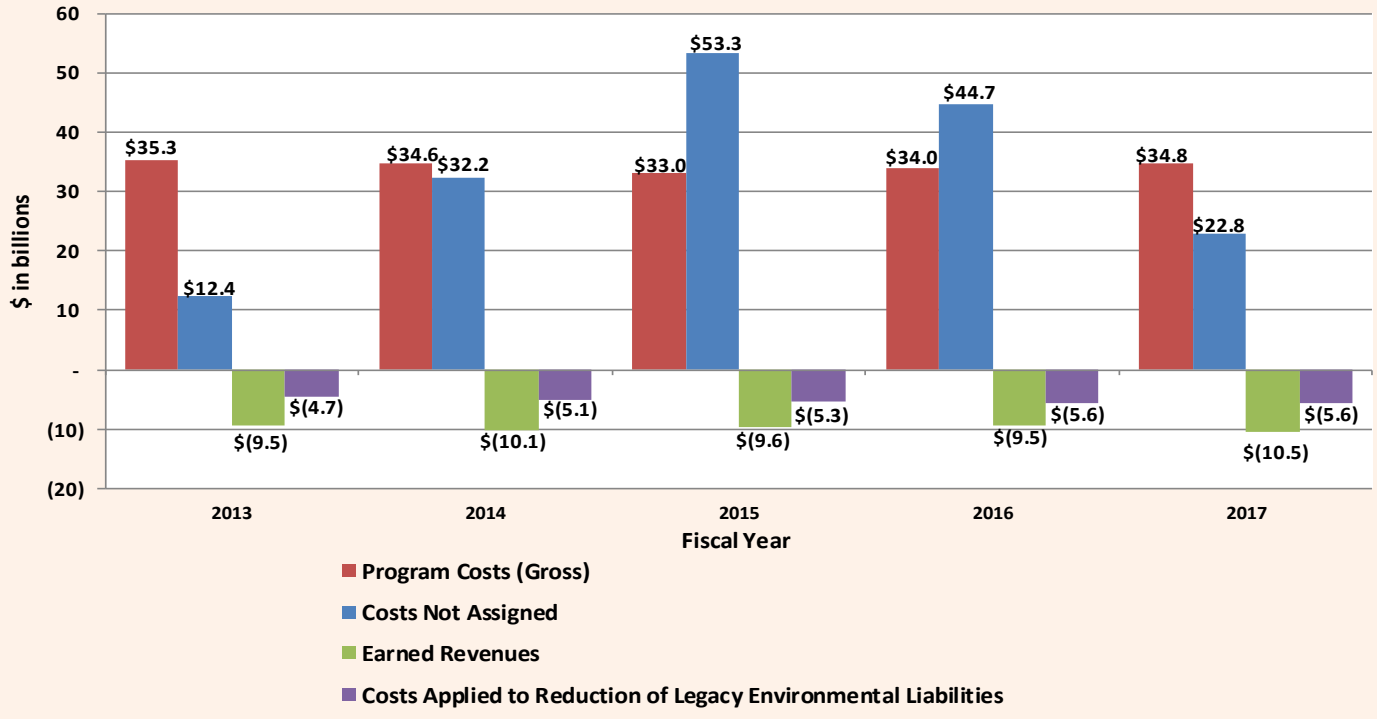


Chart 6: **FY 2017 Program Costs (Gross)**

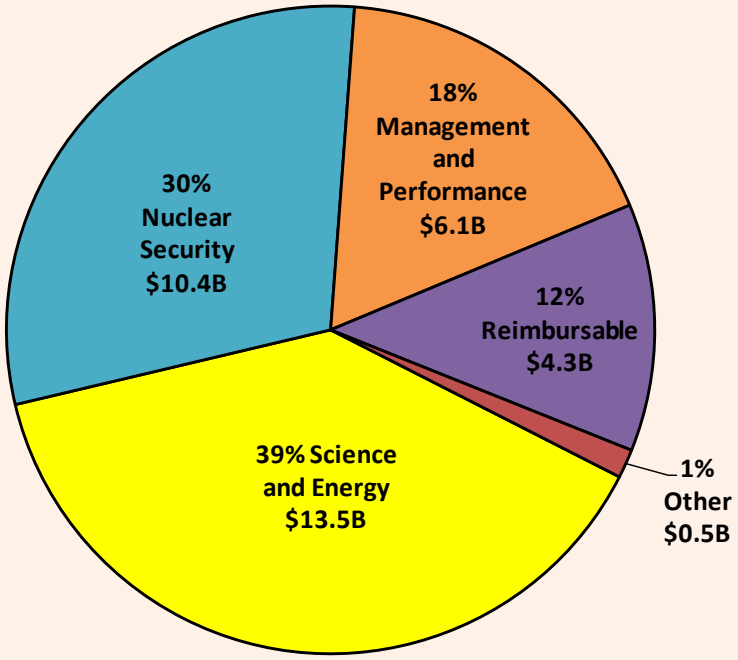


Chart 7: **Major Elements of Costs Not Assigned**

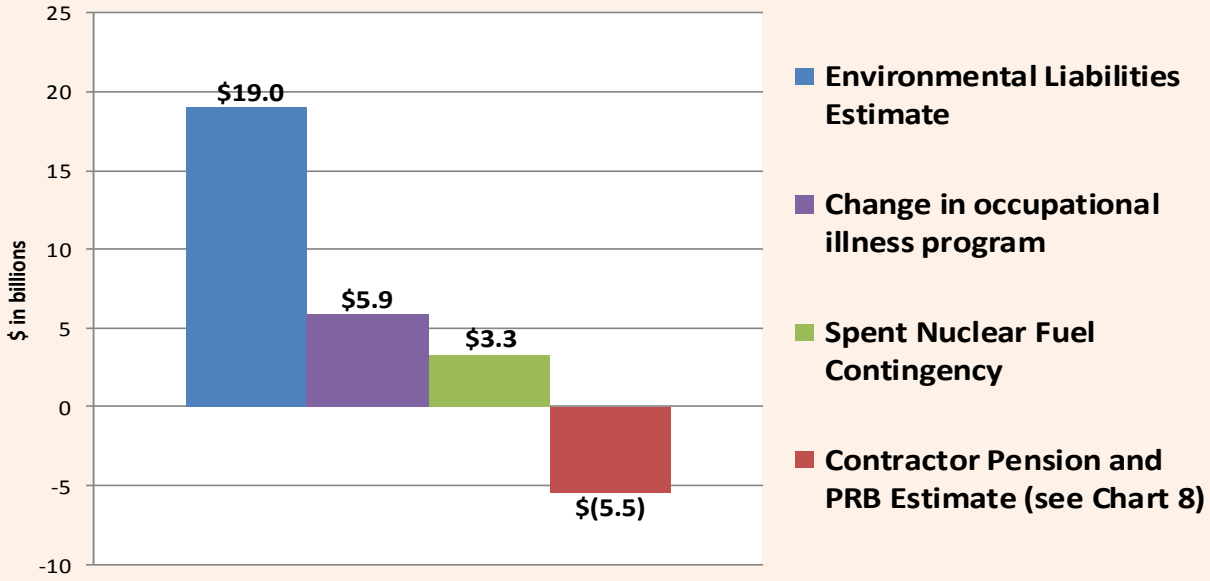


Chart 8: FY 2017 Contractor Employee Pension and Other Postretirement Benefit Plans

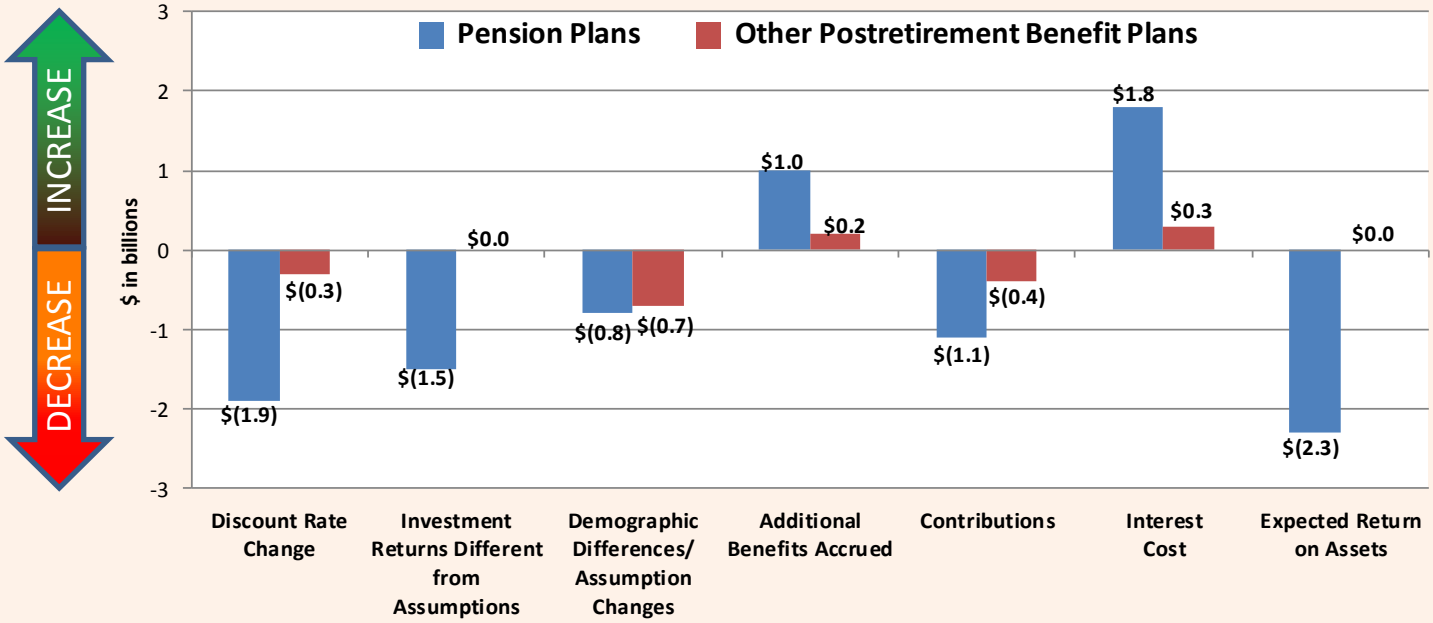
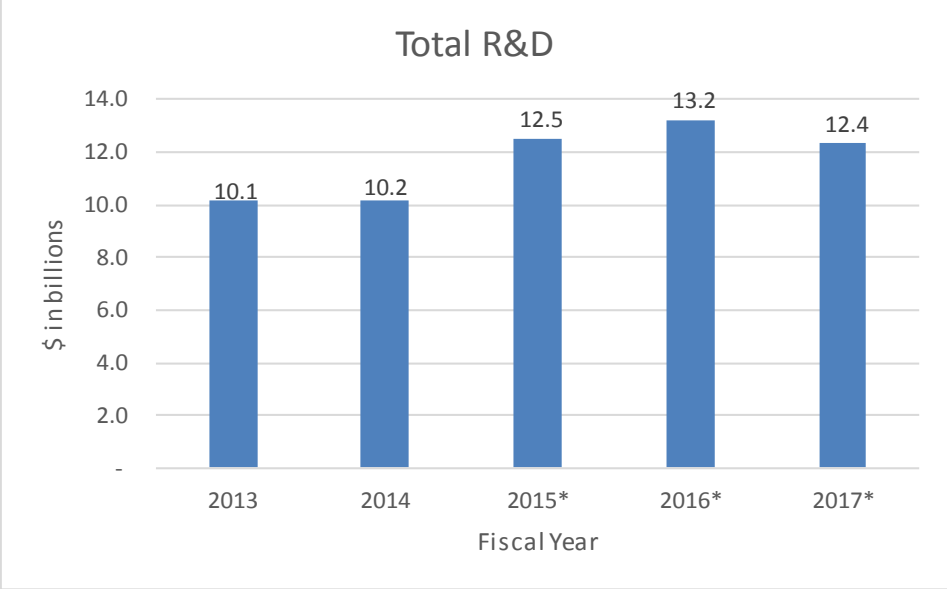


Chart 9: Research & Development



** FY 2015, FY 2016, and FY 2017 includes Program Direction, Safeguards & Security, and Infrastructure costs that support R&D activities.*

Budgetary Resources

The *Combined Statements of Budgetary Resources* provides information on the budgetary resources available to the Department for the year and the status of those resources at the end of the FY. The Department receives most of its funding from general Government funds administered by the Department of the Treasury (Treasury) and appropriated for DOE's use by Congress. Since budgetary accounting rules and financial accounting rules recognize certain transactions at different points in time, Appropriations Used on the *Consolidated Statements of Changes in Net Position* will not match costs for that period. The primary difference results from recognition of costs related to changes in unfunded liability estimates. Budget authority from appropriations on the *Combined Statements of Budgetary Resources* increased in FY 2017 by $1.3 billion from FY 2016.

As shown in Chart 10, the Department's Obligations Incurred increased by $1.9 billion from FY 2016.

Chart 10: New Obligations and Upward Adjustments (Total)

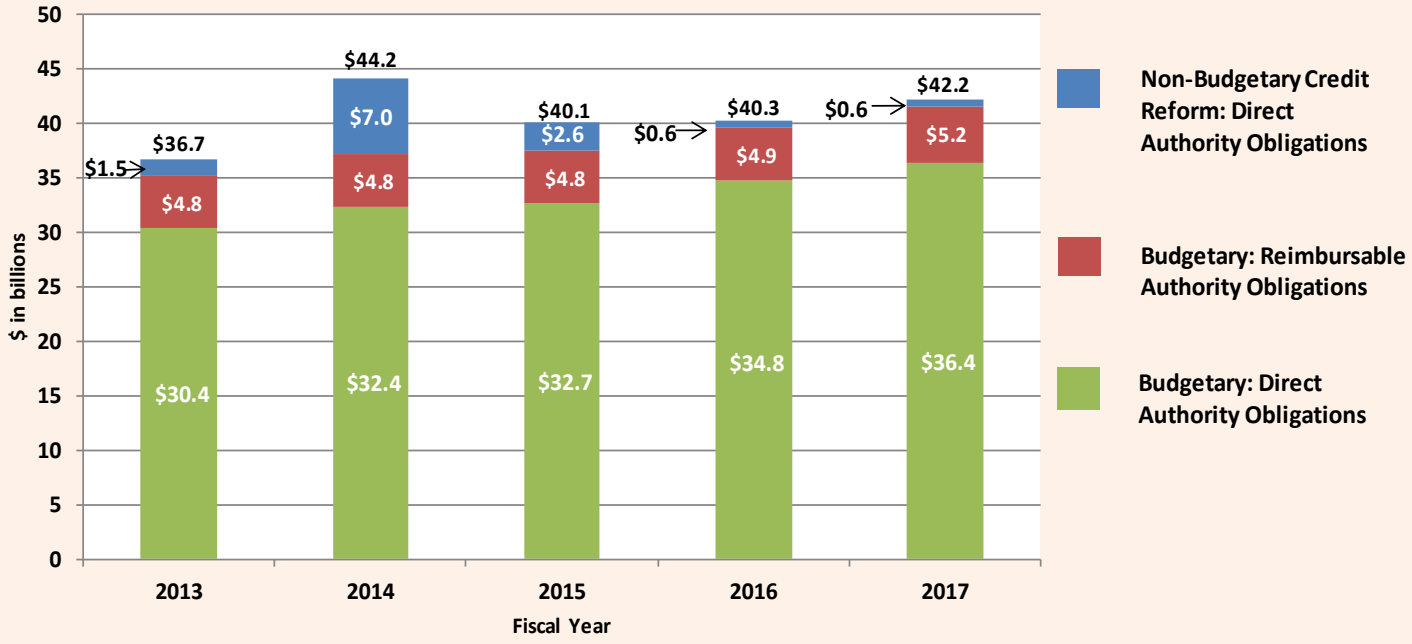


Chart 11: Linking Strategic Goals, Objectives, Budget and Cost

STRATEGIC GOALS	STRATEGIC OBJECTIVE	BUDGETARY EXPENDITURES INCURRED[a c] ($ IN BILLIONS)		PROGRAM COST[b c] (GROSS IN BILLIONS)	
		FY 2017	FY 2016	FY 2017	FY 2016
Goal 1: Science and Energy	Advance the goals and objectives in the President's Climate Action Plan by supporting prudent development, deployment, and efficient use of "all of the above" energy resources that also create new jobs and industries	$ 9.3	$ 10.4	$ 7.6	$ 7.6
	Support a more economically competitive, environmentally responsible,secure and resilient U.S. energy infrastructure	0.5	0.5	1.0	0.5
	Deliver the scientific discoveries and major scientific tools that transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation	4.9	4.9	4.8	4.8
	Subtotal Goal 1:	**14.7**	**15.8**	**13.4**	**12.9**
Goal 2: Nuclear Security	Maintain the safety, security and effectiveness of the nation's nuclear deterrent without nuclear testing	5.7	5.2	4.4	4.8
	Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure	3.6	3.4	3.0	2.7
	Reduce global nuclear security threats	1.8	2.1	1.7	1.7
	Provide safe and effective integrated nuclear propulsion systems for the U.S. Navy	1.3	1.2	1.4	1.2
	Subtotal Goal 2:	**12.4**	**11.9**	**10.5**	**10.4**
Goal 3: Management and Performance	Continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities	6.9	6.2	5.2	5.0
	Manage assets in a sustainable manner that supports the DOE mission	0.1	0.1	0.1	0.1
	Effectively manage projects, financial assistance agreements, contracts, and contractor performance	0.2	0.2	0.2	0.2
	Operate the DOE enterprise safely, securely, and efficiently	0.6	0.6	0.6	0.6
	Attract, manage, train, and retain the best federal workforce to meet future mission needs	-	-	0.1	0.1
	Subtotal Goal 3:	**7.8**	**7.1**	**6.2**	**6.0**
	Total	**34.9**	**34.8**	**30.1**	**29.3**

a. Budgetary Expenditures Incurred are amounts accrued or paid for services performed, goods and tangible property received. Budgetary Expenditures are obtained from the Budgetary Standard General Ledger and are reported/recorded based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and activities.

b. Program Costs (Gross) are taken from the Department's Consolidated Statements of Net Cost and Footnote 20 Program Costs and Earned Revenues by Strategic Objective.

c. Budgetary Expenditures and Program Cost include Recovery Act amounts.

Analysis of Systems, Controls, and Legal Compliance

(Unaudited)

Management Assurances

The Department of Energy (Department) management is responsible for establishing and maintaining an effective system of internal controls to meet the objectives of the Federal Managers' Financial Integrity Act (FMFIA). To support management's responsibilities, the Department is required to perform an evaluation of management and financial system internal controls as required by Sections II and IV, respectively, of FMFIA, OMB Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, and internal controls over financial reporting as required by Appendix A of the Circular. The following assurances are made based on the results of these evaluations, which are reflected in reports and representations completed by senior accountable managers within the Department.

The Department has completed its evaluation of management and financial system internal controls. Based on that assessment, as of September 30, 2017, the Department provides reasonable assurance that management internal controls over the effectiveness and efficiency of operations, reliability of reporting for internal and external use, and compliance with applicable laws and regulations were operating effectively in their design or operation. Furthermore, the Department provides reasonable assurance that processes are in place to identify risks and establish controls to manage those risks. Evaluation results also indicated that the Department's financial systems generally conform to governmental financial system requirements and substantially comply with requirements of the Federal Financial Management Improvement Act.

In addition, the Department is providing reasonable assurance that internal controls over financial reporting as of June 30, 2017, were working effectively and no material weaknesses were identified in the design or operation of the specific controls over financial reporting. This assessment and evaluation of internal controls over financial reporting includes safeguarding assets and compliance with applicable laws and regulations, as required by Appendix A of OMB Circular No. A-123 and Departmental requirements. The evaluation required an assessment of both entity and process controls.

While the Department has no material weaknesses to report as a result of the above internal control evaluations, the Department continues its work to address Management Priorities. These Management Priorities represent the most important strategic management issues facing the Department in accomplishing its mission now and in the coming years.

Rick Perry
November 15, 2017

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act (FMFIA) of 1982 requires that agencies establish internal controls and financial systems to provide reasonable assurance that the integrity of federal programs and operations is protected. Furthermore, it requires that the head of the agency provide an annual assurance statement on whether the agency has met this requirement and whether any material weaknesses exist.

In response to the FMFIA, the Department developed an internal control program which holds managers accountable for the performance, productivity, operations and integrity of their programs through the use of internal controls. Senior managers at the Department each year evaluate the adequacy of the internal controls surrounding their activities and determine whether the controls conform to the principles and standards established by the Office of Management and Budget (OMB) and the Government Accountability Office (GAO). The results of these evaluations and other senior management information are used to determine whether there are any internal control matters to be reported as material weaknesses. The Departmental Internal Control and Audit Review Council provides oversight of the internal control program and advises the Secretary on the Statement of Assurance.

OMB Circular No. A-123, Appendix A

Appendix A of OMB Circular No. A-123 provides requirements to agencies for conducting management assessment of internal control over financial reporting. The Department's evaluation for FY 2017 did not identify any material weaknesses in financial controls as of, or subsequent to, June 30, 2017.

Federal Financial Management Improvement Act

The Federal Financial Management Improvement Act (FFMIA) of 1996 was designed to improve federal financial management and reporting by requiring that financial management systems comply substantially with three requirements: (1) federal financial management system requirements; (2) applicable federal accounting standards; and (3) the United States Government Standard General Ledger at the transaction level. Furthermore, the Act requires independent auditors to report on agency compliance with the three stated requirements as part of financial statement audit reports.

The Department has evaluated its financial management systems and has determined that they substantially comply with federal financial management systems requirements, applicable federal accounting standards and the United States Government Standard General Ledger at the transaction level.

Management Priorities

(Unaudited)

The Department of Energy (DOE) carries out multiple complex and highly diverse missions. Although the Department is continually striving to improve the efficiency and effectiveness of its programs and operations, there are some specific areas that merit a higher level of focus and attention. These areas often require long-term strategies for ensuring stable operations and represent the most daunting management priorities the Department faces in accomplishing its mission.

The Reports Consolidation Act of 2000 requires the Inspector General (IG) to prepare an annual statement summarizing what they consider to be the most serious management and performance challenges facing the Department. These challenges are included in the Other Information section of this report. Similarly, in FY 2017 the GAO issued its biennial "High Risk Series" update which included DOE management of major contracts and programs with costs of $750 million or greater and the U.S. Government's environmental liability for which DOE shares responsibility with other federal agencies.

The Department, after considering all critical activities within the agency and those areas identified by the IG and GAO, has identified eight management priorities that represent the most important strategic management issues facing the Department now and in the coming years. The IG-identified challenges, GAO-identified high-risk issues, and DOE management priorities are presented in the table at the end of this section. In accordance with the GPRA Modernization Act of 2010, DOE has included performance measures related to the Management Priorities in the DOE FY 2016 DOE Annual Performance Report/FY 2018 Annual Performance Plan, available at https://www.energy.gov/cfo/downloads/fy-2016-doe-annual-performance-report-fy-2018-annual-performance-plan.

CONTRACT AND MAJOR PROJECT MANAGEMENT

Key Challenges: The Department is the largest civilian contracting agency in the Federal Government and spends approximately 90% of its annual budget on contracts to operate its scientific laboratories, engineering and production facilities, and environmental restoration sites and to acquire capital assets. Contractors at DOE sites and laboratories perform critical missions that include maintaining the nuclear weapons stockpile, cleaning up radioactive and hazardous waste resulting from the legacy of the Manhattan Project, and conducting some of the world's most sophisticated basic and applied energy and scientific research activities. To conduct these missions, the Department must manage some of the largest, most complex capital asset projects in either the public or private sector.

In 1990, GAO designated DOE's Contract Management—which has included both contract administration and project management—as a high-risk area because of historical challenges with project execution at DOE. Since that time, DOE has made significant improvements in contract and project management. For example, from 2015 through 2017, DOE completed 88% of its construction projects successfully, with no more than a 10% increase over the original cost baseline.

On February 15, 2017, the GAO published its latest High-Risk List Update. GAO continued its focus on major contracts and projects—those with an estimated cost of $750 million or greater—executed by the National Nuclear Security Administration (NNSA) and the Office of Environmental Management (EM), which have presented significant management challenges. GAO acknowledged DOE's progress in monitoring the effectiveness and sustainability of corrective actions, while noting the challenges that EM and NNSA face in ensuring they have the capacity (both people and resources) to mitigate risks.

Departmental Initiatives: In FY 2017, the Department continued to make significant progress in addressing this management priority. In particular, DOE is addressing the GAO February 2017 High-Risk Series report to Congress that identified five criteria that DOE must focus on to improve contract and major project management, including:

- Sustain the leadership commitment to address its contract and project management challenges;
- Commit sufficient people and resources to resolve its contract and project management problems;
- Ensure its corrective action plan and the initiatives needed to address underlying causes of contract and project management problems are up-to-date and address root causes;
- Demonstrate progress in implementing corrective measures, especially measures intended to improve the performance of major projects; and
- Monitor and independently validate the effectiveness and sustainability of its corrective measures, particularly for major projects.

To address these criteria, DOE senior leadership launched a comprehensive effort to identify reforms to improve contract and project management. As a result, DOE is adopting a more risk-based approach to project management which will enable the Department to maintain its high level of performance in managing projects while focusing greater resources and senior-level attention on complex, high-cost projects, which are the current focus of GAO's High-Risk List. Similarly, DOE is building upon existing efforts to enhance the

effectiveness of our Management and Operating (M&O) contractors, many of which execute DOE's projects. DOE will use a risk-based approach to identify reforms that are appropriate for individual contractors and sites with consideration to the mission, as well as worker and public safety.

Over the next two years, DOE will continue its efforts to address the GAO criteria to improve contract and major project management, including the following:

- Improving acquisition planning for our M&O and other major contracts to ensure that DOE has a firm understanding of contract requirements, which will enable DOE to more effectively hold contractors accountable and help ensure that contract objectives are met;
- Completing reforms of National Laboratory Policies consistent with recommendations from the DOE Regulatory Reform Task Force;
- Issuing guidance to strengthening cost estimating and the analysis of alternatives to better meet mission needs;
- Improving the quality of enterprise-wide cost information available to DOE managers and key stakeholders;
- Applying DOE's enhanced contract and project management practices to the Department's major legacy projects; and
- Implementing the requirements of the new Program (Project) Management Improvement Accountability Act (PMIAA), to include new DOE program management policy.

SECURITY

Key Challenges: Ensure the security of national assets entrusted to DOE while enhancing the Department's productivity to achieve mission objectives. The safeguarding and protection of national assets entrusted to DOE are vital to preserving the highest ideals of America's way of life.

Departmental Initiatives: In FY 2017, the Department published a new Design Basis Threat (DBT) that deliberately targeted protecting vulnerabilities by expanding Protection Levels. The new DBT replaced the former Graded Security Protection (GSP); consolidated and improved standards for special nuclear material storage facilities; and restructured security management of personnel, special equipment, and facilities. The Department will continue to pursue safeguards and security improvements in the following areas:

Security Risk Analysis and Design Basis Threat: The Department is updating its risk analysis and vulnerability assessment processes to improve the complex's security postures. DOE is also working to deploy more cost-effective security measures and to consolidate and improve nuclear material storage facilities to reduce security risks. The DOE Chief Security Officers approved the use of MAPRITE and Advanced Computer Tool Program (ACTICI) to enhance security risk analysis and processing of classified material. DOE is collaborating with DOD, Defense Threat Reduction Agency (DTRA), and the Nuclear Regulatory Commission to develop a common basis for protection of nuclear weapons and special nuclear material at the national level, and to support better communication and transparency with key decision makers in Congress and the Executive Branch. DOE's Office of Intelligence and Counterintelligence is analyzing potential external threats to the DOE complex and providing assessments addressing credible and emerging threats to personnel, assets, facilities and missions to individual sites.

Access Authorization and Insider Threat Program: DOE is examining alternatives to streamline the access authorization process and to improve the Department's Insider Threat Program. DOE utilizes an Identity Credentialing and Access Management program (ICAM) which maps to the federal ICAM initiative, implements Homeland Security Presidential Directive-12 and DOE policy, and supports other security clearance/access-authorization, credentialing and information technology-based initiatives. Adopting these technologies is making enhancements to the Insider Threat Program by improving detection, deterrence , and mitigation strategies by federal and contractor employees as well as improving insider threat training, communication, awareness, and education material. DOE is also working to enhance its Human Reliability Program (HRP) by revising its HRP Regulation to address known issues, providing additional training to foster consistent implementation across the Department, and collaborating with the DOD's Personnel Reliability Program on establishing a stronger more precise platform.

Effective Security Technology Solutions: DOE is partnering with the Power Marketing Administrations, the North American Electric Reliability Corporation, and the DOD's Counter-terrorism Technology Support Office to identify, test, and implement cost-efficient and performance-effective security technologies and programs.

Unmanned Aerial Systems: DOE is coordinating with the Federal Aviation Administration and other federal agencies on security measures to protect DOE facilities from potential threats from Unmanned Aerial Systems.

Foster Enterprise-Wide Security Solutions: DOE is using the Chief Security Officers and the Department's Security Committee to foster collaborative enterprise-wide security solutions, identify and implement

cutting-edge corporate security strategies, and guide security policy development. It is also improving the Department's security culture by focusing attention on leadership development and information sharing. DOE is providing intergovernmental coordination on the various Security Executive Agent Directives (SEAD) to ensure compliance, and consistent implementation of SEADs addressing the conduct of investigations, use of polygraph, use of social media information in background investigations, and reporting requirements by covered individuals.

Protection of Classified Material: DOE has and uses a large amount of archived legacy classified material as well as sensitive unclassified information. DOE has significant programs in place to review and update information classification policy and guidance to stay abreast of emerging programs, technologies and threats in order to protect national security interests. DOE develops and promotes the use of training, communication, and tools to improve the accuracy and productivity of derivative classifier determinations throughout the Department. DOE also supports the National Declassification Center to ensure legacy government documents are released to the public to promote open government and do not impact national security interests. Furthermore, DOE has initiated a significant effort to coordinate with other federal agencies on efforts to improve protection of controlled unclassified information.

Security Oversight: DOE conducts security surveys and self-assessments and implements independent security performance oversight and enforcement programs to maintain stakeholder and public confidence.

ENVIRONMENTAL CLEANUP

Key Challenges: For over 25 years, EM has worked to clean up the environmental legacy of five decades of nuclear weapons production and government-sponsored energy research. While significant progress has been made, some of the highest risk and most technically complex work still remains.

Technical and programmatic risks and uncertainties are an inherent part of complex cleanup projects. 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. Cleanup activities can last for decades and often require first-of-a-kind solutions. Furthermore, the legacy of the Manhattan Project, Cold War, and other nuclear fuels programs includes thousands of remaining excess contaminated facilities currently within the EM Program, and many more facilities identified in other DOE programs.

EM's cleanup work at most sites is governed by one or more regulatory agreements or court orders that establish the scope of work to be performed and the dates by which specific milestones must be accomplished. As a result, the duration and diversity of past research development, testing, and production, creates a level of uncertainty about the amount and composition of waste and the nature and extent of environmental contamination. Initial regulatory milestones were developed based on the best available information about a site's condition, with the understanding that further characterization would be needed. As the scope of the potential cleanup work is better defined, EM shares updated characterization data to negotiate or revise milestones and remedy decisions with the U.S. Environmental Protection Agency (EPA) and state regulators, with stakeholder involvement.

Departmental Initiatives: EM is pursuing numerous initiatives to improve its performance. Specifically, the EM Program:

- Continues to seek opportunities to increase efficiency and performance to ensure maximum cleanup value for every dollar invested in the EM Program;
- In accordance with applicable statutes and implementing regulations, evaluates federal facility agreement cleanup milestones, permits, and decisions with regulators to ensure they protect human health and the environment while appropriately balancing cost;
- Continues to develop and deploy new and innovative technologies, approaches, and modeling capabilities resulting in significant improvements in safety and cost and schedule savings;
- Strives to identify opportunities to make strategic investments to reduce life-cycle costs while minimizing project and program schedules. Specific goals include:
  - Completing the Technology Development Program Plan and continuing with its implementation;
  - Integrating HQ and site assessment plans to allow field offices to better prepare for and support oversight activities and to maximize benefit for assessments for HQ and the field;
  - Shifting up to 10% of existing Headquarters (HQ) full-time equivalents (FTEs) to the field over the next five years, using attrition and incentivizing transitions to the field as appropriate;
  - Implementing the Direct Feed Low-Activity Waste strategy at the Office of River Protection and continue those activities necessary to resolve technical issues associated with the Pretreatment and High-Level Waste facilities;
  - Continuing to focus on risk reduction ensuring cleanup activities are safe, environmentally

responsible, cost effective, efficient, and prioritized;
  - Partnering with national laboratories, industry, academia, and the U.S. Army Corps of Engineers to ensure the best scientific and engineering resources are integrated into decision-making and the selected technologies, design, and construction approaches help reduce risk, and accelerate project completion for new projects;
  - Improving acquisition planning practices by focusing on achieving early consensus among key stakeholders about the acquisition strategy; and
  - Strengthening the integration of acquisition, budget, and project management processes so that contract statements of work and deliverables are based on clear project requirements and robust front-end planning and risk analysis. EM is also ensuring nuclear safety requirements are addressed early and modifications to the contract and project baseline are managed through strict change-control processes.
- Furthermore, EM sites at Richland, Office of River Protection, Savannah River, Portsmouth, Paducah, Oak Ridge, West Valley, Carlsbad, Idaho, and Moab have signed partnering agreements with their major contractors. Partnering agreements create win-win scenarios where both the federal and contractor staff understand and respect the rules of engagement and build better business relationships. EM is working to build stronger relationships with oversight organizations to improve communications and demonstrate transparency and accountability in EM contract and project management;
- DOE published its Report to Congress, "*Plan for Deactivation and Decommissioning of Nonoperational Defense Nuclear Facilities*," in December 2016 that provided a qualitative assessment of risks posed by excess facilities and defined the scope of the challenge. In response to this risk assessment effort, DOE developed a plan to inspect and evaluate the higher risk process-contaminated excess facilities to determine if conditions had changed since the prior inspection in FY 2008, to update disposition estimates, and to recommend next steps in preparing facilities for disposition; and
- DOE completed facility inspections at Lawrence Livermore National Laboratory (LLNL) in Livermore, California, and the Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee, in FY 2016 and at the Los Alamos National Laboratory (LANL) and at the Savannah River Site, in FY 2017. In addition, NNSA and EM received funding in FY 2017 to begin characterization and stabilization activities for facilities at LLNL and Y-12.

NUCLEAR WASTE DISPOSAL

Key Challenges: DOE is directed by the amended Nuclear Waste Policy Act of 1982 (NWPA) to manage and dispose of high-level waste and spent nuclear fuel (SNF) in a manner that protects public health, safety, and the environment.

The NWPA authorizes the Secretary to enter into contracts with commercial nuclear utilities and commercial research reactor operators that own and generate SNF. In return for the payment by utilities of fees established by the NWPA into the Nuclear Waste Fund, the Government was to begin disposing of their SNF starting in 1998. Lawsuits have been filed by utilities to recover damages resulting from the delay. The Department of Justice has entered into settlements. Approximately $6.9 billion has been paid out of the Judgment Fund for settlements and judgments to contract holders. Contract holders will continue to submit annual claims for additional costs under the settlement agreements. Additional annual payments will be made pursuant to those agreements until the Government has fulfilled its spent fuel acceptance obligations. DOE reviews the claims and provides recommendations for approval to the Department of Justice. DOE staff continue to be lead Government witnesses for the remaining unsettled cases being tried and continue to manage the Nuclear Waste Fund with a balance of approximately $37.7 billion.

In *National Association of Regulatory Utility Commissioners* (*NARUC) v. DOE*, the U.S. Court of Appeals for the D.C. Circuit ruled that the Department's 2010 fee adequacy determination was legally inadequate and ordered the Department to issue a new fee adequacy evaluation in compliance with the court's opinion, by January 18, 2013. The Department issued a new fee adequacy report by that date and submitted it to the court. NARUC and the Nuclear Energy Institute immediately moved to reopen the appeal to challenge that report. On November 19, 2013, the court issued a decision finding that the Department's 2013 fee adequacy report was "arbitrary and capricious" and ordered the Secretary "to submit to Congress a proposal to change the fee to zero until such time as either the Secretary chooses to comply with the [Nuclear Waste Policy Act] as it is currently written, or until Congress enacts an alternative waste management plan." On December 20, 2013, the court issued a mandate directing the Department to comply with the court's decision to reduce the fee to zero. Accordingly, on January 3, 2014, the Department submitted the court-mandated proposal to Congress to adjust the 1 mill per kilowatt-hour fee to zero.

Departmental Initiatives: The Department is evaluating its path forward for SNF and high-level waste management, including resuming the Yucca Mountain license application process and the development of interim storage for SNF.

CYBERSECURITY

Key Challenges: Today's rapidly evolving cyber landscape presents unprecedented opportunities and challenges. Achieving a safe, secure, and resilient cyber environment requires DOE to continually pursue cost effective investments and activities to reduce cyber risk. Cyber is an enterprise-wide responsibility that demands an

expanded view to encompass the broad scope of information sharing and information safeguarding. The information technology (IT) and cyber governance structure for DOE is led by the Cyber Council, which is the principal forum for collaboration and coordination of key cyber policies and DOE enterprise-wide activities. The Cyber Council, chaired by the Deputy Secretary, reviews and vets significant enterprise IT and cyber-related policy issues before final decision by the Secretary.

In September 2017, OMB, in conjunction with the Department of Homeland Security (DHS) and the National Security Council, conducted DOE's FY 2017 CyberStat Review Session, an evidence-based meeting to ensure cybersecurity posture accountability. OMB identified eight cybersecurity initiatives in response to the CyberStat Review to accelerate improvements in the Department's cybersecurity posture.

The Department is also implementing the M-16-04 Cyber Strategy and Implementation Plan by supporting initiatives such as High Value Assets (HVA), Continuous Diagnostics and Mitigation (CDM), Einstein 3 Accelerated (E3A), and the Cyber Workforce Strategy.

Departmental Initiatives: The Department recognizes the importance of attracting, developing, and retaining a highly skilled cybersecurity workforce. As such, the Department is in the process of including the requirements of the July 2016 Federal Cybersecurity Workforce Strategy issued by the Office of Personnel Management into the draft DOE Cyber Workforce Strategy. Additionally, the Department is leveraging existing tools such as the DHS' Cybersecurity Workforce Toolkit and the National Initiative for Cybersecurity Education Capability Maturity Model. The Department also continues to implement workforce improvements to develop and maintain crucial skillsets in DOE employees and attract new talent to build a sustainable and diverse workforce.

In 2016, the Department initiated the Integrated Joint Cybersecurity Coordination Center (iJC3) to improve cybersecurity posture and to reduce risk to the Department. The iJC3 addresses the current enterprise Security Operation Center capabilities, providing recommendations on improvements, and initiating projects based on those recommendations to the DOE Information Management Governance Board. The iJC3 East/West Enterprise (EWE) Unclassified Security Operations Center (U/SOC) reached IOC on October 1, 2017. The iJC3 operates the EWE U/SOC with improved data sharing and technology within the iJC3 enterprise environment. Updated DOE cybersecurity policies are improving information sharing and reporting per the "*Memorandum on DOE Cyber Metadata Sharing*" signed by the Deputy Secretary dated September 12, 2017.

In June 2015, the Federal Chief Information Officer launched a 30-day Cybersecurity Sprint that directed agencies to dramatically accelerate implementation of Multifactor Authentication (MFA). The MFA implementation goal is 100% for privileged users by October 2017 and 85% for unprivileged users by December 2017. Over the last two years, DOE increased the use of MFA. The Department has full accounting of privileged and unprivileged user accounts and is monitoring the reported progress and completion dates of local MFA implementations and deployments. As of September 30, 2017, the Department achieved multifactor authentication LoA4 for 96% of privileged user accounts and 66% of unprivileged user accounts.

The Department participates in the DHS-led HVA Pilot for assessing the cybersecurity of DOE-identified HVAs. The Department continues to assess and update its HVA inventory. DOE is also coordinating MFA implementation schedules with HVA cybersecurity enhancements to ensure the Department is prioritizing cybersecurity implementation in areas of high risk and value.

The Department leverages E3A to improve its ability to defend against cyber threats. E3A is an intrusion prevention service offered to federal agencies that helps protect agencies from advanced persistent threats by providing intrusion monitoring, prevention and detection services – Domain Name System sink-holing of all outbound connections to the Internet, and malicious email filtering of all email inbound from the Internet. These services leverage classified cyber intelligence products developed by DHS National Cybersecurity and Communications Integration Center.

In response to OMB Memoranda M-14-03 "*Enhancing the Security of Federal Information and Information Systems*" and M-16-04 "*Cybersecurity Strategy and Implementation Plan (CSIP) for Federal Civilian Government*," the Department continues to collaborate with the DHS CDM Program to expand its continuous diagnostic capabilities for the ".gov" and unclassified networks across the Department by increasing the sensor capacity and automating sensor collections to enable prioritizing cybersecurity risk alerts.

Using a phased approach, DOE is in the final deployment stages of the Phase 1 - Endpoint Integrity capability tools and incorporating the CDM Dashboard into the DOE Energy Information Technology Services and Science HQ environments, with an expected completion date of January 2018. In Phase 2 - Privileges Management and Credential Management, DOE completed the initial planning stage in the DOE HQ environment and is transitioning to the CDM Solution Design stage with an expected project completion date of September 2018. In preparation for Phase 3, DOE plans to leverage the CDM Dynamic and Evolving Federal Enterprise Network Defense Task Order Request to address all remaining Enterprise-wide CDM capability gaps.
The Enterprise Supply Chain Risk Management (eSCRM) Program, created in response to increasing risk from the globalization of the information communication

technology sector, provides a robust toolset of defense-in-breadth and defense-in-depth SCRM capabilities that support Departmental stakeholders. The program meets the requirements from the CNSSD 505, Supply Chain Risk Management. These requirements included following agency-specific SCRM policies and procedures and creating a centralized SCRM focal point for the DOE enterprise that provides supply chain subject matter expertise, training, outreach, and awareness, supply chain risk assessments, incident management support, and metrics.

The Committee on National Security Systems (CNSS) is responsible for setting national-level information assurance policies, directives, instructions, operational procedures, guidance and advisories for U.S. Government departments and agencies for the security of National Security Systems through the CNSS Issuance System. CNSS is a Standing Committee under the President's Critical Infrastructure Protection Board. The CNSS Subcommittee is chartered to make recommendations to the Committee concerning CNSS responsibilities and must be composed of representatives from the participating Members and Observers.

In April 2016, the Department established the CNSS Internal Working Group (IWG) to support DOE efforts in CNSS policy development and implementation, leadership for interagency efforts, and engagement with stakeholders from across the DOE information assurance community. The CNSS IWG is committed to timely review and decision-making to ensure that input from all Department stakeholders are considered in creating a single-voice ("One Voice") in our participation in CNSS's mission. In addition, members of the CNSS IWG participate in key CNSS Working Groups, identifying and addressing issues to guide the protection of National Security Systems through the development of CNSS issuances.

HUMAN CAPITAL MANAGEMENT

Key Challenges: DOE requires an engaged and high-performing federal workforce to accomplish its mission. Key human capital challenges include:

- Mitigating the risk to mission from employee attrition, including increased retirement eligibility;
- Mitigating succession risks, as evidenced by the increasing age of the workforce;
- Strengthening employee engagement, as indicated by measures of employee engagement and employee perceptions of agency leadership; and
- Increasing the efficiency and effectiveness of human resources (HR) services when compared to Government benchmarks.

Departmental Initiatives: The Office of the Chief Human Capital Officer (HC), working with DOE Program Offices, identified three strategic human capital goals relating to leadership, people, and HR:

- Grow Our Leaders;
- Strengthen Our Workforce; and
- Improve Our HR Service Delivery.

DOE is aligning its actions with the Administration's goal to make government lean, accountable, and more efficient. To ensure that DOE meets its strategic human capital goals and has a workforce that accomplishes the Administration objective of meeting the needs of today and the future, DOE took the following actions in FY 2017:

- **Developed the Maximizing Employee Performance: DOE Action Plan for FY 2018-2019**. The plan outlines the DOE approach to addressing the Administration's priority to maximize employee performance in accordance with Office of Management and Budget guidance. The plan identifies actions DOE will take to ensure managers have the training and tools they need to ensure employee performance plans are aligned with the DOE mission, goals, and objectives and that employees are accountable for their performance.

- **Developed the FY 2018-2021 Workforce Plan**. The plan recognizes the DOE challenge of addressing an increasingly retirement-eligible workforce and the need to develop a pipeline of talent to ensure knowledge transfer and continuity of operations to allow DOE to meet its mission. DOE supports succession planning to identify development opportunities for employees in mission critical occupations. Targeted development, internal rotations, and detail assignments will build a well-rounded workforce, improve employee retention, and increase employee engagement. DOE also recognizes that an efficient and effective workforce requires an organizational structure that eliminates redundancies. DOE identified several opportunities for consolidation to streamline operations in its FY 2018 Budget Request.

- **Initiated Organizational Reforms in the DOE FY 2018 Budget Request**. DOE included several proposals in the FY 2018 Budget Request to consolidate several support functions to improve program oversight, efficiency, and effectiveness. The request also included proposals to consolidate certain sites and or terminate programs to reduce costs, eliminate duplication, or no longer support functions better left to the private sector in accordance with Administration priorities.

To achieve the Administration priorities outlined in the above plans and proposals through the three strategic human capital goals, HC implemented a series of initiatives to strengthen DOE human capital management:

- Upgraded the DOE Competency Assessment Tool to support leadership development in the DOE science, technology, engineering, and math (STEM) workforce;

- Oversaw employee engagement strategies that resulted in an increase of two percentage points from 2016 on the Federal Employee Viewpoint Employee Engagement Index;
- Implemented an expanded Executive Essentials Onboarding Program for new SES/SL/ST members to optimize the executive's contribution to the DOE mission;
- Created Competency Development Roadmaps to that provided examples of development opportunities that supported 36 competencies; and
- Continued to identify ways to strengthen recruitment and maximize hiring flexibilities to expedite hiring of qualified applicants.

SAFETY

Key Challenges: Maintain the safety and health of the DOE workforce and ensure the safety of the public and the environment from Departmental operations while striving to enhance the Department's productivity to achieve mission objectives.

Departmental Initiatives: In FY 2017, Departmental elements continued to implement Integrated Safety Management (ISM) and to work to strengthen safety culture through increased senior leadership and worker engagement. Further, the Department used its Operating Experience Program to identify and make improvements, publishing six operating experience reports addressing the areas of: hazardous electrical energy, nitrate waste, ladder safety, recent trends in musculoskeletal disorders, and ergonomically correct equipment. To support effective and efficient implementation of health and safety requirements, the Office of Environment, Health, Safety and Security (AU) published 15 clarifications of these requirements on its Response Line system, and distributed over 40 health and safety notifications. Additionally, AU held six complex-wide web conferences on timely health and safety topics.

A review of the ISM, federal oversight, and contractor assurance directives was undertaken to ensure the institutionalization of a strong safety culture across the Department. The Department and the Energy Facility Contractors Group (EFCOG) looked at eight sites, with diverse and complex missions, to benchmark their contractor assurance systems, including areas such as issues management and the continuous improvement in all areas of safety culture. EFCOG posted a contractor assurance system effectiveness best practice on its public web site based on the results of this effort.

The Safety Culture Improvement Panel (SCIP), chartered by the Deputy Secretary in May 2015, continues to provide leadership to support continuous improvement in meeting the Department's safety culture objectives across the complex and to ensure consistent leadership and focus on all aspects of DOE's safety culture initiatives. The SCIP supported development/conduct of the following training courses: Safety Culture for DOE and DOE Contractor Senior Leaders; Safety Culture for Front Line Leaders; and Safety Culture Fundamentals. Also, the SCIP restructured the 2017 Nuclear and Facility Safety Programs Workshop to include a presentation about the SCIP with attendee input during the plenary session, as well as several SCIP working sessions.

Additionally, the SCIP established a web site to share information that enhances safety culture throughout the Department. The web site includes a video by the Secretary that commits the Department to a safety-conscious work environment in which employees can feel free to raise safety concerns without fear of retaliation.

The need for a strong safety culture is institutionalized in DOE Acquisition Regulations clauses and the ISM Policy, Order, and Guide. The Order has been updated to include the SCIP's requirements and responsibilities. Additionally, AU meets regularly with HQ managers and with field managers and workers to obtain feedback on the strengths and weaknesses of the requirements and field implementation of worker safety and health programs.

DOE-wide outreach was conducted through worker safety and health policy implementation conference calls, site assistance visits for the Department's Voluntary Protection Program, and onsite training to increase awareness of worker safety requirements. Outreach to other stakeholders included meetings with various advisory boards and advocacy groups, such as the Advisory Board on Radiation and Worker Health, the Advisory Board on Toxic Substances and Worker Health, and with advocacy groups using various formats and approaches.

The Department will continue to institutionalize lessons-learned and best practices of safety and safety culture under the ISM framework and safety culture through the following initiatives:

- Continue to share lessons-learned on implementation of work planning and control;
- Continue ISM and SCIP support activities that strengthen the implementation of safety culture and safety-conscious work environment throughout DOE;
- Develop updated guidance for the conduct of safety culture self-assessments at DOE sites;
- Consider the hazards associated with the work, continue maximizing the use of national and international consensus standards where applicable, and ensure DOE requirements are risk-informed and performance-based and are meaningful, clear, and concise;
- Continue strengthening the implementation of safety and health-related programs, e.g.: ISM, 10 CFR 835, *Occupational Radiation Protection*; 10 CFR 850, *Chronic Beryllium Disease Prevention Program*; 10 CFR 851, *Worker Health and Safety Program*; and the DOE Voluntary Protection Program, through corporate assistance and awareness activities that are

focused on effective implementation of DOE requirements and the strengthening of safety culture;
- Identify and support additional nuclear safety research projects through the Nuclear Safety Research and Development program;
- Maintain effective levels of safety and health expertise throughout the Department by providing relevant training and professional development programs through the National Training Center and fostering the expansion of the training reciprocity program, whereby the same accredited safety training programs are recognized by DOE contractors and sites throughout DOE;
- Continue conducting safety and health self-assessments and implementing the independent oversight and worker safety and nuclear safety enforcement programs to maintain stakeholder and public confidence;
- Continue conducting independent oversight of nuclear facility projects to ensure compliance with 10 CFR 830, *Nuclear Safety Management*, requirements;
- Update the key nuclear safety requirements and guidance documents, including the nuclear safety rule, 10 CFR 830;
- Develop new DOE-specific training materials on Human Performance Improvement (HPI) to strengthen the adoption and use of HPI principles and practices within the Department; and
- Develop a new collaborative web site focused on organizational culture improvements to further support conditions conducive to a safety-conscious work environment.

INFRASTRUCTURE

Key Challenges: DOE is responsible for a vast portfolio of world-leading scientific and production assets as well as the general-purpose infrastructure that supports the Department to operate and use those assets. While the Department has made significant investments in its world-class mission facilities, much of the supporting infrastructure, including office space, general laboratory spaces, maintenance shops, and utilities, that enables the mission and forms the backbone of the laboratory and production plant sites, is beyond its design life, and is in need of greater attention. Based on Department-wide facility assessments and data analyses, the Department is facing a systemic challenge of degrading infrastructure and levels of deferred maintenance that have been increasing.

In addition to a degrading infrastructure, excess contaminated facilities can pose a risk to safety, security, and programmatic objectives. The Department faces a significant challenge with the number of excess facilities throughout the complex and the need to deactivate, decontaminate, decommission, and demolish those facilities in the near term. As various DOE Program Secretarial Offices (PSOs) identify excess facilities they no longer need, they typically transfer stewardship of any contaminated facilities and properties to EM. EM is then responsible for performing all necessary decontamination, as well as final decommissioning and demolition (D&D). However, EM is currently facing significant challenges associated with an increasing workload. As a result, EM is unable to D&D all of the excess facilities already transferred from other PSOs in a timely manner, or to accept additional excess contaminated facilities from other PSOs in the foreseeable future. Until EM accepts an excess contaminated facility into its portfolio, the PSO is responsible for maintaining the excess facility in a safe condition. In 2015, reports from the IG and GAO raised concerns with DOE's management of high-risk excess facilities, particularly those awaiting transfer to EM. These reports described increasing levels of risk due to delays in the cleanup and disposition of contaminated excess facilities.

To address these challenges, the Department focuses its infrastructure management priorities on: halting further increases in the level of deferred maintenance and reducing those levels over time; improving facility condition and functionality; and reducing the number of excess facilities in the Department's real property inventory.

Departmental Initiatives: DOE's Laboratory Operations Board (LOB) provides an enterprise-wide forum for engaging the DOE laboratories and PSOs in a joint effort to identify opportunities to improve effectiveness and efficiency. The LOB addresses all aspects of laboratory operations and includes a chartered subgroup focused strictly on laboratory infrastructure.

This subgroup, the Infrastructure Executive Committee (IEC), is comprised of senior line managers and facilities experts from across the DOE complex. The IEC is charged with developing an update on the state of laboratory infrastructure report to the Department's leadership. This report helps inform investment priorities as well as the effectiveness and efficiency of DOE real property management.

These assessments provided new insights into the condition of DOE's infrastructure and formed the basis for ensuring effective stewardship for the future. This, in turn, led to additional general purpose infrastructure funding levels requested and appropriated for FY 2016. The DOE FY 2018 budget request includes additional funding to address infrastructure challenges and proposes investments to decrease deferred maintenance across the complex.

Within individual program offices, infrastructure efforts are now an integral part of the laboratory planning and evaluation processes. Program Office plans include reduction of deferred maintenance, removal of excess facilities, and proposals for potential construction of new facilities. Evaluation of laboratory performance related to

infrastructure stewardship is included in laboratory performance plans. In addition, NNSA expanded its Asset Management Program which uses supply chain management economies-of-scale to provide a more centralized and efficient procurement approach to replacing mission-critical deteriorating infrastructure systems that are common throughout the enterprise.

In August 2016, DOE updated its policy order regarding Real Property Asset Management (Order 430.1C). This order, previously updated in 2003, establishes a corporate, holistic, and performance-based approach to real property life-cycle asset management that links real property asset planning, programming, budgeting, and evaluation to program mission projections and performance outcomes. The order refreshed DOE policies on planning, budgeting, acquiring, sustaining, and disposing of real property, as well as monitoring performance in these areas. The updated order also institutionalizes the recommendations of the LOB infrastructure working groups and addresses government-wide real property policies, goals, and requirements mandated since the last update.

To address excess contaminated facilities, the Department established an Excess Contaminated Facilities Working Group (ECFWG), a chartered subgroup of the LOB. One focus of the ECFWG is to develop and maintain the Department's plan for deactivation and decommissioning non-operational defense nuclear facilities (D&D Plan). The Department submits this plan to Congress on a biannual basis to meet reporting requirements under section 4423 of the FY 2016 National Defense Authorization Act and to address the concerns of the 2015 GAO audit regarding high-risk excess facilities.

In December 2016, the ECFWG finalized and submitted its first biennial "*Plan for Deactivation and Decommissioning of Nonoperational Defense Nuclear Facilities*" which identifies the number of excess facilities across the Department; provides rough order of magnitude costs to accomplish all of the required D&D work; discusses the methodology used to determine risk and prioritize facilities for D&D activities based on those risks; and highlights actions that DOE is planning to take to demolish specific facilities and to mitigate risks at existing contaminated facilities awaiting disposal. The Department plans to submit its next report to Congress in 2018.

To help develop the D&D Plan, the ECFWG initiated an enterprise-wide data collection effort to obtain updated costs to deactivate, decontaminate, decommission, and demolish excess facilities and information regarding risks posed by those facilities. The working group used the updated data to define the scope of the challenge and to identify options for how DOE may better prioritize excess facilities. To institutionalize and improve such data collection for future reports, the ECFWG also developed a guidance document for evaluating excess facilities. This guidance, issued in March 2017, identifies and describes the data elements necessary to evaluate excess facilities and provides guidance for assessing excess facilities' risks to mission and safety. This guidance also describes EM's approach to evaluate potentially process-contaminated excess facilities, identify requirements for long-term maintenance and surveillance, and collect information to support D&D cost estimates.

DOE MANAGEMENT PRIORITIES	IG CHALLENGE AREAS FY 2018	GAO HIGH RISK LIST - GAO-17-317 (as of February 2017, updated every two years)
Contract and Major Project Management	Contract Oversight a. Contractor Management b. Subcontract Management	Contract Management for the NNSA and EM Management of major ($750M+) projects and programs
Security	Safeguards and Security	
Environmental Cleanup	Environmental Cleanup	U.S. Government's Environmental Liability
Nuclear Waste Disposal	Nuclear Waste Disposal	
Cybersecurity	Cybersecurity	
Infrastructure	Infrastructure Modernization	
Human Capital Management		
Safety		
	Stockpile Stewardship	

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Financial Results

Electric Vehicles in Antarctica
In Antarctica, these electric vehicles will ferry researchers at McMurdo Station.

Consolidated and Combined Financial Statements

Introduction to Principal Statements

The Department's financial statements have been prepared to report the financial position and results of operations of the Department of Energy (the Department or DOE), pursuant to the requirements of the Chief Financial Officers Act of 1990, the Government Management Reform Act of 1994, and the OMB Circular A-136, *Financial Reporting Requirements*.

The responsibility for the integrity of the financial information included in these statements rests with the management of the Department. The audit of the Department's principal financial statements was performed by an independent certified public accounting firm selected by the Department's Inspector General. The auditors' report issued by the independent certified public accounting firm is included in this report.

The following provides a brief description of the nature of each required financial statement.

Consolidated Balance Sheets

The *Consolidated Balance Sheets* present, as of a specific time, amounts of future economic benefits owned or managed by the Department (assets), amounts owed by the Department (liabilities), and residual amounts retained by the Department comprising the difference (net position).

Consolidated Statements of Net Cost

The *Consolidated Statements of Net Cost* summarize the Department's operating costs by the strategic goals and objectives identified in the Department's 2014 - 2018 Strategic Plan. All operating costs reported reflect full costs, except for indirect costs, which are reported on the Management and Performance line of the statements. The costs for each line are reduced by earned revenues to arrive at net costs.

Consolidated Statements of Changes in Net Position

The *Consolidated Statements of Changes in Net Position* identify appropriated funds used as a financing source for goods, services or capital acquisitions. These statements present the accounting events that caused changes in the net position section of the Consolidated Balance Sheets from the beginning to the end of the reporting periods.

Combined Statements of Budgetary Resources

The *Combined Statements of Budgetary Resources* identify the Department's budgetary authority. Federal law gives budgetary authority to agencies to incur financial obligations that will eventually result in outlays or expenditures. Budgetary authority that the Department receives includes appropriations, borrowing authority, contract authority and spending authority from offsetting collections. The *Combined Statements of Budgetary Resources* provide information on budgetary resources available to the Department during the year and the status of those resources at the end of the year. Detail on the amounts shown in the *Combined Statements of Budgetary Resources* is included in the Required Supplementary Information section on the schedule of Budgetary Resources by Major Account.

Consolidated Statements of Custodial Activities

The *Consolidated Statements of Custodial Activities* identify revenues collected by the Department on behalf of others. These revenues primarily result from Power Marketing Administrations that sell power generated by hydroelectric facilities owned by Department of Defense (DOD), U.S. Army Corps of Engineers (USACE), Department of the Interior (DOI).

Notes to the Consolidated and Combined Financial Statements

The notes to the consolidated and combined financial statements provide a detailed explanation for activity that is included in the line items of each statement. The notes also provide information to support the valuation and computation of the financial statement activity.

Consolidating Schedules

The consolidating schedules separate the Department's financial activity by the independent organizations that are included in the financial statement line items. The independent organizations include Power Marketing Administrations and the Federal Energy Regulatory Commission. The consolidating schedules also identify intradepartmental activity that is eliminated during the financial statement preparation process.

Principal Statements

U.S. Department of Energy Consolidated Balance Sheets

As of September 30, 2017 and 2016

($ IN MILLIONS)	FY 2017	FY 2016
ASSETS: (Note 2)		
Intragovernmental Assets:		
Fund Balance with Treasury (Note 3)	$ 33,754	$ 31,808
Investments and Related Interest, Net (Note 4)	41,903	40,846
Accounts Receivable, Net (Note 5)	513	577
Other Assets	80	58
Total Intragovernmental Assets	**$ 76,250**	**$ 73,289**
Investments and Related Interest, Net (Note 4)	-	102
Accounts Receivable, Net (Note 5)	3,363	3,380
Direct Loans and Loan Guarantees, Net (Note 7)	13,691	14,646
Inventory, Net (Note 8)	44,589	44,068
General Property, Plant, and Equipment, Net (Note 9)	35,070	34,505
Regulatory Assets (Note 6)	10,681	10,983
Other Non-Intragovernmental Assets (Note 10)	4,855	4,548
Total Assets	**$ 188,499**	**$ 185,521**
LIABILITIES: (Note 11)		
Intragovernmental Liabilities:		
Accounts Payable	$ 177	$ 86
Debt (Note 12)	23,640	25,185
Deferred Revenues and Other Credits (Note 13)	107	92
Other Liabilities (Note 14)	967	562
Total Intragovernmental Liabilities	**$ 24,891**	**$ 25,925**
Accounts Payable	3,717	3,600
Loan Guarantee Liability (Note 7)	134	139
Debt Held by the Public (Notes 11 and 12)	6,154	6,019
Deferred Revenues and Other Credits (Note 13)	42,195	40,667
Environmental Cleanup and Disposal Liabilities (Note 15)	383,784	371,786
Pension and Other Actuarial Liabilities (Note 16)	23,198	28,950
Obligations Under Capital Leases (Note 17)	2,273	2,163
Other Non-Intragovernmental Liabilities (Note 14)	6,043	6,338
Contingencies and Commitments (Note 18)	27,304	25,134
Total Liabilities	**$ 519,693**	**$ 510,721**
NET POSITION:		
Unexpended Appropriations		
Unexpended Appropriations - Funds from Dedicated Collections (Note 19)	$ 10	$ 14
Unexpended Appropriations - Other Funds	22,485	21,364
Cumulative Results of Operations		
Cumulative Results of Operations - Funds from Dedicated Collections (Note 19)	(12,279)	(7,780)
Cumulative Results of Operations - Other Funds	(341,410)	(338,798)
Total Net Position	**$ (331,194)**	**$ (325,200)**
Total Liabilities and Net Position	**$ 188,499**	**$ 185,521**

The accompanying notes are an integral part of these statements.

U.S. Department of Energy Consolidated Statements of Net Cost

For the Years Ended September 30, 2017 and 2016

($ IN MILLIONS)	FY 2017	FY 2016
STRATEGIC GOALS: (Note 20)		
Science and Energy		
Program Costs	$ 13,466	$ 12,974
Less: Earned Revenues	(5,845)	(4,956)
Net Cost of Science and Energy	**$ 7,621**	**$ 8,018**
Nuclear Security		
Program Costs	$ 10,449	$ 10,415
Less: Earned Revenues	(43)	(32)
Net Cost of Nuclear Security	**$ 10,406**	**$ 10,383**
Management and Performance		
Program Costs	$ 6,109	$ 5,895
Less: Earned Revenues	(130)	(153)
Net Cost of Management and Performance	**$ 5,979**	**$ 5,742**
Net Cost of Strategic Goals	**$ 24,006**	**$ 24,143**
OTHER PROGRAMS: (Note 20)		
Reimbursable Programs		
Program Costs	$ 4,278	$ 4,213
Less: Earned Revenues	(4,109)	(4,013)
Net Cost of Reimbursable Programs	**$ 169**	**$ 200**
Other Programs		
Program Costs	$ 499	$ 510
Less: Earned Revenues	(352)	(341)
Net Cost of Other Programs	**$ 147**	**$ 169**
Costs Applied to Reduction of Legacy Environmental Liabilities (Notes 15 and 20)	(5,634)	(5,564)
Costs Not Assigned (Notes 20 and 21)	22,829	44,735
Net Cost of Operations (Note 22)	**$ 41,517**	**$ 63,683**

The accompanying notes are an integral part of these statements.

U.S. Department of Energy Consolidated Statements of Changes in Net Position

For the Years Ended September 30, 2017 and 2016

($ IN MILLIONS)	FUNDS FROM DEDICATED COLLECTIONS (Note 19)	ALL OTHER FUNDS	ELIMINATIONS	CONSOLIDATED
	FY 2017			
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning Balances	$ (7,780)	$ (338,798)	$ -	$ (346,578)
Budgetary Financing Sources:				
Appropriations Used	$ 15	$ 28,703	$ -	$ 28,718
Non-Exchange Revenue	14	-	-	14
Donations and Forfeitures of Cash	-	1	-	1
Transfers - In/(Out) Without Reimbursement	(430)	-	-	(430)
Other Budgetary Financing Sources	76	-	-	76
Other Financing Sources (Non-Exchange):				
Donations and Forfeitures of Cash	5	-	-	5
Transfers - In/(Out) Without Reimbursement (Note 22)	(117)	(44)	-	(161)
Imputed Financing from Costs Absorbed by Others (Note 22)	7	6,990	-	6,997
Other	(453)	(361)	-	(814)
Total Financing Sources	**$ (883)**	**$ 35,289**	**$ -**	**$ 34,406**
Net Cost of Operations	(3,616)	(37,901)	-	(41,517)
Net Change	**$ (4,499)**	**$ (2,612)**	**$ -**	**$ (7,111)**
Total Cumulative Results of Operations	**$ (12,279)**	**$ (341,410)**	**$ -**	**$ (353,689)**
UNEXPENDED APPROPRIATIONS:				
Beginning Balances	$ 14	$ 21,364	$ -	$ 21,378
Budgetary Financing Sources:				
Appropriations Received (Note 23)	$ 11	$ 30,309	$ -	$ 30,320
Appropriations Transferred - In/(Out)	-	(30)	-	(30)
Other Adjustments	-	(455)	-	(455)
Appropriations Used	(15)	(28,703)	-	(28,718)
Total Budgetary Financing Sources	**$ (4)**	**$ 1,121**	**$ -**	**$ 1,117**
Total Unexpended Appropriations	**$ 10**	**$ 22,485**	**$ -**	**$ 22,495**
Net Position	**$ (12,269)**	**$ (318,925)**	**$ -**	**$ (331,194)**
	FY 2016			
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning Balances	$ (10,410)	$ (301,946)	$ -	$ (312,356)
Budgetary Financing Sources:				
Appropriations Used	$ 13	$ 27,582	$ -	$ 27,595
Non-Exchange Revenue	7	2	-	9
Donations and Forfeitures of Cash	-	8	-	8
Transfers - In/(Out) Without Reimbursement	(385)	-	-	(385)
Other Budgetary Financing Sources	61	-	-	61
Other Financing Sources (Non-Exchange):				
Donations and Forfeitures of Cash	38	-	-	38
Transfers - In/(Out) Without Reimbursement (Note 22)	(98)	(46)	-	(144)
Imputed Financing from Costs Absorbed by Others (Note 22)	8	2,532	-	2,540
Other	(30)	(231)	-	(261)
Total Financing Sources	**$ (386)**	**$ 29,847**	**$ -**	**$ 29,461**
Net Cost of Operations	3,016	(66,699)	-	(63,683)
Net Change	**$ 2,630**	**$ (36,852)**	**$ -**	**$ (34,222)**
Total Cumulative Results of Operations	**$ (7,780)**	**$ (338,798)**	**$ -**	**$ (346,578)**
UNEXPENDED APPROPRIATIONS:				
Beginning Balances	$ 15	$ 19,912	$ -	$ 19,927
Budgetary Financing Sources:				
Appropriations Received (Note 23)	$ 10	$ 29,050	$ -	$ 29,060
Appropriations Transferred - In/(Out)	-	14	-	14
Other Adjustments	-	(28)	-	(28)
Appropriations Used	(11)	(27,584)	-	(27,595)
Total Budgetary Financing Sources	**$ (1)**	**$ 1,452**	**$ -**	**$ 1,451**
Total Unexpended Appropriations	**$ 14**	**$ 21,364**	**$ -**	**$ 21,378**
Net Position	**$ (7,766)**	**$ (317,434)**	**$ -**	**$ (325,200)**

The accompanying notes are an integral part of these statements.

U.S. Department of Energy Combined Statements of Budgetary Resources

For the Years Ended September 30, 2017 and 2016

($ IN MILLIONS)	BUDGETARY	NON-BUDGETARY CREDIT REFORM FINANCING ACCOUNTS	BUDGETARY	NON-BUDGETARY CREDIT REFORM FINANCING ACCOUNTS
	FY 2017		FY 2016	
BUDGETARY RESOURCES:				
Unobligated Balance Brought Forward, Oct 1	$ 7,999	$ 1,417	$ 7,615	$ 1,522
Recoveries of Prior Year Unpaid Obligations	570	1,059	769	-
Other Changes in Unobligated Balance (+ or -)	9	(1,519)	12	(476)
Unobligated Balance from Prior Year Budget Authority, Net	**$ 8,578**	**$ 957**	**$ 8,396**	**$ 1,046**
Appropriations (Note 23)	31,085	-	29,815	-
Borrowing Authority	251	105	429	100
Contract Authority	2,946	-	2,650	-
Spending Authority from Offsetting Collections	6,560	776	6,476	840
Total Budgetary Resources (Note 23)	**$ 49,420**	**$ 1,838**	**$ 47,766**	**$ 1,986**
STATUS OF BUDGETARY RESOURCES:				
New Obligations and Upward Adjustments (Total) (Notes 22 & 23)	$ 41,621	$ 553	$ 39,767	$ 569
Unobligated Balance, End of Year:				
Apportioned, Unexpired Accounts	$ 7,661	$ 13	$ 7,595	$ 12
Exempt from Apportionment, Unexpired Accounts	22	-	26	-
Unapportioned, Unexpired Accounts (Note 23)	27	1,272	303	1,405
Unexpired, Unobligated Balance, End of Year	**$ 7,710**	**$ 1,285**	**$ 7,924**	**$ 1,417**
Expired, Unobligated Balance, End of Year	89	-	75	-
Unobligated Balance, End of Year (Total)	**$ 7,799**	**$ 1,285**	**$ 7,999**	**$ 1,417**
Total Budgetary Resources (Note 23)	**$ 49,420**	**$ 1,838**	**$ 47,766**	**$ 1,986**
CHANGE IN OBLIGATED BALANCE:				
Unpaid Obligations:				
Unpaid Obligations, Brought Forward, Oct 1	$ 26,843	$ 4,115	$ 25,680	$ 5,289
New Obligations and Upward Adjustments (Total) (Notes 22 & 23)	41,621	553	39,767	569
Outlays (Gross) (-)	(39,035)	(839)	(37,835)	(1,743)
Recoveries of Prior Year Unpaid Obligations (-)	(570)	(1,059)	(769)	-
Unpaid Obligations, End of Year (Note 23)	**$ 28,859**	**$ 2,770**	**$ 26,843**	**$ 4,115**
Uncollected Payments:				
Uncollected Pymts, Fed Sources, Brought Forward, Oct 1 (-)	$ (4,222)	$ (99)	$ (4,154)	$ (99)
Change in Uncollected Pymts, Fed Sources (+ or -)	(168)	46	(68)	-
Uncollected Pymts, Fed Sources, End of Year (-)	**$ (4,390)**	**$ (53)**	**$ (4,222)**	**$ (99)**
Memorandum (non-add) Entries:				
Obligated Balance, Start of Year (+ or -)	**$ 22,621**	**$ 4,016**	**$ 21,526**	**$ 5,190**
Obligated Balance, End of Year (+ or -)	**$ 24,469**	**$ 2,717**	**$ 22,621**	**$ 4,016**
BUDGET AUTHORITY AND OUTLAYS, NET:				
Budget Authority, Gross	$ 40,842	$ 881	$ 39,370	$ 940
Actual Offsetting Collections (-)	(9,184)	(1,878)	(8,796)	(1,630)
Change in Uncollected Pymts, Fed Sources (+ or -)	(168)	46	(68)	-
Recoveries of Prior Year Paid Obligations	64	-	3	-
Budget Authority, Net (Total)	**$ 31,554**	**$ (951)**	**$ 30,509**	**$ (690)**
Outlays, Gross	$ 39,035	$ 839	$ 37,835	$ 1,743
Actual Offsetting Collections (-)	(9,184)	(1,878)	(8,796)	(1,630)
Outlays, Net (Total)	**$ 29,851**	**$ (1,039)**	**$ 29,039**	**$ 113**
Distributed Offsetting Receipts (-) (Notes 22 & 23)	(4,040)	-	(3,192)	-
Agency Outlays, Net (Note 23)	**$ 25,811**	**$ (1,039)**	**$ 25,847**	**$ 113**

The accompanying notes are an integral part of these statements.

U.S. Department of Energy Consolidated Statements of Custodial Activities

For the Years Ended September 30, 2017 and 2016

($ IN MILLIONS)	FY 2017	FY 2016
SOURCES OF COLLECTIONS:		
Cash Collections: (Note 24)		
Power Marketing Administrations	$ 690	$ 774
Federal Energy Regulatory Commission	80	25
Total Cash Collections	**$ 770**	**$ 799**
Accrual Adjustment	68	5
Total Custodial Revenue	**$ 838**	**$ 804**
DISPOSITION OF REVENUE:		
Transferred to Others:		
Bureau of Reclamation	$ (277)	$ (295)
Department of the Treasury	(276)	(250)
Army Corps of Engineers	(212)	(251)
Others	(5)	(4)
Decrease/(Increase) in Amounts to be Transferred	(68)	(4)
Net Custodial Activity	**$ -**	**$ -**

The accompanying notes are an integral part of these statements.

Notes to the Consolidated and Combined Financial Statements

1. Summary of Significant Accounting Policies

A. BASIS OF PRESENTATION

These consolidated and combined financial statements have been prepared to report the financial position and results of operations of the United States (U.S.) Department of Energy (the Department or DOE). The statements were prepared from the books and records of the Department in accordance with United States generally accepted accounting principles issued by the Federal Accounting Standards Advisory Board (FASAB) and presentation guidelines in the Office of Management and Budget (OMB) Circular A-136, *Financial Reporting Requirements*.

B. DESCRIPTION OF REPORTING ENTITY

The Department is a cabinet-level agency of the Executive Branch of the U.S. Government. The Department is not subject to federal, state, or local income taxes. The Department's Headquarters organizations are located in Washington, D.C. and Germantown, Maryland, and consist of an executive management structure that includes the Secretary; the Deputy Secretary; the Under Secretary for Science and Energy; the Under Secretary for Nuclear Security/National Nuclear Security Administration; the Under Secretary for Management and Performance; Secretarial staff organizations; program organizations that provide technical direction and support for the Department's principal programmatic missions; and the PMAs (Bonneville Power Administration, Southeastern Power Administration, Southwestern Power Administration, and Western Area Power Administration) whose primary offices are located in the region served by each PMA. The Department also includes the Federal Energy Regulatory Commission (FERC), which is an independent organization responsible for regulating the transmission and sale of natural gas for resale in interstate commerce, for regulating the transmission and wholesale of electricity in interstate commerce, and the licensing of hydroelectric power projects.

The Department has a complex field structure comprising operational offices, field offices, primary offices and operations of the PMAs, laboratories, and other facilities. The majority of the Department's environmental cleanup, energy research and development, and testing and production activities are carried out by major contractors. The contractors operate, maintain, or support the Department's Government-owned facilities. The Department indemnifies these contractors against financial responsibility from nuclear accidents under the provisions of the Price-Anderson Act.

These contractors have unique contractual relationships with the Department. In most cases, their charts of accounts and accounting systems are integrated with the Department's accounting system through a home office-branch office type of arrangement. Additionally, the Department is responsible for reimbursing the allowable costs of contractor contributions to certain defined benefit pension plans, as well as postretirement benefits such as medical care and life insurance, for the employees of these contractors. As a result, the Department's financial statements reflect not only the costs incurred by these contractors, but also include certain contractor assets (e.g., employee advances and prepaid pension costs) and liabilities (e.g., accounts payable, accrued expenses including payroll and benefits, and pension and other actuarial liabilities) that would not be reflected in the financial statements of other federal agencies that do not have these unique contractual relationships.

C. BASIS OF ACCOUNTING

Transactions are recorded on the accrual and budgetary bases of accounting. Under the accrual basis, revenues are recognized when earned and expenses are recognized when liabilities are incurred, without regard to receipt or payment of cash. Budgetary accounting facilitates compliance with legal constraints and controls over the use of federal funds. All material intradepartmental balances and transactions have been eliminated in the *Consolidated Balance Sheets, Consolidated Statements of Net Cost, Consolidated Statements of Changes in Net Position, and Consolidated Statements of Custodial Activities*. The *Combined Statements of Budgetary Resources* are prepared on a combined basis and do not include intradepartmental eliminations.

Throughout these financial statements, assets, liabilities, earned revenue, and costs have been classified according to the type of entity with which the transactions were made. Intragovernmental assets and liabilities are those from or to other federal entities. Intragovernmental earned revenue represents collections or accruals of revenue from other federal entities. Intragovernmental costs are payments or accruals for goods and services provided by other federal entities, and costs incurred by other federal entities as a result of the Department's programs (see Note 20).

D. FUND BALANCE WITH U.S. TREASURY

Funds with the U.S. Department of the Treasury (Treasury) primarily represent appropriated and revolving funds that are available to pay current liabilities and finance authorized purchases. Disbursements and receipts are processed by Treasury, and the Department's records are reconciled with those of Treasury (see Note 3).

E. INVESTMENTS AND RELATED INTEREST, NET

All investments are reported at cost net of amortized premiums and discounts as it is the Department's intent to hold the investments to maturity. Premiums and discounts are amortized using the effective interest yield method (see Note 4).

F. ACCOUNTS RECEIVABLE, NET

Intragovernmental accounts receivable represent amounts due from other federal agencies and are considered to be fully collectible. The amounts due for non-intra-governmental (non-federal) receivables are stated net of an allowance for uncollectible accounts. The estimate of the allowance is based on past experience in the collection of receivables and an analysis of the outstanding balances (see Note 5).

G. DIRECT LOANS AND LOAN GUARANTEES, NET

The Department has two loans that were obligated and disbursed prior to FY 1992, and are presented net of an allowance for loss. All loans obligated after FY 1992 are presented on a present value basis in compliance with the Federal Credit Reform Act of 1990. The present value of the loans is revalued on an annual basis (see Note 7).

Interest expense on the Bureau of the Fiscal Service (BFS) and Federal Financing Bank (FFB) debt is calculated in accordance with the OMB Circular A-11, Sections 185.32 and 185.34 using the Credit Subsidy Calculator 2. Capitalized interest receivables on loans with FFB are reclassified to principal outstanding on the capitalization date.

H. INVENTORY, NET

Stockpile materials are recorded at historical cost in accordance with Statement of Federal Financial Accounting Standards (SFFAS) No. 3, *Accounting for Inventory and Related Property,* except for certain nuclear materials identified as surplus or excess to the Department's needs. These nuclear materials are recorded at their net realizable value (see Note 8).

I. GENERAL PROPERTY, PLANT, AND EQUIPMENT, NET

Property, plant, and equipment that are purchased, constructed, or fabricated in-house, including major modifications or improvements, are capitalized at cost. The Department's property, plant, and equipment capitalization threshold, except as noted below, is $500,000. The capitalization threshold for Nuclear Waste Fund (NWF) is $50,000. The capitalization thresholds for the PMAs and FERC range from $5,000 to $50,000 or may depend on whether particular equipment is considered a major unit of property, which is capitalized upon purchase, or a minor unit, which is generally expensed. The capitalization threshold for internal use software is $750,000, except for the PMAs and FERC, which use thresholds ranging from $5,000 to $150,000 (see Note 9).

Costs of construction are accumulated as construction work in process. Upon completion or beneficial occupancy or use, the cost is transferred to the appropriate property account. The Department does not capitalize property, plant, and equipment related to environmental management facilities storage and processing of the Department's environmental legacy wastes.

Depreciation expense is generally computed using the straight-line method. The units of production method is used only in special cases where applicable, such as depreciating automotive equipment on a mileage basis and construction equipment on an hourly use basis. The ranges of service lives are generally as follows:

- Structures and Facilities: 25 – 50 years
- Automated Data Processing Software: 3 – 7 years
- Equipment: 5 – 40 years
- Land rights for a specified period or 50 years, whichever is less

J. LIABILITIES

Liabilities represent amounts of monies or other resources likely to be paid by the Department as a result of a transaction or event that has already occurred. However, no liability can be paid by the Department absent an authorized appropriation. Liabilities for which an appropriation has not been enacted are, therefore, classified as not covered by budgetary resources (see Note 11), and there is no certainty that the appropriations will be enacted. Also, liabilities of the Department that are not contract based can be abrogated by the Government acting in its sovereign capacity.

K. FUNDS FROM DEDICATED COLLECTIONS

Funds from dedicated collections are financed by specifically identified revenues provided to the Government by non-Federal sources, often supplemented by other financing sources, which remain available over time. These specifically identified revenues and other financing sources are required by statute to be used for designated activities, benefits, or purposes, and must be accounted for separately from the Government's general revenues (see Note 19).

L. ACCRUED ANNUAL, SICK, AND OTHER LEAVE

Federal Employees: Federal employees' annual leave is accrued as it is earned, and the accrual is reduced annually for actual leave taken. Each year, the accrued annual leave balance is adjusted to reflect the latest pay rates. To the extent that current or prior-year appropriations are not available to fund annual leave earned but not taken, funding will be obtained from future financing sources. Sick leave and other types of non-vested leave are expensed as taken.

Contractor Employees: The Department accrues annual leave for contractor employees. Unlike leave for federal employees, this is a funded liability rather than an unfunded liability.

M. RETIREMENT PLANS

Federal Employees: There are two primary retirement systems for federal employees. Employees hired prior to January 1, 1984, may participate in the Civil Service Retirement System (CSRS). On January 1, 1984, the Federal Employees Retirement System (FERS) went into effect pursuant to Public Law 99-335. Most employees hired after December 31, 1983, are automatically covered by FERS and Social Security. Employees hired prior to January 1, 1984, elected to either join FERS and Social Security or remain in CSRS. All employees are eligible to contribute to the Federal Thrift Savings Plan (TSP). For employees covered by FERS, a TSP account is automatically established to which the Department is required to contribute one percent of gross pay and match employee contributions up to an additional four percent. For most employees hired since December 31, 1983, the Department also contributes the employer's matching share for Social Security. The Department does not report CSRS or FERS assets, accumulated plan benefits, or unfunded liabilities, if any, applicable to its employees. Reporting such amounts is the responsibility of the Office of Personnel Management (OPM). The Department does report, as an imputed financing source (see Note 22) and a program expense, the difference between its contributions to federal employee pension and other retirement benefits and the estimated actuarial costs as computed by OPM. The PMAs make additional annual contributions to Treasury to ensure that all postretirement benefit programs provided to their employees are fully funded and such costs are both recovered through rates and properly expensed.

Contractor Employees: The Department is contractually responsible for reimbursing its major contractors who sponsor employee defined benefit pension plans for the costs of contractor employee retiree benefits because these are allowable costs under their contracts. Most of these contractors sponsor defined benefit pension plans under which these plans promise to pay employees specified benefits, such as a percentage of the final average pay for each year of service. The Department does not sponsor and is not the fiduciary of contractor employee defined benefit plans. Contractors are required to make contributions to their plans as required by the Internal Revenue Code and the Employee Retirement Income Security Act (ERISA), as amended. For qualified defined benefit pension plans, the Department's current funding policy is to reimburse contractors for the minimum required contributions made, absent the Department's agreement to reimburse at a different level. For nonqualified plans, the funding policy is pay-as-you-go. Employer contributions are calculated to ensure that plan assets are sufficient to provide for accrued benefits of contractor employees. The level of contributions is dependent on plan provisions and actuarial assumptions about the future, such as interest rates, employee turnover and mortality, age of retirement, and compensation increases. The Department's major contractors also sponsor postretirement benefits other than pensions (PRB) consisting of predominantly postretirement health care benefits which are generally funded on a pay-as-you-go basis. Since the Department is responsible for the allowable costs of funding these contractor pension and PRB plans, it reports assets and liabilities for these plans (see Note 16).

N. NET COST OF OPERATIONS

Program costs are summarized in the *Consolidated Statements of Net Cost* by the strategic goals and objectives identified in the Department's 2014-2018 Strategic Plan. Program costs reflect full costs including all direct and indirect costs consumed by these strategic goals and objectives. Administrative costs are reported in the Management and Performance line of the Statements of Net Costs. Costs included in this line support the activities reported in all of the Department's goals. Full costs are reduced by exchange (earned) revenues to arrive at net operating cost (see Note 20).

O. REVENUES AND OTHER FINANCING SOURCES

The Department receives the majority of the funding needed to perform its mission through Congressional appropriations. These appropriations may be used, within statutory limits, for operating and capital expenditures. In addition to appropriations, other financing sources include exchange and non-exchange revenues and imputed financing sources. The Department also collects custodial revenues on behalf of others.

Exchange and Non-Exchange Revenues*:* In accordance with Federal Government accounting standards, the Department classifies revenues as either exchange (earned) or non-exchange. Exchange revenues are those that derive from transactions in which the Government provides value to the public or another Government entity at a price. Non-exchange revenues derive from the Government's sovereign right to demand payment, including fines and penalties. Non-exchange revenues also include interest earned on investments funded from amounts remaining from the privatization of the U.S. Enrichment Corporation Fund (see Note 4). These revenues are not considered to reduce the cost of the Department's operations and are reported on the *Consolidated Statements of Changes in Net Position.*

Imputed Financing Sources: In certain instances, program costs of the Department are paid out of the funds appropriated to other federal agencies. For example, certain costs of retirement programs are paid by OPM, and certain legal judgments against the Department are paid from the Judgment Fund maintained by Treasury. When costs are incurred by other federal entities as a result of the Department's programs, the Department recognizes these amounts on the *Consolidated Statements of Net Cost.* In addition, these amounts are recognized as imputed financing sources on the *Consolidated Statements of Changes in Net Position* (see Note 22).

Custodial Revenues: The Department collects certain revenues on behalf of others, which are designated as custodial revenues. The Department incurs virtually no costs to generate these revenues, nor can it use these revenues to finance its operations. The revenues are returned to Treasury and others and are reported on the *Consolidated Statements of Custodial Activities* (see Note 24).

P. USE OF ESTIMATES

The preparation of financial statements requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant items subject to such estimates and assumptions include present value of loan receivables; estimated lives of general property, plant and equipment; environmental cleanup and disposal liabilities; pension and other actuarial liabilities; contingencies and commitments; cost accruals; estimated accrued unbilled revenues for PMAs; and managerial cost allocations. Actual results could differ from these estimates.

Q. COMPARATIVE DATA

Certain FY 2016 amounts have been reclassified to conform to the FY 2017 presentation.

R. ALLOCATION TRANSFERS WITH OTHER FEDERAL AGENCIES

The Department is a party to an allocation transfer with another federal agency as a transferring (parent) entity. Allocation transfers are legal delegations by one department of its authority to obligate budget authority and outlay funds to another department. A separate fund account (allocation account) is created in the Treasury as a subset of the parent fund account for tracking and reporting purposes. All allocation transfers of balances are credited to this account, and subsequent obligations and outlays incurred by the child entity are charged to this allocation account as it executes the delegated activity on behalf of the parent entity. Generally, all financial activity related to these allocation transfers (e.g., budget authority, obligations, outlays) is reported in the financial statements of the parent entity, from which the underlying legislative authority, appropriations and budget apportionments are derived. The Department allocates funds, as the parent, to the USACE.

2. Non-Entity Assets

($ IN MILLIONS)	FY 2017	FY 2016
Intragovernmental		
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 14)	$ -	$ 149
Other	20	7
Subtotal	**$ 20**	**$ 156**
Investments - Petroleum Pricing Violation Escrow Fund (Notes 4 and 14)	-	102
Inventories - Department of Defense stockpile oil (Notes 8 and 14)	123	123
Other	15	-
Total non-entity assets	**$ 158**	**$ 381**
Total entity assets	188,341	185,140
Total assets	**$ 188,499**	**$ 185,521**

Assets in the possession of the Department that are not available for its use are considered non-entity assets.

PETROLEUM PRICING VIOLATION ESCROW FUND

The Petroleum Pricing Violation Escrow Fund represents receipts collected as a result of agreements or court orders with individuals or firms that violated petroleum pricing and allocation regulations during the 1970s and 1980s. The investments are liquidated, as needed, to make payments to claimants from this Fund.

In August 2016, the Department announced the completion of the crude oil overcharge refund program. Since the program's inception in 1986, the Department has collected over $4.7 billion. Of that, $4 billion disbursed to the states and federal government went toward their energy programs, passing along savings to the public. The $700 million additional refunds have been disbursed to over 100,000 individual claimants, including farmers, hospitals, school districts, local governments, businesses, and utilities. As a result of the completion of the oil overcharge refund program, the Department of Energy returned $251 million to the U.S. Treasury general fund. The Department is actively addressing the disposition of immaterial residual amount.

3. Fund Balance with Treasury

($ IN MILLIONS)	APPROPRIATED FUNDS	REVOLVING FUNDS	SPECIAL FUNDS	OTHER FUNDS	TOTAL
	FY 2017				
Unobligated budgetary resources					
Available	$ 6,721	$ 221	$ 754	$ -	$ 7,696
Unavailable (Note 23)	107	1,279	2	-	1,388
Obligated balance not yet disbursed					
Unpaid obligations (Note 23)	24,390	6,528	711	-	31,629
Uncollected pymts, Fed sources	(4,011)	(396)	(36)	-	(4,443)
Deposit funds, clearing accounts and unavailable general fund receipts	-	-	-	79	79
Other adjustments					
Contract authority	-	(2,946)	-	-	(2,946)
Appropriations, borrowing authority and spending authority from offsetting collections temporarily not available pursuant to public law	39	10	-	-	49
Invested balances - payable - to be transferred	-	55	-	-	55
Unavailable receipt accounts	-	-	3,471	-	3,471
Borrowing authority not yet converted to fund balance	-	(2,788)	-	-	(2,788)
Budgetary resources invested in Treasury securities:					
Nuclear Waste Fund	-	-	(12)	-	(12)
D&D Fund	-	-	(219)	-	(219)
Power Marketing Administrations	-	(205)	-	-	(205)
Total Fund Balance with Treasury	**$ 27,246**	**$ 1,758**	**$ 4,671**	**$ 79**	**$ 33,754**
	FY 2016				
Unobligated budgetary resources					
Available	$ 6,785	$ 194	$ 654	$ -	$ 7,633
Unavailable (Note 23)	371	1,411	1	-	1,783
Obligated balance not yet disbursed					
Unpaid obligations (Note 23)	22,580	7,823	555	-	30,958
Uncollected pymts, Fed sources	(3,844)	(424)	(53)	-	(4,321)
Deposit funds, clearing accounts and unavailable general fund receipts	-	-	-	49	49
Other adjustments					
Contract authority	-	(2,650)	-	-	(2,650)
Appropriations, borrowing authority and spending authority from offsetting collections temporarily not available pursuant to public law	62	9	-	-	71
Invested balances - payable - to be transferred	-	46	-	-	46
Unavailable receipt accounts	-	-	3,078	-	3,078
Borrowing authority not yet converted to fund balance	-	(4,133)	-	-	(4,133)
Budgetary resources invested in Treasury securities:					
Nuclear Waste Fund	-	-	(16)	-	(16)
D&D Fund	-	-	(215)	-	(215)
Power Marketing Administrations	-	(475)	-	-	(475)
Total Fund Balance with Treasury	**$ 25,954**	**$ 1,801**	**$ 4,004**	**$ 49**	**$ 31,808**

4. Investments and Related Interest, Net

($ IN MILLIONS)	FACE VALUE	UNAMORTIZED PREMIUM (DISCOUNT)	INTEREST RECEIVABLE	INVESTMENTS, NET	UNREALIZED MARKET GAINS (LOSSES)	MARKET VALUE
	FY 2017					
Intragovernmental Non-Marketable						
Nuclear Waste Fund	$ 53,013	$ (15,444)	$ 102	$ 37,671	$ 6,820	$ 44,491
D&D Fund	2,340	33	16	2,389	(4)	2,385
U.S. Enrichment Corporation Fund	1,606	7	26	1,639	(1)	1,638
Power Marketing Administrations	204	-	-	204	-	204
Petroleum Pricing Violation Escrow Fund (Notes 2 and 14)	-	-	-	-	-	-
Total Intragovernmental Non-Marketable	**$ 57,163**	**$ (15,404)**	**$ 144**	**$ 41,903**	**$ 6,815**	**$ 48,718**
With the Public						
Petroleum Pricing Violation Escrow Fund (Notes 2 and 14)	-	-	-	-	-	-
Total investments and related interest, net	**$ 57,163**	**$ (15,404)**	**$ 144**	**$ 41,903**	**$ 6,815**	**$ 48,718**
	FY 2016					
Intragovernmental Non-Marketable						
Nuclear Waste Fund	$ 52,424	$ (16,485)	$ 88	$ 36,027	$ 9,947	$ 45,974
D&D Fund	2,495	55	15	2,565	7	2,572
U.S. Enrichment Corporation Fund	1,622	-	4	1,626	-	1,626
Power Marketing Administrations	475	1	3	479	-	479
Petroleum Pricing Violation Escrow Fund (Notes 2 and 14)	149	-	-	149	-	149
Total Intragovernmental Non-Marketable	**$ 57,165**	**$ (16,429)**	**$ 110**	**$ 40,846**	**$ 9,954**	**$ 50,800**
With the Public						
Petroleum Pricing Violation Escrow Fund (Notes 2 and 14)	102	-	-	102	-	102
Total investments and related interest, net	**$ 57,267**	**$ (16,429)**	**$ 110**	**$ 40,948**	**$ 9,954**	**$ 50,902**

Pursuant to statutory authorizations, the Department invests monies in Treasury securities and commercial certificates of deposit that are secured by the Federal Deposit Insurance Corporation. The Department's investments primarily involve the NWF and the Uranium Enrichment Decontamination and Decommissioning (D&D) Fund. Fees collected from owners and generators of spent nuclear fuel (SNF) and high-level radioactive waste and fees collected from domestic utilities are deposited into the respective funds. Funds in excess of those needed to pay current program costs are invested in Treasury securities.

Upon privatization of the U.S. Enrichment Corporation Fund (USEC) on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the USEC Fund. These funds are invested in Treasury securities.

The Federal Government does not set aside assets to pay for expenditures associated with the funds for which the Department holds Treasury securities. These Treasury securities are an asset to the Department and a liability to Treasury. Because the Department and Treasury are both parts of the Federal Government, these assets and liabilities offset each other from the standpoint of the Federal Government as a whole. For this reason, they do not represent an asset or a liability in the U.S. Government-wide financial statements. Treasury securities provide the Department with ability to draw upon the Treasury to make expenditures, subject to available appropriations and OMB apportionments. When the Department requires redemption of these securities, the Federal Government finances those expenditures out of accumulated cash balances by raising taxes or other receipts, by borrowing from the public, repaying less debt, or by curtailing other expenditures. This is the same way the Federal Government finances all other expenditures.

5. Accounts Receivable, Net

($ IN MILLIONS)	FY 2017			FY 2016		
	RECEIVABLE	ALLOWANCE	NET	RECEIVABLE	ALLOWANCE	NET
Intragovernmental	$ 513	$ -	$ 513	$ 577	$ -	$ 577
Nuclear Waste Fund	$ 2,620	$ -	$ 2,620	$ 2,789	$ -	$ 2,789
Power Marketing Administrations	529	(5)	524	506	-	506
Other	334	(115)	219	691	(606)	85
Subtotal	**$ 3,483**	**$ (120)**	**$ 3,363**	**$ 3,986**	**$ (606)**	**$ 3,380**
Total accounts receivable, net	**$ 3,996**	**$ (120)**	**$ 3,876**	**$ 4,563**	**$ (606)**	**$ 3,957**

Intragovernmental accounts receivable primarily represent amounts due from other federal agencies for reimbursable work performed pursuant to the Economy Act, Atomic Energy Act, and other statutory authority.

Non-intragovernmental receivables primarily represent fees due from owners and generators of SNF and high-level radioactive waste (HLW) that contribute resources to the NWF. The NWF receivables are supported by contracts and are comprised of amounts due for two types of fees to be paid to the Department for disposal services: (a) a one-time charge for SNF or HLW existing prior to April 7, 1983; and (b) a per kWh fee on all net electricity generated and sold by civilian nuclear power reactors after April 7, 1983. The Department ceased the per kWh portion of the fee in 2014. However, the receivables associated with the one-time charges remain and continue to earn interest each year.

For power marketing administrations receivables due from the public primarily arise from the sale of power and transmission services. Other receivables due from the public include reimbursable work billings, trade receivables, and other miscellaneous receivables.

6. Regulatory Assets

($ IN MILLIONS)	FY 2017	FY 2016
Refinanced and additional appropriated capital	$ 5,366	$ 5,408
Residential exchange program scheduled and refund amounts	2,566	2,775
Non-operating facilities	1,798	1,893
Conservation and fish and wildlife measures	548	616
Other regulatory assets	403	291
Total regulatory assets	**$ 10,681**	**$ 10,983**

The Department's PMAs record certain amounts as assets in accordance with the Financial Accounting Standards Board's Accounting Standards Codification (FASB ASC) 980, *Regulated Operations*. The provisions of this standard require that regulated enterprises reflect rate actions of the regulator in their financial statements, when appropriate. These rate actions can provide reasonable assurance of the existence of an asset, reduce or eliminate the value of an asset, or impose a liability on a regulated enterprise. In order to defer incurred costs under this standard, a regulated entity must have the statutory authority to establish rates that recover all costs, and those rates must be charged to and collected from customers.

REFINANCED AND ADDITIONAL APPROPRIATED CAPITAL

BPA is responsible for repaying the Treasury for transmission and power generating assets that were funded by appropriations, including those of the USACE and Bureau of Reclamation (BOR). In accordance with accounting guidance for regulated operations, BPA records a regulatory asset based on this deferred cost that must be repaid to the Treasury for those assets owned by the USACE and BOR. This regulatory asset is amortized over a period of between 68 and 75 years on a straight-line method based on the estimated service lives of the assets. BPA's trial balance includes a regulatory asset and a corresponding intragovernmental debt for refinanced and additional appropriations owed to the Treasury. Under the BPA Refinancing Section of the Omnibus Consolidated Rescissions and Appropriations Act of 1996 (Refinancing Act), 16 U.S.C. 838(l), BPA refinanced its unpaid capital appropriations as of September 30, 1996, and is responsible for the repayment of additional appropriated capital investment after the Refinancing Act (see Note 12).

RESIDENTIAL EXCHANGE PROGRAM (REP) SCHEDULED AND REFUND AMOUNTS

Under the provisions of the 2012 REP Settlement Agreement, BPA's investor-owned utilities (IOU) customers receive a fixed schedule of benefit payments (Scheduled Amounts) that will be recovered in rates through 2028. These amounts amortize to program costs. REP Refund Amounts reduce the IOU REP benefit payments through fiscal year 2019, are recoverable in future rates, and are equal to the regulatory liability for REP Refund Amounts to consumer-owned utilities (COUs).

NON-OPERATING FACILITIES

BPA is responsible for repayment of debt for terminated Energy Northwest Nuclear Projects 1 and 3, as well as the Northern Wasco hydroelectric project for which BPA terminated its participation. These assets are amortized to program costs over the term of the related outstanding debt (see Note 12).

CONSERVATION AND FISH AND WILDLIFE MEASURES

Conservation measures consist of the costs of deferred energy conservation measures to be recovered in future rates and are amortized to program costs over periods of 12 or 20 years. Beginning in fiscal year 2016, conservation costs are expensed as incurred. Fish and wildlife measures consist of deferred fish and wildlife project expenses to be recovered in future rates and are amortized to program costs over a period of 15 years.

OTHER REGULATORY ASSETS

Other regulatory assets primarily include costs to be recovered in future rates for preliminary construction and related activities of the I-5 Corridor Reinforcement Project, which BPA terminated in May 2017; outstanding legal

claims and settlement agreements recovered and amortized through future rates over a period as established by BPA; spacer damper replacement program costs to replace deteriorated spacer dampers amortized over a period of 25 or 30 years; and decommissioning and site restoration costs that reflect amounts to be recovered in future rates for funding the asset retirement obligation liability related to the former Trojan nuclear facility.

7. Direct Loans and Loan Guarantees, Net

($ IN MILLIONS)	FY 2017	FY 2016
Pre-FCRA loans	$ 1	$ 1
FCRA Direct loans		
ATVM	2,713	3,792
Title XVII	10,977	10,853
Total direct loans and 100% guarantee loans, net	**$ 13,691**	**$ 14,646**
FCRA Guarantee loans (guaranteed value)		
Title XVII	2,216	2,343
Total direct loans and loan guarantees, net	**$ 15,907**	**$ 16,989**

PRE-FCRA LOANS

The Department has two loans outstanding that were issued prior to the Federal Credit Reform Act of 1990 (FCRA). These loans are presented net of an allowance for loss of $29 million as of September 30, 2017 and September 30, 2016.

FCRA DIRECT LOANS AND LOAN GUARANTEES

The Department's direct loans and loan guarantees made and issued, respectively, post-FY 1991, are subject to FCRA. These FCRA loans and loan guarantees are valued at the net present value of expected future cash flows, discounted at the interest rate of Treasury marketable securities. The net present value of the FCRA loans and loan guarantees are not necessarily representative of proceeds that might be expected if these loans were sold on the open market.

The subsidy costs for FCRA loans and loan guarantees, which include interest rate differentials, delinquencies, defaults, fees and other cash flow items, are intended to estimate the long-term cost to the U.S. Government of such loans and loan guarantees. These costs are recognized in the year the loan or loan guarantee is disbursed. A subsidy re-estimate is performed annually as of September 30. The subsidy re-estimates take into account factors that may have affected the estimated cash flows. Any increase in the subsidy resulting from the re-estimate is recognized as a subsidy expense.

For direct loans, interest revenue is accrued on a monthly basis on the loan balance outstanding at the interest rate assigned to that loan at the time of disbursement, net of any interest on non-performing loans over 90 days.

The Department operates the following FCRA direct loan and loan guarantee programs:

- Advanced Technology Vehicles Manufacturing (ATVM) Loan Program
- Title XVII Loan Guarantee Program for Innovative Technologies (Title XVII)
- Tribal Energy Loan Guarantee (Tribal)

ATVM

Section 136 of the Energy Independence and Security Act of 2007, which established the ATVM Loan Program, authorized the Department to make direct loans to support the establishment of manufacturing facilities for the production of advanced technology vehicles and components for such vehicles. The ATVM direct loans to such manufacturers are available to finance the cost of re-equipping, expanding, or establishing such manufacturing facilities and for the costs of engineering integration associated with such vehicles and components. To be eligible for a direct loan, an advanced technology vehicle manufacturer applicant must demonstrate that the adjusted average fuel economy for its light duty vehicle fleet exceeds its fleet average for model year (MY) 2005. If the applicant is a new manufacturer of advanced technology vehicles, to be eligible for a direct loan, it must demonstrate that its vehicles meet or exceed the industry adjusted average fuel economy for MY 2005 of equivalent vehicles. An advanced technology vehicle under Section 136 is a vehicle that is rated at or above 125% of the fuel economy standards for vehicles with substantially similar attributes for MY 2005. The FY 2009 Continuing Resolution (CR) enacted on September 30, 2008, appropriated $7.5 billion to support a maximum of $25.0 billion in loans under the ATVM Loan Program.

The ATVM Loan Program makes direct loans that are funded by the FFB with interest rates that are equal to the cost of funds to the Treasury for obligations of comparable maturity. The subsidy cost for an ATVM direct loan is comprised of default subsidy, financing subsidy, and fees. The loan and subsidy are obligated at the time the Department offers a conditional commitment to an applicant.

In determining the subsidies, the Department estimates a base borrower interest rate from the budget assumption yield curve used to discount cash flows that generates a zero financing subsidy when determining the final subsidy cost at the point of obligation. This base interest rate is used for calculating the subsidy cost only. Actual interest

rates that borrowers pay are not affected. During the interest rate re-estimate, the actual interest rates and the discount rates are updated and will true-up the difference in the Treasury interest rates assumed in the original subsidy cost, and the actual Treasury rates at the point of disbursement, when the borrower interest rates are set.

The Department received a contingent financial interest and warrants in connection with the sales of defaulted ATVM loans. The Department has determined that the contingent financial interest has no value until certain conditions occur. The warrants have been determined to have no value at this time.

As of September 30, 2017, the Department obligated approximately $8.4 billion in loans under the ATVM Loan Program for five borrowers. Of this sum, the Department disbursed $7.3 billion and de-obligated $1.1 billion.

TITLE XVII

The Energy Policy Act of 2005 (EPAct05) authorizes the Department to issue loan guarantees to eligible projects that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases" and "employ new or significantly improved technologies as compared to technologies in service in the U.S. at the time the guarantee is issued." Title XVII of EPAct05 provides broad authority for the Department to guarantee loans for projects that satisfy the above criteria if "there is reasonable prospect of repayment of the principal and interest on the obligation by the borrower."

Under the Full-Year Continuing Appropriations Act of 2011, P.L. No. 112-10 (FY 2011 CR), Congress made available approximately $170 million in appropriated funds to pay the subsidy of loan guarantees for renewable energy or efficient end-use energy technologies. Of this amount $9 million was rescinded by the Consolidated Appropriations Act, 2017, P.L. No. 115-31. An additional $1.5 billion in loan guarantee authority, where the applicants are obligated to pay the subsidy for loan guarantees, is available under the FY 2011 CR and the Omnibus Appropriations Act, 2009, P.L. No. 111-8, as amended by Section 408 of the Supplemental Appropriations Act, 2009, P.L. No. 111-32. The Consolidated Appropriations Act, 2012, P.L. 112-74, amended Section 1702 of Title XVII to provide that the Department may combine an appropriation of credit subsidy with a direct payment from the borrower to cover the subsidy of a loan guarantee. For nuclear power, front-end nuclear, and advanced fossil projects, Section 1703 continues to operate as a "self-pay" program whereby borrowers pay the subsidy cost.

In addition to the program under Section 1703 of Title XVII (Section 1703 program), the American Recovery and Reinvestment Act established a new program under Section 1705 of Title XVII (section 1705 program) that permitted the Department to issue loan guarantees for certain renewable energy systems, electric power transmission systems, and leading edge biofuel projects that commenced construction on or before September 30, 2011, and also appropriated $6 billion to pay for the subsidy costs for the loan guarantees of such projects. Public Law 111-47 required $2.0 billion of the subsidy funds to be transferred to the Department of Transportation to fund the "Cash for Clunkers" program. Public Law 111-226 required $1.5 billion of the subsidy funds to be rescinded. The loan guarantee authority for Sections 1703 and 1705 and the subsidy for loan guarantees issued under Section 1705 are obligated at the time the loan guarantee is issued by the Department.

Both the Section 1703 and 1705 programs are authorized to issue loan guarantees for up to 100 percent of a debt obligation, which must not exceed 80 percent of eligible project costs. In cases where the Department issues a 100% guarantee, the regulations implementing Title XVII requires that the FFB provide the funding. Guarantees by the Department of 100% of loans made by FFB constitute direct loans under FCRA. For the purpose of determining the subsidy, the Department models these loan guarantees as direct loans to reflect the economic reality to the Federal Government as a whole. Under Title XVII, the subsidy cost for a direct loan or a loan guarantee is comprised of default subsidy and financing subsidy. We note that the Department collects fees designed to offset the cost of administering the Title XVII loan program, and that such fees are not considered when calculating the subsidy cost.

In implementing the Section 1705 program, the Department also established the Financial Institution Partnership Program (FIPP) which supported loans for conventional renewable energy generation projects with commercial financing. Under FIPP, the Department provided a guarantee for up to 80% of a loan. The goal of FIPP was to leverage the human and financial capital of private sector financial institutions in accelerating the loan application process, while balancing risk between the Department and private sector partners participating in the program. The subsidy related to FIPP loans was obligated at the time the loan guarantees closed.

In determining the subsidy, the Department estimates a base borrower interest rate from the budget assumption yield curve used to discount cash flows that generates a zero financing subsidy when determining the final subsidy cost at the point of obligation. The Department then adds a spread to that interest rate estimate to reflect any spread that the FFB may charge. This base interest rate is used for calculating the subsidy cost only. Actual interest rates that borrowers pay are not affected. During the interest rate re-estimate, the actual interest rates and the discount rates are updated and will true-up the difference in the Treasury interest rates assumed in the original subsidy cost, and the actual Treasury rates at the point of disbursement, when the interest rates payable by the borrower are set.

As of September 30, 2017, under the Section 1703 program, approximately $7.9 billion are obligated for one project, of which $5.3 billion has been disbursed.

As of September, 30, 2017, under the Section 1703 program, conditional commitments to issue loan guarantees have been issued for four projects totaling $7.9 billion.

As of September 30, 2017, under the Section 1705 program, the Department has obligated approximately $13.4 billion for 24 projects (the Department initially obligated approximately $14.0 billion for these projects, but subsequently de-obligated approximately $600 million). Eighteen of such 24 projects received 100% guarantees of loans and 6 projects received partial guarantees of loans under FIPP. The Department obligated approximately $9.2 billion to the projects receiving 100% guarantees under the Section 1705 program and has disbursed approximately $9.1 billion. The Department obligated approximately $4.2 billion to the 6 FIPP projects and has disbursed approximately $4.1 billion.

In FY 2017, the Department wrote off $533.2 million in connection with a loan guaranteed under the Section 1705 program. The borrower of such guaranteed loan filed for bankruptcy in a prior fiscal year and the case closed in FY 2017. Two 1705 loans were written off in FY 2016 in the amount of $74.5 million.

TRIBAL

The EPAct05 (25 USC 3502 (c)) authorizes the Secretary to issue loan guarantees for any loan made to an Indian tribe for energy development.

Under the Consolidated Appropriations Act of 2017, P.L. No. 115-31, Congress made available approximately $8.5 million in appropriated funds to pay the subsidy of the loan guarantees. As of September 30, 2017, the rules and regulations for this program have not been issued in the Federal Register.

Direct Loans and 100% Loan Guarantees Obligated and Disbursed Post 1991

($ IN MILLIONS)	LOANS RECEIVABLE, GROSS	INTEREST RECEIVABLE	ALLOWANCE FOR SUBSIDY COST (PRESENT VALUE)	VALUE OF ASSETS RELATED TO LOANS, NET	DISBURSED IN FISCAL YEAR
	FY 2017				
ATVM	$ 2,799	$ 3	$ (89)	$ 2,713	$ -
Title XVII	11,649	67	(739)	10,977	275
Total loans	**$ 14,448**	**$ 70**	**$ (828)**	**$ 13,690**	**$ 275**
	FY 2016				
ATVM	$ 3,860	$ 4	$ (72)	$ 3,792	$ -
Title XVII	12,231	68	(1,446)	10,853	1,125
Total loans	**$ 16,091**	**$ 72**	**$ (1,518)**	**$ 14,645**	**$ 1,125**

Subsidy Expense for Direct Loans and 100% Loan Guarantees by Program and Component

($ IN MILLIONS)	INTEREST DIFFERENTIAL	DEFAULTS	FEES AND OTHER COLLECTIONS	OTHER	TOTAL
	FY 2017				
Subsidy expense for new direct loans disbursed					
Title XVII	(17)	6	-	-	(11)
Total	**$ (17)**	**$ 6**	**$ -**	**$ -**	**$ (11)**
	INTEREST RE-ESTIMATES	TECHNICAL RE-ESTIMATES	TOTAL RE-ESTIMATES	TOTAL MODIFICATIONS	TOTAL DIRECT LOAN SUBSIDY EXPENSE
Re-estimates and Modifications					
ATVM	$ (104)	$ 133	$ 29	$ -	$ 29
Title XVII	-	(223)	(223)	-	(234)
Total	**$ (104)**	**$ (90)**	**$ (194)**	**$ -**	**$ (205)**

($ IN MILLIONS)	INTEREST DIFFERENTIAL	DEFAULTS	FEES AND OTHER COLLECTIONS	OTHER	TOTAL
	FY 2016				
Subsidy expense for new direct loans disbursed					
Title XVII	(68)	20	-	-	(48)
Total	**$ (68)**	**$ 20**	**$ -**	**$ -**	**$ (48)**
	INTEREST RE-ESTIMATES	TECHNICAL RE-ESTIMATES	TOTAL RE-ESTIMATES	TOTAL MODIFICATIONS	TOTAL DIRECT LOAN SUBSIDY EXPENSE
Re-estimates and Modifications					
ATVM	$ -	$ (15)	$ (15)	$ -	$ (15)
Title XVII	-	(83)	(83)	-	(131)
Total	**$ -**	**$ (98)**	**$ (98)**	**$ -**	**$ (146)**

Schedule for Reconciling Subsidy Cost Allowance Balances (Post-1991 Direct Loans and 100% Loan Guarantees)

($ IN MILLIONS)	FY 2017	FY 2016
Beginning balance of the subsidy cost allowance	$ 1,518	$ 1,698
Add: subsidy expense for direct loans disbursed during the reporting years by component		
Interest rate differential costs	(17)	(68)
Default costs (net of recoveries)	6	20
Total of the above subsidy components	$ (11)	$ (48)
(a) Subsidy allowance amortization	48	41
(b) Loans written off	(533)	(75)
Ending balance of subsidy cost allowance before re-estimates	$ 1,022	$ 1,616
Add or subtract subsidy re-estimates by component:		
Interest rate re-estimates	(104)	-
Technical/default re-estimates	(90)	(98)
Ending balance of subsidy cost allowance	**$ 828**	**$ 1,518**

Guaranteed Loans Outstanding

($ IN MILLIONS)	PRINCIPAL OF GUARANTEED LOANS FACE VALUE	AMOUNT OF OUTSTANDING PRINCIPAL GUARANTEED
	FY 2017	
Title XVII	$ 2,770	$ 2,216
	FY 2016	
Title XVII	$ 2,929	$ 2,343

Liability for Loan Guarantees, Present Value Method

($ IN MILLIONS)	FY 2017	FY 2016
Title XVII	$ 134	$ 139

Subsidy Expense for New Loan Guarantees by Program and Component

($ IN MILLIONS)	INTEREST SUPPLEMENTS	DEFAULTS	FEES AND OTHER COLLECTIONS	OTHER	TOTAL
	FY 2017				
Subsidy expense for new loan guarantees Title XVII	$ -	$ -	$ -	$ -	$ -
	INTEREST RE-ESTIMATES	TECHNICAL RE-ESTIMATES	TOTAL RE-ESTIMATES		TOTAL LOAN GUARANTEE SUBSIDY EXPENSE
Re-estimates Title XVII	$ -	$ (9)	$ (9)		$ (9)
($ IN MILLIONS)	INTEREST SUPPLEMENTS	DEFAULTS	FEES AND OTHER COLLECTIONS	OTHER	TOTAL
	FY 2016				
Subsidy expense for new loan guarantees Title XVII	$ -	$ -	$ -	$ -	$ -
	INTEREST RE-ESTIMATES	TECHNICAL RE-ESTIMATES	TOTAL RE-ESTIMATES		TOTAL LOAN GUARANTEE SUBSIDY EXPENSE
Re-estimates Title XVII	$ -	$ (20)	$ (20)		$ (20)

Schedule for Reconciling Loan Guarantee Liability Balances (Post-1991 Loan Guarantees)

($ IN MILLIONS)	FY 2017	FY 2016
Beginning balance of the loan guarantee liability	$ 139	$ 154
Adjustments:		
Interest Accumulation on the liability balance	4	5
Ending balance of loan guarantee liability before re-estimates	$ 143	$ 159
Add or subtract subsidy re-estimates by component		
Technical/default re-estimates	(9)	(20)
Ending balance of loan guarantee liability	**$ 134**	**$ 139**

Administrative Expenses

($ IN MILLIONS)	FY 2017	FY 2016
Direct loan program - ATVM	$ 5	$ 4
Loan guarantee program - Title XVII	$ 30	$ 37

8. Inventory, Net

($ IN MILLIONS)	FY 2017	FY 2016
Strategic Petroleum, Northeast Home Heating Oil and Gasoline Supply Reserves	$ 20,401	$ 21,043
Nuclear Materials	23,517	22,363
Other Inventory	671	662
Total inventory, net	**$ 44,589**	**$ 44,068**

Inventory includes stockpile materials consisting of crude oil and gasoline held in the Strategic Petroleum Reserve (SPR) and ultra-low sulphur diesel held in the Northeast Home Heating Oil Reserve, nuclear materials, and other inventory consisting primarily of operating materials and supplies.

STRATEGIC PETROLEUM RESERVE

The SPR consists of crude oil stored in salt domes, terminals, and pipelines. As of September 30, 2017 and September 30, 2016, the SPR contained crude oil with a historical cost of $20.1 billion and $20.7 billion, respectively. The SPR provides a response mechanism should a severe oil disruption occur. Included in the SPR is six million barrels of crude oil held for future DOD use. The FY 1993 Defense Appropriations Act authorized the Department to acquire, transport, store, and prepare for ultimate drawdown of crude oil for DOD. The crude oil purchased with DOD funding is commingled with the Department's stock and is valued at its historical cost of $123 million at September 30, 2017 and September 30, 2016 (see Notes 2 and 14).

Beginning in FY 2017 and ending in FY 2025, the Department will conduct a series of oil sales authorized by the Bipartisan Budget Act of 2015, 21st Century Cures Act of 2015, and the Fixing America's Surface Transportation Act of 2015 (FAST). The Bipartisan Budget Act authorizes selling enough oil from FY 2017 to FY 2020 to raise $2 billion to modernize the SPR, subject to appropriation, and to sell a total 58 million barrels of oil from FY 2018 to FY 2025 to raise revenue for the General Treasury. The second law (Cures Act) authorizes a sale of 25 million barrels, and the funds will be used to carryout National Institutes of Health (NIH) innovation projects. The third law (FAST) authorizes the sale of an additional 66 million barrels of oil from FY 2023 to 2025 (or raising $5 billion, whichever comes first) to fund highway programs.

During September 2017, the Department approved a SPR oil exchange to assist oil refineries in the storm-affected areas within days of Hurricane Harvey. In response, the SPR loaned 5 million barrels of crude oil as a part of Harvey Exchange contracts entered into with four oil companies. The 5 million barrels plus approximately 185 thousand premium barrels of oil are scheduled to be returned to the SPR in FY 2018.

NORTHEAST HOME HEATING OIL RESERVE

The Northeast Home Heating Oil Reserve was established in FY 2000 pursuant to the Energy Policy and Conservation Act. The Reserve contains petroleum distillate in the New England geographical area. The historical cost of the reserve was $141 million as of September 30, 2017 and September 30, 2016.

NORTHEAST GASOLINE SUPPLY RESERVE

The Northeast Gasoline Supply Reserve was established in FY 2014 pursuant to the Energy Policy and Conservation Act. The Reserve contains refined petroleum product in the New York Harbor area and the Boston/Northern New England area. The historical cost of the product contained in the reserve was $122 million as of September 30, 2017 and September 30, 2016.

NUCLEAR MATERIALS

Nuclear materials include weapons materials and related components, including those in the custody of the DoD under Presidential Directive, and materials used for research and development purposes. Certain surplus plutonium carried at zero value (a provision for disposal is included in environmental liabilities) has significant arms control and nonproliferation value and is instrumental to the U.S. in ensuring that Russia continues toward the disposition of its weapons-grade plutonium.

As of September 30, 2017, the Department has natural uranium inventories of 4,263 metric tons (MTU) of uranium hexafluoride (UF6). This material can be divided into two stockpiles of material: U.S. origin (2,136 MTU of UF6) and Russian origin material (2,127 MTU of UF6). This includes the Reclassified US Origin (142.3 MTU) to Russian and Canadian.

The Department has transferred uranium in exchange for services under contracts at Portsmouth since 2009. Transfers to USEC from 2009 through 2011 totaled 1,473 MTU (UF6). Under the D&D contract awarded in the fall of 2010, an additional 1,250 MTU was bartered with Fluor, Babcock and Wilcox LLC through December 31, 2011. Prior to any transfers and in accordance with Section 3112(d) of the USEC Privatization Act, the Secretary of Energy must determine that certain DOE's transfers of low enriched or natural uranium will not have an adverse material impact on the domestic uranium mining, conversion, or enrichment industry. The May 2015 Secretarial Determination allowed natural uranium transfers up to 2,000 MTU in Current Year (CY) 2015, and

in CY 2016 and thereafter up to 1,600 MTU per CY for the cleanup activities at Portsmouth, and low enriched uranium (LEU) equivalent to 500 MTU of natural uranium per calendar year transferred to NNSA contractors for down-blending high enriched uranium (HEU) to LEU. While NNSA's down-blending program has always served a national security mission, in December 2016 the Secretary of Energy issued a National Security Determination allowing the LEU transfers under the NNSA HEU down-blending program to continue under Section 3112(e), which is not subject to the requirements laid out in Section 3112(d). Although these NNSA transfers do not require a determination on adverse material impact in order to proceed, DOE considered the impacts of these transfers in its market impact analysis for the current April 2017 Secretarial Determination under Section 3112(d). The April 2017 Secretarial Determination allows the sale or transfer of uranium in amounts of 800 MTU in the remainder of CY 2017 and in CY 2018 and thereafter, up to 1,200 MTU per CY for the cleanup activities at Portsmouth.

The nuclear materials inventory includes numerous items for which future use and disposition decisions have not been made. Decisions will be made through analysis of the economic benefits and costs, and the environmental impacts of the various use and disposition alternatives. The carrying value of these items is not significant to the nuclear materials stockpile inventory balance. The Department will recognize disposition liabilities and record the material at net realizable value when disposal as waste is identified as the most likely alternative and disposition costs can be reasonably estimated. Inventory values are reduced by costs associated with disposition, decay or damage.

Under a declaration by the Nuclear Weapons Council and an announcement by the President in 1995, 174.3 MTU of the Department's HEU was identified as excess to national security needs (S94). Most of this S94 material (about 154 MTU) will be down-blended to LEU. Some will be held in inventory or used for research nuclear reactor fuel or medical isotope production. The remaining portion (about 20 MTU) of the material is already in the form of irradiated fuel or other waste forms and will be disposed of directly as waste. In October 2005, the Secretary of Energy declared that the NNSA would remove up to 200 MTU of HEU, in the coming decades, from further use as fissile material in nuclear weapons. Out of the 200 MTU, approximately 20 MTU will be down-blended to LEU for use in commercial or research reactors, 20 MTU will be used for research reactors and 160 MTU will be provided to Naval Reactors for programmatic use. Approximately 8 MTU of the Naval Reactors material has been rejected by Naval Reactors and re-designated for down-blending and sale as LEU fuel. Down-blending of this material will occur over the coming decades.

The Department released the Excess Uranium Inventory Management Plan on July 3, 2013 (2013 Plan). The 2013 Plan seeks to provide the public and interested stakeholders updated information on programs and foreseeable mission needs, including additions to and deletions from the inventory and changes to DOE's uranium management strategy since the issuance of a previous plan in 2008.

In October 2015, the Department sent to Congress the Tritium and Enriched Uranium Management Plan Through 2060. This report summarizes plans and options for managing tritium and enriched uranium resources to satisfy U.S. national security demand through 2060 and offers analyses of demand and supply scenarios, material use restrictions, production capabilities, and production technologies needed to meet future demand along with associated cost estimates.

9. General Property, Plant, and Equipment, Net

($ IN MILLIONS)	ACQUISITION COSTS	ACCUMULATED DEPRECIATION	NET BOOK VALUE	ACQUISITION COSTS	ACCUMULATED DEPRECIATION	NET BOOK VALUE
	FY 2017			FY 2016		
Land and land rights	$ 2,321	$ (1,058)	$ 1,263	$ 2,249	$ (1,021)	$ 1,228
Structures and facilities	50,028	(30,485)	19,543	48,927	(29,107)	19,820
Internal use software	1,120	(774)	346	1,057	(736)	321
Equipment	20,202	(12,631)	7,571	19,945	(12,494)	7,451
Natural resources	117	(19)	98	117	(18)	99
Construction work in process	6,249	-	6,249	5,586	-	5,586
Total general property, plant & equipment	**$ 80,037**	**$ (44,967)**	**$ 35,070**	**$ 77,881**	**$ (43,376)**	**$ 34,505**

10. Other Non-Intragovernmental Assets

($ IN MILLIONS)	FY 2017	FY 2016
Operating non-federal projects	$ 3,519	$ 3,505
Prepaid pension plan costs (Note 16)	72	101
Prepayments and advances	259	206
Non-federal nuclear decommissioning trusts	347	314
Oil due from others	173	-
Lease-purchase trust funds	167	200
Other	318	222
Total other non-intragovernmental assets	**$ 4,855**	**$ 4,548**

OPERATING NON-FEDERAL PROJECTS

BPA is party to long-term contracts for BPA to acquire all of the generating capability of Energy Northwest's Columbia Generating Station (CGS) and, through 2032, all of Lewis County PUD's Cowlitz Falls Hydroelectric project. These contracts require that BPA meet all of the operating, maintenance and debt service costs for these projects.

The assets are amortized over the term of the outstanding debt (see Note 12).

PREPAYMENTS AND ADVANCES

Prepayments represents prepayments for Columbia Generating Station and other advance payments.

NON-FEDERAL NUCLEAR DECOMMISSIONING TRUSTS

BPA recognizes an asset that represents trust fund balances for decommissioning and site restoration costs. External trust funds for decommissioning and site restoration costs are funded monthly for CGS and are charged to program costs. The trust funds are expected to provide for decommissioning at the end of the project's safe storage period in accordance with Nuclear Regulatory Commission (NRC) requirements. The NRC requires that this period be no longer than 60 years from the time the plant ceases operations. Trust fund requirements for CGS are based on an NRC decommissioning cost estimate and the license termination date, which is in 2043. The CGS trusts are funded and managed by BPA in accordance with the NRC requirements and site certification agreements.

OIL DUE FROM OTHERS

During September 2017, the Department approved a SPR oil exchange to assist oil refineries in the storm-affected areas within days of Hurricane Harvey. In response, the SPR loaned 5 million barrels of crude oil as a part of Harvey Exchange contracts entered into with four oil companies. The 5 million barrels plus approximately 185 thousand premium barrels of oil are scheduled to be returned to the SPR in FY 2018.

LEASE-PURCHASE TRUST FUNDS

Lease-purchase trust funds are amounts held in separate trust accounts outside the Bonneville Fund for the construction of leased transmission assets, the use of which BPA has received under lease-purchase agreements. The amounts held in trust are also used in part for debt service payments during the construction period and include an investment fund mainly for future principal and interest debt service payments.

OTHER

Derivative instruments represent unrealized gains from BPA's derivative portfolio, which includes physical power purchase and sale transactions and power exchange transactions.

Other non-intragovernmental assets primarily include settlements receivable and funding agreements for certain joint transmission projects.

11. Liabilities Not Covered By Budgetary Resources

($ IN MILLIONS)	FY 2017	FY 2016
Intragovernmental		
Debt (Note 12)	$ 9,014	$ 9,432
Future reimbursements to the Treasury Judgment Fund (Note 14)	380	5
Other	15	15
Total intragovernmental	**$ 9,409**	**$ 9,452**
Debt held by the public (Note 12)	6,154	6,019
Nuclear Waste Fund deferred revenues (Note 13)	40,292	38,817
Environmental liabilities (Note 15)	381,813	369,067
Pension and other actuarial liabilities (Note 16)	23,198	28,950
Capital leases (Note 17)	103	72
Other liabilities		
Residential exchange - scheduled amounts (Note 14)	2,416	2,552
Environment, safety, and health compliance activities (Notes 14, 21 and 22)	992	1,115
Energy savings performance contracts and similar unfunded contracts (Note 14)	583	574
Accrued annual leave for federal employees	147	149
Other	49	48
Contingencies and commitments (Note 18)	27,302	25,127
Total liabilities not covered by budgetary resources	**$ 492,458**	**$ 481,942**
Total liabilities covered by budgetary resources	27,235	28,779
Total liabilities	**$ 519,693**	**$ 510,721**

12. Debt

($ IN MILLIONS)	BEGINNING BALANCE	NET BORROWINGS	ENDING BALANCE	BEGINNING BALANCE	NET BORROWINGS	ENDING BALANCE
	FY 2017			FY 2016		
Intragovernmental - not covered (Note 11)						
Borrowing from Treasury	$ 4,856	$ 250	$ 5,106	$ 4,746	$ 110	$ 4,856
Appropriated capital	1,080	83	1,163	1,047	33	1,080
Refinanced & additional appropriations	2,219	(686)	1,533	2,929	(710)	2,219
Capitalization adjustment	1,277	(65)	1,212	1,341	(64)	1,277
Subtotal	**$ 9,432**	**$ (418)**	**$ 9,014**	**$ 10,063**	**$ (631)**	**$ 9,432**
Intragovernmental - covered						
Borrowing from Treasury	$ 354	$ 78	$ 432	$ 215	139	$ 354
Borrowing from FFB	15,399	(1,205)	14,194	15,529	(130)	15,399
Subtotal	**$ 15,753**	**$ (1,127)**	**$ 14,626**	**$ 15,744**	**$ 9**	**$ 15,753**
Total intragovernmental debt	**$ 25,185**	**$ (1,545)**	**$ 23,640**	**$ 25,807**	**$ (622)**	**$ 25,185**
Debt held by the public (Note 11)	6,019	135	6,154	5,955	66	6,019
Total debt	**$ 31,204**	**$ (1,410)**	**$ 29,794**	**$ 31,762**	**$ (556)**	**$ 31,204**

BORROWING FROM TREASURY

BPA is authorized by Congress to issue and sell to the Treasury and have outstanding at any one time up to $7.7 billion aggregate principal amount of bonds. Of the $7.7 billion in Treasury borrowing authority, $1.2 billion is available for electric power conservation and renewable resources, including capital investment at FCRPS hydroelectric facilities owned by the USACE and BOR, and $6.5 billion is available for BPA's transmission capital program and to implement BPA's authorities under the Northwest Power Act. Of the $7.7 billion, $750 million can be issued to finance Pacific Northwest Electric Power

Planning and Conservation Act (Northwest Power Act) related expenses. The interest on BPA's outstanding bonds is set at rates comparable to rates on debt issued by other comparable federal government institutions at the time of issuance. Bonds can be issued with call options.

WAPA has authority to borrow up to $3.3 billion from the Treasury for planning, constructing, financing, operating, or maintaining new or upgraded electric power transmission lines and facilities; and for delivering or facilitating the delivery of power generated by renewable energy.

The Department is authorized to borrow from Treasury if cash previously collected is not enough to cover interest expense and other items related to the ATVM and Title XVII loan programs. As of September 30, 2017, the maturity range of the debt was September 30, 2018 to September 30, 2048 and the interest rate range was 2.590 percent to 4.723 percent. As of September 30, 2016, the maturity range of the debt was September 30, 2036 to September 30, 2048 and the interest rate range was 2.590 to 4.723 percent. Borrowings from Treasury related to ATVM and Title XVII loan programs are considered covered by budgetary resources as there is no congressional action necessary to pay the debt.

BORROWING FROM THE FFB

To finance its loan programs, the Department is required to use the FFB for the ATVM program and the 100 percent loan guarantees of the Title XVII program. As of September 30, 2017 and September 30, 2016, the maturity range of the debt was from October 2, 2017 to April 3, 2045 and October 3, 2016 to April 3, 2045, respectively. The interest rate range was from 2.08 percent to 4.010 percent and from 0.520 percent to 4.723 percent as of September 30, 2017 and September 30, 2016, respectively. All debt from the FFB is considered covered by budgetary resources as there is no congressional action necessary to pay the debt.

APPROPRIATED CAPITAL

Appropriated capital owed represents the balance of appropriations provided to WAPA, Southwestern Power Administration (SWPA) and Southeastern Power Administration (SEPA) for construction, operation, and maintenance of power facilities that will be repaid to the Treasury General Fund. The amount owed also includes accumulated interest on the net unpaid federal investment in the power projects. The federal investment in these facilities is to be repaid within 50 years from the time the facilities are placed in service or are commercially operational. Replacements of federal investments are generally expected to be repaid over their useful service lives. There is no requirement for repayment of a specific amount of federal investment on an annual basis.

WAPA, SWPA, and SEPA receive an annual appropriation from Treasury's General Fund to fund certain operation, and maintenance expenses. To the extent that revenues are not available for repayment, such unpaid annual net deficits will be repaid from the subsequent years' revenues. The Department treated these appropriations as a debt owed to Treasury's General Fund and as such, the *Consolidated Statements of Changes in Net Position* do not reflect these funds as appropriated capital used.

Except for the appropriation refinancing asset described in Note 6 and in the next section, the Department's financial statements do not reflect the federal investment in power generating facilities owned by the USACE; DOI, BOR; and the Department of State (DOS), International Boundary and Water Commission. BPA makes annual payments to Treasury from its net proceeds.

REFINANCED AND ADDITIONAL APPROPRIATED CAPITAL

As discussed in Note 6, BPA refinanced its unpaid capital appropriations as of September 30, 1996. Federal appropriations reflect the responsibility that BPA has to repay congressionally appropriated amounts in the FCRPS. Federal appropriations consist primarily of the remaining unpaid power portion of USACE and BOR capital investments funded through congressional appropriations and include appropriations for Columbia River Fish Mitigation as allocated to the power purpose of the USACE's FCRPS hydroelectric projects. BPA is obligated to establish rates to repay to the Treasury appropriations for federal generation and transmission plant investments within a specified repayment period, which is the reasonably expected service life of the facilities, not to exceed 50 years. All outstanding federal appropriations are due in fiscal year 2020 and thereafter. BPA establishes schedules for the repayment of federal appropriations when it establishes its power and transmission rates. These schedules can change depending on whether appropriations have been prepaid or deferred. Interest on appropriated amounts begins accruing when the related assets are placed into service.

Federal appropriations may be paid early without penalty. Primarily due to debt management actions, in fiscal year 2017, BPA repaid $909 million appropriations prior to the maturity date and in fiscal year 2016, BPA repaid $1.12 billion appropriations prior to the maturity date.

CAPITALIZATION ADJUSTMENT

The capitalization adjustment is the difference between the outstanding balance of federal appropriations, plus $100 million, before and after refinancing under the Refinancing Act. Consistent with treatment in BPA's power and transmission rate cases, this adjustment is being amortized over a 40-year period through fiscal year 2036. Amortization of the capitalization adjustment was $65 million for fiscal year 2017 (see Note 6).

DEBT HELD BY THE PUBLIC

Debt held by the public primarily includes liabilities associated with the BPA non-operating facilities discussed in Note 6, BPA purchased generating capability discussed

in Note 10, and customer prepaid power purchases described below.

During fiscal year 2017 and 2016, Energy Northwest funded annual operating costs with a bank borrowing arrangement instead of funding those annual costs from BPA's cash payments. The debt associated with the Energy Northwest bank borrowing arrangement is reflected within BPA's Debt Held by the Public.

BPA has agreements with four regional COUs for the advance payment of portions of their power purchases. Under this program, customers purchased prepaid power in blocks through fiscal year 2028. For each block purchased, BPA repays the prepayment with interest as monthly fixed credits on the customers' power bills.

In March 2013, BPA received $340 million representing $474 million (principal plus interest) in scheduled credits for blocks purchased by customers. BPA accounts for the prepayment proceeds as a financing transaction and reports the value of the obligations associated with the fixed credits as a prepayment liability. The prepaid liability is reduced and the credits are applied as power is delivered through fiscal year 2028.

13. Deferred Revenues and Other Credits

($ IN MILLIONS)	FY 2017	FY 2016
Intragovernmental	$ 107	$ 92
Nuclear Waste Fund (Note 11)	$ 40,292	$ 38,817
Power Marketing Administrations	1,404	1,279
Reimbursable work advances	246	355
Other	253	216
Subtotal	**$ 42,195**	**$ 40,667**
Total deferred revenues and other credits	**$ 42,302**	**$ 40,759**

NUCLEAR WASTE FUND

NWF revenues are accrued based on interest earned on one-time charges assessed against owners and generators of high-level radioactive waste and SNF and interest accrued on investments in Treasury securities. These revenues are recognized as a financing source as costs are incurred for NWF activities. Revenues that exceed the NWF expenses are deferred.

POWER MARKETING ADMINISTRATIONS

BPA's deferred revenues and other credits primarily represent advances and unearned revenue: 1) regulatory liabilities primarily relate to amounts previously collected through rates for accumulated plant removal costs collected through rates as part of depreciation and CGS decommissioning and site restoration costs; 2) customer reimbursable projects that consist of advances received from BPA's customers where either the customer or BPA will own the resulting asset; 3) generation interconnection agreements funds held as security for requested new network upgrades and interconnection that will be returned as credits against future transmission service; 4) unearned revenues from customers related to the Third AC intertie transmission line capacity project; 5) derivative instruments that reflect the unrealized losses from BPA's derivative portfolio, which includes physical power purchase and sale transactions; and 6) fiber optic leasing fees that reflect unearned revenue related to the leasing of fiber optic cables.

14. Other Liabilities

($ IN MILLIONS)	FY 2017	FY 2016
Intragovernmental		
Oil held for Department of Defense (Notes 2 and 8)	$ 123	$ 123
Future reimbursements to the Treasury Judgment Fund (Note 11)	380	5
Petroleum Pricing Violation Escrow Fund (Notes 2 and 4)	-	249
Negative subsidies and downward re-estimates on loans outstanding	273	116
Other	191	69
Total other intragovernmental liabilities	**$ 967**	**$ 562**
Environment, safety, and health compliance activities (Notes 11, 21 and 22)	$ 992	$ 1,115
Accrued payroll, benefits, and withholding taxes	1,448	1,401
Residential exchange	2,572	2,781
Petroleum Pricing Violation Escrow Fund (Notes 2 and 4)	-	2
Asset retirement obligations	192	186
Energy savings performance contracts and similar unfunded contracts (Note 11)	583	574
Other	256	279
Subtotal	**$ 6,043**	**$ 6,338**
Total other liabilities	**$ 7,010**	**$ 6,900**

FUTURE REIMBURSEMENTS TO THE TREASURY JUDGMENT FUND

This amount is comprised of future reimbursements the Department will need to make to the Treasury Judgment Fund for litigation payments made on behalf of the Department.

NEGATIVE SUBSIDIES AND DOWNWARD RE-ESTIMATES ON LOANS OUTSTANDING

FCRA requires the Government's cost of issuing a loan be estimated at the time of obligation. There are cases where the interest received on the loan will exceed the project interest expense and potential defaults; in essence the loan makes money. This will cause a negative subsidy rate. These negative subsidies are owed to the Treasury's General Fund at the time of the loan disbursement.

FCRA requires that the present value of loans outstanding be updated at the end of each Fiscal Year. If the present value of any loan increases (i.e., the Government's cost of the loan is lower than previously estimated), a downward re-estimate is recorded. The downward re-estimate results in excess subsidies collected that must be returned to the Treasury's General Fund in the following Fiscal Year.

ENVIRONMENT, SAFETY, AND HEALTH COMPLIANCE ACTIVITIES

The Department's environment, safety, and health (ES&H) liability represents those activities necessary to bring facilities and operations into compliance with existing ES&H laws and regulations (e.g., Occupational Safety and Health Act; Clean Air Act; Safe Drinking Water Act). Types of activities included in the estimate relate to the following: upgrading site-wide fire and radiological programs; nuclear safety upgrades; industrial hygiene and industrial safety; safety related maintenance; emergency preparedness programs; life safety code improvements; and transportation of radioactive and hazardous materials. The estimate covers corrective actions expected to be performed in future years for programs outside the purview of the Department's Environmental Management (EM) Program. ES&H activities within the purview of the EM program are included in the environmental liabilities estimate.

ACCRUED PAYROLL, BENEFITS, AND WITHHOLDING TAXES

Accrued payroll and benefits represent amounts owed to the Department's federal and contractor employees for accrued payroll, unfunded accrued annual leave for federal employees, funded accrued annual leave for contractor employees, payroll withholdings owed to state and local governments, and Thrift Savings Plan withholdings and employer contributions.

RESIDENTIAL EXCHANGE PROGRAM

As provided in the Northwest Power Act, in 1981 BPA began to implement the REP through various contracts with eligible regional utility customers. BPA's implementation of the REP has been the subject of various litigations and settlement agreements.

Beginning in April 2010, over 50 litigants and other regional parties entered into mediation to resolve their numerous disputes over the REP. In February 2011, the parties reached a final settlement agreement – the 2012 Residential Exchange Program Settlement Agreement (2012 REP Settlement Agreement), and in July 2011, BPA also signed the 2012 REP Settlement Agreement. In fiscal year 2012, BPA recorded an associated long-term IOU

exchange benefits liability and corresponding regulatory asset of $3.1 billion. Under the 2012 REP Settlement Agreement the IOUs REP benefits were determined for fiscal years 2012-2028 (also referred to herein as Scheduled Amounts). The Scheduled Amounts started at $182 million for fiscal year 2012 and increase over time to $286 million for fiscal year 2028. As provided in the 2012 REP Settlement Agreement, the Scheduled Amounts are established for each IOU based on the IOU's average system cost, its residential exchange load and BPA's applicable Priority Firm Exchange rate. The Scheduled Amounts total $4.1 billion over the 17-year period through 2028, with remaining Scheduled Amounts as of September 30, 2017, totaling $2.9 billion. Amounts recorded of $2.4 billion at September 30, 2017, represent the present value of future cash outflows for these IOU exchange benefits.

In addition to Scheduled Amounts, the 2012 REP Settlement Agreement calls for Refund Amounts to be paid to COUs in the amount of $77 million each year from fiscal year 2012 through fiscal year 2019. The Refund Amounts were established as a regulatory asset and regulatory liability for the refunds that will be provided to COU customers as bill credits. The 2012 REP Settlement Agreement established Refund Amounts totaling $612 million, with remaining refunds as of September 30, 2017, totaling $153 million. Amounts recorded as a regulatory liability of $150 million at September 30, 2017, represent the present value of future cash flows for the amounts to be refunded to COUs.

ASSET RETIREMENT OBLIGATIONS

BPA recognizes asset retirement obligations (AROs) based on the estimated fair market value of the dismantlement and restoration costs associated with the retirement of certain tangible long-lived assets. The liability is adjusted for any revisions, expenditures and the passage of time.

The AROs relate primarily to CGS decommissioning and site restoration, terminated Energy Northwest Projects 1 and 4 site restoration, and decommissioning costs for the former Trojan nuclear power plant. BPA also has tangible long-lived transmission assets without an associated ARO because no obligation exists to remove these assets.

ENERGY SAVINGS PERFORMANCE CONTRACTS AND OTHER SIMILAR CONTRACTS

The Department has entered into a number of Energy Savings Performance Contracts (ESPCs) or Utility Energy Service Contracts which are fixed-price, performance-based contracts that are paid back over time through generated savings guaranteed by the contractor. They represent a partnership between a federal agency and a energy service company (ESCO) or utility to make third-party financed investments in energy and water saving projects which enables the Department to fund these projects without up-front capital or advance appropriations. The liability is the amount owed to the ESCO over the post construction performance period of the contract.

OTHER LIABILITIES

Non-Fed Other Liabilities with the Public "Other" represents Contract Holdbacks, limited payroll related liabilities, Undistributed Advances, and various other miscellaneous liabilities.

15. Environmental Cleanup and Disposal Liabilities

($ IN MILLIONS)	FY 2017	FY 2016
Beginning balance	$ 371,786	$ 339,819
Changes to environmental cleanup and disposal liability estimates	18,971	39,139
Costs applied to reduction of legacy environmental liabilities (Note 20)	(5,634)	(5,564)
Capital expenditures related to remediation activities	(1,339)	(1,608)
Ending environmental cleanup and disposal liabilities	**$ 383,784**	**$ 371,786**
Unfunded environmental liabilities (Note 11)	$ 381,813	$ 369,067
Funded environmental liabilities	1,971	2,719
Total environmental cleanup and disposal liabilities	**$ 383,784**	**$ 371,786**

After World War II, the U.S. developed a massive industrial complex to research, produce, and test nuclear weapons and commercial nuclear power reactors. The nuclear complex was comprised of nuclear reactors, chemical processing buildings, metal machining plants, laboratories, and maintenance facilities.

At all sites where these activities took place, some environmental contamination occurred. This contamination was caused by the production, storage, and use of radioactive materials and hazardous chemicals, which resulted in contamination of soil, surface water, or groundwater. In particular, the environmental legacy of nuclear weapons production also included thousands of contaminated buildings and large volumes of waste and special nuclear materials requiring treatment, stabilization, and disposal.

The Nuclear Waste Policy Act of 1982 (the Act) established the Federal Government's responsibility to provide for permanent disposal of the Nation's high-level radioactive waste and SNF. The Act requires all owners and generators of high-level nuclear waste and SNF, including the Department, to pay their respective shares of the full cost of disposal. The Department's liability for disposal reflects its share of the estimated future costs of the disposal of its inventory of high-level waste and SNF. The Department's liability does not include the portion of the cost attributable to commercial owners and generators.

The Department has estimated environmental cleanup liability for the environmental contamination and waste disposition obligations discussed above. The estimates provide for a site-by-site projection of the work required to safely complete all EM projects, while complying with regulatory agreements, statutes, and regulations. Project estimates include projections of the technical scope, schedule, and estimable costs at each site for their cleanup.

In addition to the assumptions and uncertainties discussed above, the following key assumptions and uncertainties relate to the Department's estimates:

- The Department has identified approximately 10,500 potential release sites from which contaminants could migrate into the environment. Although virtually all of these sites have been at least partially characterized, final remedial action and regulatory decisions have not been made for many sites. Site-specific assumptions regarding the amount and type of contamination and the remediation technologies that will be utilized were used in estimating the environmental liabilities related to these sites.
- Cost estimates for management of the Department's high-level waste and SNF have been predicated upon assumptions as to the timing and rate of acceptance of the waste at a geologic repository. Changes in high-level waste and SNF disposition plans could cause departmental projected costs to change.
- Estimates are based on remedies considered technically and environmentally reasonable and achievable by local project managers and appropriate regulatory authorities.
- Estimated cleanup costs at sites for which there is no current feasible remediation approaches are excluded from the estimates, although applicable stewardship and monitoring costs for these sites are included. An example of such a site is the nuclear explosion test area at the Nevada National Security Site. The Department has not been required via regulation to establish remediation activities for these sites.

Changes to the Department's estimates during FY 2017 resulted from inflation adjustments to reflect constant dollars for the current year; improved and updated estimates for the same scope of work, including changes resulting from deferral or acceleration of work; revisions in technical approach or scope, including additional contamination; updated estimates of projected waste volumes; changes in the Department's allocable percentage share of future costs; legal and regulatory changes; and cleanup activities performed.

The Department's liabilities also include the estimated cleanup and post-closure responsibilities, including surveillance and monitoring activities, soil and groundwater remediation, and disposition of excess material for sites. The Department is responsible for the post-closure activities at many of the closure sites, as well

as other sites (former uranium mills and certain sites remediated by the USACE). The costs for these post-closure activities are estimated for a period of 75 years after the balance sheet date, i.e., through 2092 in FY 2017 and through 2091 in FY 2016. While some post-cleanup monitoring and other long-term stewardship activities post 2092 are included, there are others the Department expects to continue beyond 2092 for which the costs cannot reasonably be estimated.

A portion of the environmental liability at various field sites includes anticipated costs for facilities managed by the Department's ongoing program operations which will ultimately require stabilization, deactivation, and decommissioning. These estimates are largely based upon a cost-estimating model. Site-specific estimates are used, in lieu of the cost-estimating model, when available. Cost estimates for ongoing program facilities are updated each year. For facilities newly contaminated since FY 1997, costs are allocated to the periods benefiting from the operations of the facilities. Facilities cleanup costs allocated to future periods and not included in the liability amounted to $891 million at September 30, 2017, and $723 million at September 30, 2016.

Estimating the Department's environmental cleanup liability requires making assumptions about future activities and is inherently uncertain. The future course of the Department's environmental cleanup and disposal will depend on a number of fundamental technical and policy choices, many of which have not been made. The cost and environmental implications of alternative choices can be profound. For example, some contaminated sites and facilities could be restored to a condition suitable for any desired use; they could also be restored to a point where they pose no near-term health risks to surrounding communities but are essentially secured, monitored, and left in place. Achieving the former condition would have a higher cost but may, or may not, warrant the cost or be legally required. The estimates reflect applicable decisions and current expectations as to the extent of cleanup and site and facility reuse, which include consideration of legal requirements and stakeholder input. The environmental liability estimate includes contingency estimates intended to account for the uncertainties associated with the technical cleanup scope of the program. The environmental liability estimate is dependent on annual funding levels and achievement of work as scheduled. Congressional appropriations at lower-than-anticipated levels or unplanned delays in project completion would cause increases in life-cycle costs. All environmental liabilities as of September 30, 2017, and September 30, 2016, are stated in FY 2017 dollars and FY 2016 dollars, respectively, as required by generally accepted accounting principles for federal entities. Future inflation could cause actual costs to be substantially higher than the recorded liability.

HANFORD SITE

The Department's Hanford Site covers 586 square miles in the desert of southeastern Washington State. The area is home to nine former production reactors and their associated processing facilities. The major activities comprising the environmental liability at Hanford include the following:

- The Waste Treatment Plant is a multi-year construction project that once complete will process and treat the high-level waste currently stored underground in tanks. The estimate for this project is undergoing updates that are expected to continue beyond FY 2017 and will result in revisions to the liability.
- The Tank Farm project is to safeguard the nuclear waste stored in Hanford's 177 underground tanks and to manage the waste safely and responsibly until it can be treated in the Waste Treatment Plant for final disposition.
- The River Corridor Closure Project addresses the remediation of contaminated soils and facilities adjacent to the Columbia River. Much of this work has been completed but remediation activities continue for the 300-296 waste site beneath the 324 Building, the treatment and packaging of radioactive sludge to interim storage; and the high risk 618-11 burial grounds.
- Solid Waste Operations in the central plateau in support of remediation activities on the Hanford Site.
- Soil and groundwater, as well as D&D activities, which addresses the remediation of contaminated soils and facilities in the central plateau.
- Infrastructure services in support of the operations on the Hanford Site including safeguards and security, utility operations, and fire operations.

SAVANNAH RIVER SITE

The Savannah River Site (SRS), located in South Carolina, is 310 square miles in size with 1,000 facilities concentrated within 10 percent of the total land area. The SRS environmental liability estimate includes disposition of radioactive liquid waste through vitrification of the high activity component at the site's Defense Waste Processing Facility, and decommissioning of facilities. The major activities comprising the environmental liability at SRS include the following:

- The Radioactive Liquid Waste Stabilization and Disposition project includes safely and effectively treating, stabilizing and disposing of approximately 35 million gallons of legacy radioactive waste stored in 43 underground storage tanks.
- The surplus plutonium disposition program provides the capability to disposition certain inventories of the nations' surplus, weapons-usable plutonium. In accordance with Section 3121 of the National Defense Authorization Act for Fiscal Year 2018 (FY 2018 NDAA) and Section 309 of the Consolidated Appropriations Act, 2018, the Secretary of Energy

notified Congress that he exercised his authority to waive the requirement to use funds to construct the Mixed Oxide (MOX) facility. Instead, the Department will pursue a Dilute and Dispose (D&D) approach for plutonium disposition. The lower cost of the D&D approach is expected to reduce the program liability. The Department remains committed to the US-Russia Plutonium Management and Disposition Agreement.

IDAHO NATIONAL LABORATORY SITE

The Idaho National Laboratory (Idaho) is a research and engineering complex that occupies 890 square miles in southeastern Idaho and has been the center of nuclear energy research since 1949. Idaho has fulfilled numerous DOE missions including the design and testing of 52 nuclear reactors and reprocessing spent nuclear fuel to recover fissile materials. These activities resulted in inventories of high-level, transuranic, mixed low-level, and low-level wastes. The major activities comprising the environmental liability at Idaho include the following:

- The Spent Nuclear Fuel Stabilization and Disposition project includes stabilizing legacy spent nuclear fuel and managing the receipt of off-site spent nuclear fuel from research reactors.
- The Radioactive Liquid Tank Waste Stabilization and Disposition Project is treating, and disposing of, the sodium-bearing tank wastes, closing the underground waste tanks, as well as maintaining the Idaho Nuclear Technology and Engineering Center.

GASEOUS DIFFUSION PLANTS

The Department constructed and formerly operated three gaseous diffusion plants (GDPs) located in Oak Ridge, Tennessee; Portsmouth, Ohio; and Paducah, Kentucky to enrich uranium which resulted in radioactive and chemical contamination at the sites. The major activities comprising the environmental liabilities at the GDPs include the following:

- The Portsmouth and Paducah Nuclear Material Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion projects that include the operation of the depleted uranium hexafluoride conversion facilities at the Portsmouth and Paducah sites. These facilities will convert the material into a more stable form of depleted uranium oxide suitable for reuse or disposition.
- The Oak Ridge, Portsmouth, and Paducah Nuclear Facility D&D projects that include environmental cleanup and surveillance and maintenance activities, and decontamination and decommissioning of inactive or excess facilities.

ENVIRONMENTAL LIABILITIES ESTIMATE FOR OTHER SITES

Environmental liabilities exist for other sites and activities across the Department. The cleanup activities at these sites are similar to those mentioned above, including, depending on the site, soil and groundwater remediation; waste retrieval, treatment, and disposal; and decontamination and decommissioning of nuclear reactors and other facilities.

16. Pension and Other Actuarial Liabilities

($ IN MILLIONS)	FY 2017	FY 2016
Contractor pension plans	$ 13,724	$ 18,589
Contractor postretirement benefits other than pensions	9,363	10,253
Contractor disability and life insurance plans	15	15
Federal Employees' Compensation Act	96	93
Total pension and other actuarial liabilities (Note 11)	**$ 23,198**	**$ 28,950**

Most of the Department's major contractors sponsor defined benefit pension plans which promise to pay specified benefits, such as a percentage of the final average pay for each year of service, to their employees. The Department's allowable costs under these contracts include reimbursement of annual contractor contributions to these pension plans. Most of the contractors also sponsor postretirement benefits other than pensions (PRB) consisting of predominantly postretirement health care benefits. The Department approves, for cost reimbursement purposes, these contractors' pension and postretirement benefit plans and is responsible for the allowable costs of funding the plans. As such, the Department follows FASB ASC 715, Compensation – Retirement Benefits, for reporting contractor pension and PRB plans for which the Department has a continuing obligation to reimburse allowable costs. The Department also reimburses these contractors for employee disability insurance plans, and estimates are recorded as unfunded liabilities for these plans.

CONTRACTOR PENSION PLANS

As of September 30, 2017, the Department reports contractor pension assets (i.e., aggregate of net assets for all contractor plans with plan assets in excess of the projected benefit obligation) of $58 million and contractor pension liabilities (i.e., aggregate of net liabilities for all contractor plans with projected benefit obligations in excess of the plan assets) of $13.7 billion. The Department has a continuing obligation to reimburse allowable costs for a variety of contractor-sponsored pension plans (34 qualified and 13 nonqualified).

Contractors are required to make contributions to their plans as required by the Internal Revenue Code and the Employee Retirement Income Security Act (ERISA), as amended. For qualified defined benefit pension plans, the Department's current funding policy is to reimburse contractors for the minimum required contributions made, absent the Department's agreement to reimburse at a different level. For nonqualified plans, the funding policy is pay-as-you-go.

Assumptions and Methods – Contractors use their own actuarial assumptions for determining required contributions to employee pension plans. However, in order to provide consistency among the Department's various contractors, the Department requires the use of certain standardized actuarial assumptions for financial reporting purposes. These standardized assumptions include the discount rates, mortality assumptions, and an expected long-term inflation rate of 2.0 percent used consistently in the expected long-term rate of return on assets, salary scale, and other relevant economic assumptions affected by inflation, with adjustments to the 2.0 percent inflation rate to reflect regional or industry rates as appropriate. In most cases, ERISA valuation actuarial assumptions for demographic assumptions were used.

The following specific assumptions and methods were used to determine the net periodic cost. The weighted average discount rate was 3.50 percent for FY 2017 and 4.25 percent for FY 2016; the weighted average long-term rate of return on assets was 6.56 percent for FY 2017 and 6.60 percent for FY 2016; and the average rate of compensation increase was 3.4 percent for FY 2017 and 3.5 percent for FY 2016. The average long-term rate of return on assets shown above is the average rate for all of the contractor plans. Each contractor develops its own average long-term rate of return on assets based on the specific investment profile of the specific plans it sponsors. Therefore, there is no one overall approach to setting the rate of return for each of the contractors' plans.

The weighted average discount rates used to determine the benefit obligations as of September 30, 2017, and September 30, 2016, were 3.75 percent and 3.50 percent, respectively.

The aggregate accumulated benefit obligation and aggregate fair value of plan assets for plans with accumulated benefit obligations in excess of plan assets are $47.7 billion and $37.2 billion as of September 30, 2017, and $50.8 billion and $35.4 billion as of September 30, 2016, respectively. The aggregate projected benefit obligation and aggregate fair value of plan assets for plans with projected benefit obligations in excess of plan assets are $50.9 billion and $37.2 billion as of September 30, 2017, and $54.0 billion and $35.4 billion as of September 30, 2016, respectively.

Since the Department reports under Federal accounting requirements, newly measured net prior service costs/(credits) and net (gains)/losses are recognized immediately as components of net periodic cost rather than classified as other comprehensive income under FASB ASC 715 and later amortized and included as components of net periodic cost. All components of the net periodic cost are recognized in the Consolidated Statements of Net

Costs. Service costs are recorded by program and all other net periodic costs are recorded as costs not assigned (see Note 21). If the Department classified these costs as other comprehensive income, the amortization of the net prior service cost/(credit) and the net (gain)/loss for the defined benefit pension plans that would have been included in the net periodic cost would have been ($68) million and $925 million in FY 2017, and ($67) million and $718 million in FY 2016, respectively. Additional amortization of $50 million and $1 million due to curtailments and settlements would also have been included in FY 2017 and FY 2016, respectively. The estimated amortization of the net prior service cost/(credit), and the net (gain)/loss that would have been included in the net periodic cost in FY 2018 are ($65) million, and $498 million, respectively.

CONTRACTOR POSTRETIREMENT BENEFITS OTHER THAN PENSIONS

The Department's contractors sponsor a variety of postretirement benefits other than pensions. As of September 30, 2017, the Department reports contractor PRB assets of $14 million and contractor PRB liabilities of $9.4 billion. The Department accrues the cost of PRB during the years that the employees render service. Generally, the PRB plans are unfunded, and the Department's funding policy is to fund on a pay-as-you-go basis. There are five contractors, however, that are partially prefunding benefits as permitted by law.

Assumptions and Methods - In order to provide consistency among the Department's various contractors, certain standardized actuarial assumptions were used. These standardized assumptions include medical and dental trend rates, discount rates, and mortality assumptions.

The following specific assumptions and methods, with respect to trends in the costs of medical and dental benefit plans, were used in determining the PRB estimates. The projected medical trend rates for a point of service plan, HMO, PPO, or similar plan grade (i.e., decrease or increase) from 6.75 percent in 2017 down to 5.0 percent in 2031 and later for under age 65; and 7.25 percent in 2017 down to 5.0 percent in 2031 and later for age 65 and older. The medical trend rates for a traditional indemnity or similar plan grade from 7.5 percent in 2017 down to 5.0 percent in 2031 and later for under age 65; and 8.0 percent in 2017 down to 5.0 percent in 2031 and later for age 65 and older. Separate trend rates were used for a Medicare Advantage plan, a Part D Prescription Drug Plan (PDP), and a Non-Part D PDP. Trend rates for Medicare Advantage plans at all per member per month levels of employer costs grade from 5.85 percent in 2017 down to 5.0 percent by 2031 and later. The trend rates for a Part D PDP grade from 9.0 percent in 2017 down to 5.0 percent in 2031 and later; and for a Non-Part D PDP grade from 9.5 percent in 2017 down to 5.0 percent in 2031 and later. The medical trend rates or combination of rates used to determine the PRB estimates are dependent on each of the contractor's specific plan design and impact of health care reform, if applicable. The projected dental trend rate at all ages remains at 4.0 percent in 2017 through 2031 and later.

The weighted average discount rates of 3.50 percent for FY 2017 and 4.25 percent for FY 2016, and the weighted average long-term rate of return on assets of 4.76 percent for FY 2017 and 4.93 percent for FY 2016 were used to determine the net periodic cost. The rate of compensation increase was the same rate as each contractor used to determine pension contributions. The average long-term rate of return on assets shown above is the average rate for all of the contractor plans. Each contractor develops its own average long-term rate of return on assets based on the specific investment profile of the specific plans it sponsors. Therefore, there is no one overall approach to setting the rate of return for each of the contractors' plans.

The weighted average discount rates used to determine the benefit obligations as of September 30, 2017, and September 30, 2016, were 3.75 percent and 3.50 percent, respectively.

The aggregate accumulated postretirement benefit obligation and aggregate fair value of plan assets for plans with accumulated postretirement benefit obligations in excess of plan assets are $9.5 billion and $135 million as of September 30, 2017, and $10.4 billion and $135 million as of September 30, 2016, respectively.

Since the Department reports under Federal accounting requirements, newly measured net prior service costs/(credits) and net (gains)/losses are recognized immediately as components of net periodic cost rather than classified as other comprehensive income under FASB ASC 715 and later amortized and included as components of net periodic cost. All components of the net periodic cost are recognized in the Consolidated Statements of Net Costs. Service costs are recorded by program and all other net periodic costs are recorded as costs not assigned (see Note 21). If the Department classified these costs as other comprehensive income, the amortization of the net prior service cost/(credit) and the net (gain)/loss for the PRB plans that would have been included in the net periodic cost would have been ($455) million and $38 million in FY 2017, and ($610) million and $11 million in FY 2016, respectively. Additional amortization of ($3) million due to curtailments and settlements would also have been included in FY 2016, with none included in FY 2017. The estimated amortization of the net prior service cost/(credit) and the net (gain)/loss that would have been included in the net periodic cost in FY 2018 are ($352) million and $15 million, respectively.

The FY 2017 and FY 2016 values reflect the impact of health care reform legislation passed in March 2010. The liabilities reflect the contractors' best estimates given the guidance and regulations available for these laws. Liabilities in future years may need to be adjusted if new health care legislation is passed.

($ IN MILLIONS)	PENSION BENEFITS		OTHER POSTRETIREMENT BENEFITS	
	FY 2017	FY 2016	FY 2017	FY 2016
NET AMOUNT RECOGNIZED IN THE COMBINED BALANCE SHEET				
Accumulated benefit obligation	$ 49,359	$ 51,508		
Effect of future compensation increases	3,229	3,190		
Benefit obligation	**$ 52,588**	**$ 54,698**	$ 9,504	$ 10,394
Plan assets	38,922	36,197	155	154
Net amount recognized in the balance sheet (net funded status)	**$ (13,666)**	**$ (18,501)**	**$ (9,349)**	**$ (10,240)**
RECONCILIATION OF AMOUNTS RECOGNIZED IN THE COMBINED BALANCE SHEET				
Asset (prepaid pension plan costs) (Note 10)	$ 58	$ 88	$ 14	$ 13
Liability	(13,724)	(18,589)	(9,363)	(10,253)
Net amount recognized in the balance sheet (net funded status)	**$ (13,666)**	**$ (18,501)**	**$ (9,349)**	**$ (10,240)**
COMPONENTS OF NET PERIODIC COSTS				
Service costs (Note 22)	$ 1,025	$ 906	$ 189	$ 182
Interest costs	1,848	2,012	335	389
Expected return on plan assets	(2,316)	(2,157)	(7)	(7)
(Gain)/loss due to curtailments, settlements or special termination benefits	10	1	-	-
Net prior service cost/(credit)	7	(46)	18	(299)
Net (gain)/loss	(4,320)	3,135	(1,074)	110
Total net periodic costs	**$ (3,746)**	**$ 3,851**	**$ (539)**	**$ 375**
CONTRIBUTIONS AND BENEFIT PAYMENTS				
Employer contributions (Note 22)	$ 1,089	$ 1,316	$ 352	$ 353
Participant contributions	94	96	75	79
Benefit payments	2,335	2,129	434*	439*

* Includes $8 million paid from plan assets for FY 2017, and $7 million paid from plan assets for FY 2016. For FY 2017, gross benefit payments were $440 million including $6 million of Federal Medicare subsidy. This resulted in net benefit payments of $434 million for FY 2017. For FY 2016, gross benefit payments were $450 million including $11 million of Federal Medicare subsidy. This resulted in net benefit payments of $439 million for FY 2016.

($ IN MILLIONS)	PENSION BENEFITS	OTHER POSTRETIREMENT BENEFITS
Expected contributions for fiscal year ending September 30, 2018		
Employer contributions	$ 1,087	$ 444
Participant contributions	89	80

($ IN MILLIONS)	PENSION BENEFITS	OTHER POSTRETIREMENT BENEFITS		
		GROSS PAYMENT	LESS FEDERAL MEDICARE PART D SUBSIDY *	NET PAYMENT
ESTIMATED FUTURE BENEFIT PAYMENTS FY:				
2018	$ 2,682	$ 508	$ 1	$ 507
2019	2,279	530	1	529
2020	2,389	552	1	551
2021	2,486	574	1	573
2022	2,592	594	1	593
2023 to 2027	14,244	3,174	4	3,170

* Under the Medicare Prescription Drug, Improvement and Modernization Act of 2003, a Federal subsidy is provided to sponsors of retiree healthcare benefit plans that provide a benefit at least actuarially equivalent to the benefit established by the law. Generally, the Department has reflected the impact of the subsidy as a reduction to the employers' cost of the benefits.

The following chart shows the average target allocation for the 34 pension benefit plans and five other postretirement benefit plans with assets. The weighted average actual FY 2017 and FY 2016 allocations of assets are also shown. The allocation of assets has been adjusted for three pension plans to "Other" based on an assessment of applicable accounting standards and the Department's contractual relationship with the plans' sponsor.

	PENSION BENEFITS			OTHER POSTRETIREMENT BENEFITS		
ASSET CLASS	TARGET ALLOCATION	PERCENT OF PLAN ASSETS AT END FY 2017	PERCENT OF PLAN ASSETS AT END FY 2016	TARGET ALLOCATION	PERCENT OF PLAN ASSETS AT END FY 2017	PERCENT OF PLAN ASSETS AT END FY 2016
Cash and Equivalents	1.0%	2.3%	2.5%	0.2%	0.2%	0.3%
US Government Bonds	9.9%	8.8%	10.4%	3.2%	3.2%	4.6%
State and Municipal Government Bonds	0.6%	0.4%	0.7%	1.3%	1.3%	0.7%
Foreign Government Bonds	0.4%	0.6%	0.3%	0.0%	0.0%	0.1%
High-yield Corporate Bonds	2.0%	0.4%	0.5%	0.0%	0.0%	0.0%
Corporate Bonds other than high-yield	5.7%	18.8%	19.2%	3.4%	3.4%	3.2%
Domestic Equities	19.7%	19.3%	20.1%	1.8%	1.8%	1.6%
International Equities	17.3%	17.2%	15.5%	0.9%	0.9%	0.8%
Real Estate Investment Funds	3.2%	3.2%	2.8%	0.0%	0.0%	0.0%
Other Real Estate	0.3%	0.1%	0.3%	0.0%	0.0%	0.0%
Mortgage-Backed Securities	0.2%	0.7%	0.8%	0.4%	0.4%	0.2%
Asset-Backed Commercial Paper	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Derivatives, including Collateralized Debt Obligations and Credit Default Swaps	0.0%	0.1%	0.0%	0.9%	0.9%	0.4%
Private Investment Funds, including Hedge Funds	2.8%	2.9%	2.5%	0.0%	0.0%	0.0%
Insurance Contracts (general accounts)	0.2%	0.2%	0.2%	81.4%	81.4%	82.2%
Insurance Contracts (separate accounts)	0.0%	0.1%	0.1%	6.1%	6.1%	5.6%
Employer Securities	0.3%	0.5%	0.4%	0.0%	0.0%	0.0%
Aggregate Bond Index, Long Bond Index	1.3%	1.1%	1.2%	0.0%	0.0%	0.0%
Other	35.1%	23.3%	22.4%	0.4%	0.4%	0.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Each contractor develops its own investment policies and strategies for the plans it sponsors. Therefore, there is no one overall investment policy for the contractors' plans. Generally, their objectives provide for benefit security for plan participants through the maximization of total returns while limiting risk and providing liquidity coverage of benefit payments.

The following chart shows the allocation of the assets for FY 2017 and FY 2016 among the levels in the fair value hierarchy for the pension benefit plans with assets. The asset classes and allocation of assets among the fair value hierarchy have been adjusted for three pension plans to Level 2, "Other," based on an assessment of applicable accounting standards and the Department's contractual relationship with the plans' sponsor.

($ IN MILLIONS)			QUOTED PRICES IN ACTIVE MARKETS FOR IDENTICAL ASSETS		SIGNIFICANT OBSERVABLE INPUTS		SIGNIFICANT UNOBSERVABLE INPUTS	
Asset Class	**Total**		**Level 1**		**Level 2**		**Level 3**	
	FY 2017	**FY 2016**	**FY 2017**	**FY 2016**	**FY 2017**	**FY 2016**	**FY 2017**	**FY 2016**
Cash and Equivalents	$ 906	$ 917	$ 347	$ 370	$ 559	$ 459	$ -	$ 88
US Government Bonds	3,430	3,750	1,310	1,186	1,866	2,287	254	277
State and Municipal Government Bonds	157	253	-	-	157	253	-	-
Foreign Government Bonds	228	122	3	1	225	121	-	-
High-yield Corporate Bonds	158	189	-	7	158	182	-	-
Corporate Bonds other than high-yield	7,329	6,951	122	105	7,138	6,846	69	-
Domestic Equities	7,496	7,272	5,782	5,328	1,082	1,376	632	568
International Equities	6,688	5,594	3,555	2,075	3,133	3,519	-	-
Real Estate Investment Funds	1,233	1,024	79	74	189	179	965	771
Other Real Estate	40	90	-	-	-	-	40	90
Mortgage-Backed Securities	267	295	6	5	261	290	-	-
Asset-Backed Commercial Paper	4	44	-	1	4	43	-	-
Derivatives	29	(5)	1	-	28	(5)	-	-
Private Investment Funds	1,144	886	-	-	25	17	1,119	869
Insurance Contracts (general accounts)	90	90	-	-	53	50	37	40
Insurance Contracts (separate accounts)	28	25	-	-	28	25	-	-
Employer Securities	177	144	177	144	-	-	-	-
Aggregate Bond Index, Long Bond Index	446	443	-	11	446	432	-	-
Other	9,072	8,113	(43)	(118)	9,079	8,202	36	29
Total Assets	**$ 38,922**	**$ 36,197**	**$ 11,339**	**$ 9,189**	**$ 24,431**	**$ 24,276**	**$ 3,152**	**$ 2,732**

The following chart shows the reconciliation of the Level 3 assets for FY 2017 and FY 2016 for the pension benefit plans with assets. The FY 2016 beginning balances in the reconciliation of Level 3 assets reflect the adjustment of plan assets for three pension plans to Level 2, "Other," based on an assessment of applicable accounting standards and the Department's contractual relationship with the plans' sponsor.

($ IN MILLIONS)	CASH AND EQUIVALENTS	U.S. BONDS	CORPORATE BONDS	DOMESTIC EQUITIES	REAL ESTATE INVESTMENT FUNDS	OTHER REAL ESTATE	PRIVATE INVESTMENT FUNDS	INSURANCE CONTRACTS (GENERAL ACCOUNTS)	OTHER	TOTAL
	FY 2017									
Beginning Balance	$ 88	$ 277	$ -	$ 568	$ 771	$ 90	$ 869	$ 40	$ 29	$ 2,732
Actual return on plan assets:										
Relating to assets still held at the reporting date	-	(9)	1	97	50	1	10	1	(3)	148
Relating to assets sold during the period	-	7	-	8	24	1	30	-	2	72
Purchases, sales, and settlements	(2)	(21)	68	(44)	73	1	200	(2)	6	279
Transfers in and/or out of Level 3	(86)	-	-	-	-	-	-	(2)	-	(88)
Other	-	-	-	3	47	(53)	10	-	2	9
Ending Balance	**$ -**	**$ 254**	**$ 69**	**$ 632**	**$ 965**	**$ 40**	**$ 1,119**	**$ 37**	**$ 36**	**$ 3,152**
	FY 2016									
Beginning Balance	$ 70	$ 285	$ -	$ 552	$ 396	$ 69	$ 771	$ 40	$ 22	$ 2,205
Actual return on plan assets:										
Relating to assets still held at the reporting date	(1)	28	-	70	3	4	(38)	3	-	69
Relating to assets sold during the period	-	10	-	(3)	12	-	21	-	-	40
Purchases, sales, and settlements	19	(46)	-	(51)	386	14	120	(3)	-	439
Transfers in and/or out of Level 3	-	-	-	-	(23)	-	(2)	-	-	(25)
Other	-	-	-	-	(3)	3	(3)	-	7	4
Ending Balance	**$ 88**	**$ 277**	**$ -**	**$ 568**	**$ 771**	**$ 90**	**$ 869**	**$ 40**	**$ 29**	**$ 2,732**

Pension assets included in Level 1 of the fair value hierarchy are valued daily based on quoted prices in active markets. Assets included in Level 2 are valued using significant observable inputs other than quoted prices in active markets. US Government Bonds and Corporate Bonds included in Level 2 assets are generally part of collective investment funds valued at the net asset values of the funds based on the quoted prices of the underlying investments in active markets. Other bonds in these categories are valued based on interest rates and yield curves observable at commonly quoted intervals or at bid evaluation prices for securities traded on OTC markets as provided by independent pricing vendors. Domestic and International Equities included in Level 2 assets are generally part of collective investment funds valued at the net asset values of the funds based on the quoted prices of the underlying investments in active markets and may be subject to withdrawal restrictions. Assets included in Level 3 are valued using significant unobservable inputs. Private Investment Funds and Real Estate Funds included in Level 3 assets are generally priced by the fund general partners or investment managers, verified by independent third-party appraisers, and audited by independent auditing firms. The actual market values are generally only determinable by negotiations between independent parties pursuant to sales transactions. Assets held in Life Insurance Company General Accounts under Level 3 are generally credited guaranteed interest rates under the contracts or are valued based on the values of the underlying asset holdings of the accounts. Cash and domestic equities under Level 3 generally represent commingled fund investments held in an account utilizing an equity index and cash funds and are valued based on the values of the underlying holdings of the account.

There are two pension plans that have securities of the employer or related parties included in the plan assets. No assets are expected to be returned to the employers during the next FY.

The $155 million of assets in the five other postretirement benefit plans include $126 million of investments in insurance contracts of which $99 million is valued using significant unobservable inputs (Level 3). The balance of the Level 3 insurance contracts decreased by $5 million during FY 2017 from $104 million to $99 million due to the return on assets still held at the reporting date. Assets held in Life Insurance Company General and Separate Accounts under Levels 2 and 3 of the fair value hierarchy are generally credited guaranteed interest rates based on customized fixed income indices. The remaining assets in the other postretirement benefit plans are invested in asset classes similar to the assets of the pension plans. None of the other assets in the other postretirement benefit plans were valued using unobservable inputs.

Some of the Department's contractors' plan assets are invested in investment funds, which are recorded based on the net asset value (NAV) per share (or its equivalent) and reported by the underlying funds without further adjustment, as a practical expedient of fair value. Generally, the fair value of the investment in a privately offered investment fund represents the amount that the investor could reasonably expect to receive from the investment fund if the investment is withdrawn at the measurement date based on the NAV. These investments are redeemable at NAV under ordinary terms of the agreements and based on the operation of the underlying funds. However, it is possible that these redemption rights may be restricted or eliminated by the funds in the future in accordance with the underlying fund agreements. The terms of any fund agreements may vary by contractor.

17. Leases

Capital Leases:

($ IN MILLIONS)	FY 2017	FY 2016
SUMMARY OF ASSETS UNDER CAPITAL LEASE		
Power line equipment	$ 1,809	$ 1,579
ADP equipment	483	394
Construction work in progress	214	286
Lease-purchase trust funds (Note 10)	145	177
Other assets	-	1
Total capital lease assets	**$ 2,651**	**$ 2,437**
Less accumulated depreciation	(430)	(349)
Net assets under capital leases	**$ 2,221**	**$ 2,088**

($ IN MILLIONS) FISCAL YEAR 2017	POWER LINE EQUIPMENT	OTHER	TOTAL
Future lease payments:			
2018	$ 65	$ 60	$ 125
2019	76	32	108
2020	442	13	455
2021	630	1	631
2022	310	-	310
2023+	1,256	1	1,257
Total future lease payments	**$ 2,779**	**$ 107**	**$ 2,886**
Less imputed interest	(581)	(3)	(584)
Less executory costs	(28)	(1)	(29)
Net capital lease liability	**$ 2,170**	**$ 103**	**$ 2,273**
Capital lease liabilities covered by budgetary resources			$ (2,170)
Capital lease liabilities not covered by budgetary resources (Note 11)			(103)
Total capital lease liability			**$ (2,273)**

Operating Leases:

($ IN MILLIONS) FISCAL YEAR 2017	BUILDINGS/FACILITIES, EQUIPMENT & OTHER
Future lease payments:	
2018	$ 117
2019	113
2020	95
2021	87
2022	84
2023+	693
Total future lease payments	**$ 1,189**

The Department acquires functional use of various buildings/facilities, equipment, and other assets via operating lease instruments. The above table shows the Department's total future lease payments by fiscal year for all operating leases that have initial or remaining non-cancellable terms in excess of one year as of September 30, 2017. In particular, the bulk of the Department's $1.2 billion of total future lease payments for non-cancellable operating leases is comprised of two Occupancy Agreements (OA) between the DOE and GSA consisting of $980 million in future lease payments.

18. Contingencies and Commitments

($ IN MILLIONS)	FY 2017	FY 2016
Unfunded contingencies (Note 11)		
Spent nuclear fuel litigation	$ 27,248	$ 24,691
Other	54	436
Subtotal	**$ 27,302**	**$ 25,127**
Funded contingencies		
Other	2	7
Total contingencies	**$ 27,304**	**$ 25,134**

The Department is a party in various administrative proceedings, legal actions, and tort claims which may ultimately result in settlements or decisions adverse to the federal government. The Department has accrued contingent liabilities where losses are determined to be probable and the amounts can be estimated. Other significant contingencies exist where a loss is reasonably possible or where the loss is probable and an estimate cannot be determined. In some cases, a portion of any loss that may occur may be paid from Treasury's Judgment Fund. The Judgment Fund is a permanent, indefinite appropriation available to pay judgments against the government. The following are significant contingencies:

SPENT NUCLEAR FUEL LITIGATION

In accordance with the Nuclear Waste Policy Act of 1982 (NWPA), the Department entered into more than 68 Standard Contracts with utilities in which, in return for payment of fees into the NWF, the Department agreed to begin disposal of SNF by January 31, 1998. Because the Department has no facility available to receive SNF under the NWPA, it has been unable to begin disposal of the utilities' SNF as required by the contracts. Significant litigation claiming damages for partial breach of contract has ensued as a result of this delay.

To date, 39 suits have been settled involving utilities that collectively produce about 84 percent of the nuclear-generated electricity in the United States. Under the terms of the settlements, the Judgment Fund, 31 U.S.C. 1304, paid $4.9 billion as of September 30, 2017 to the settling utilities for delay damages they have incurred. In addition, 54 cases have been resolved by 46 unappealable judgments and eight voluntary withdrawals with no damages. Three of the unappealable judgments resulted in an award of no damages by the trial court and the 43 remaining cases resulted in a total of $2 billion in damages, that have been paid as of September 30, 2017.

The Department's SNF litigation liability is updated to include the effects of final judgments and settlements as well as payments to date from the Judgment Fund. Additional payments under these settled and adjudicated cases may be made if the utilities incur additional costs resulting from the Department's delay in acceptance of SNF. The Department believes its assumptions and methodology provide a reasonable basis for the contingent liability estimate.

An additional nine cases remain pending in the Court of Federal Claims. Liability is probable in these cases, and in many of these cases orders have already been entered establishing the Government's liability and the only outstanding issue to be litigated is the amount of damages to be awarded. Some years ago the industry was reported to estimate that damages for all utilities with which the Department has contracts ultimately would be at least $50 billion. The Department believes that the industry's estimate was highly inflated and that the disposition of the 85 cases that have either been settled or subject to a judgment in the trial court suggests that the Government's ultimate liability is likely to be significantly less than that estimate. Accordingly, based on these settlement estimates, the total liability estimate as of September 30, 2017 is $34.1 billion. After deducting the amount paid of $6.9 billion as of September 30, 2017 under these settlements and as a result of final judgments, the remaining liability is estimated to be approximately $27.2 billion. Under current law, any damages or settlements in this litigation will be paid out of the Judgment Fund. The Department's contingent liability estimate for SNF litigation is reported net of amounts paid to date from the Judgment Fund.

The Department previously reported several developments that made it difficult to reasonably predict the amount of the Government's likely liability. The previous Administration determined that the development of a repository at Yucca Mountain was unworkable and directed the then Secretary to establish the Blue Ribbon Commission on America's Nuclear Future (the Commission) to evaluate alternative approaches for meeting the Federal Government's responsibility. The Commission submitted a final report in January 2012. Subsequently, the previous Administration issued the "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste" on January 11, 2013. In March 2017, the Administration submitted *America First – A Budget Blueprint to Make America Great Again* to Congress that included the restart of licensing activities for the Yucca Mountain nuclear waste repository which was subsequently reflected in the Administration's FY 2018

Budget Request in May 2017. In February 2018, the Administration's FY 2019 Budget Request again included the restart of licensing activities for the Yucca Mountain nuclear waste repository. No funding was provided related to the Yucca Mountain repository in the Consolidated Appropriations Act for FY 2018 passed in March 2018. The liability estimate assumes a FY 2019 restart of licensing activities, and uses timeframes contained in the NWPA and the Yucca Mountain License Application.

ALLEGED EXPOSURES TO RADIOACTIVE AND/OR TOXIC SUBSTANCES

A number of class action and/or multiple plaintiff tort suits have been filed against current and former DOE contractors in which the plaintiffs seek damages for alleged exposures to radioactive and/or toxic substances as a result of the historic operations of the Department's nuclear facilities. The most significant of these cases arise out of operations of the facilities at Hanford, Washington; and Brookhaven, New York. Collectively, in these cases, damages in excess of $1.1 billion are currently sought.

In the Hanford litigation, following rulings by the court of appeals, seven of twelve bellwether plaintiffs' claims were resolved in favor of the defendants, relatively small judgments in favor of two bellwetherplaintiffs were affirmed, and three bellwether plaintiffs' claims were remanded to the district court for further proceedings. After mediation, settlements resolved all of the remaining active claims. On January 28, 2016, the court dismissed with prejudice the In re Hanford consolidated case because the lone opposition to such a decision, Plaintiff Frieda Seaman (deceased and represented by Chuck Seaman), had not actively prosecuted the case since 2002. On February 3, 2016, the Plaintiff appealed in Seaman v. DuPont to the Ninth Circuit. The appeal is still pending.

In the Brookhaven litigation, two class action cases, Oscarczuck v. Associated Universities and Tarzia v. Associated Universities, were filed in which residents and property owners near Brookhaven National Laboratory asserted claims for negligence, gross negligence, abnormally dangerous activity, and private nuisance and sought damages, primarily for air and ground water contamination, as a result of the release of hazardous substances stemming from Lab operations. In Osarczuk, at a prehearing conference on September 13, 2017, counsel for both parties told the court that they believed they were close to settling the seven remaining unsettled cases in the first set of 18 bellwether plaintiffs; Associated Universities Incorporated's counsel proposed to the court 11 new plaintiff groups for negotiation, but the plaintiffs' counsel did not propose any new plaintiff groups. The judge will set trial dates at a later date for those that do not settle. In addition to the 18 bellwether plaintiff groups, there are 35 remaining bellwether groups in this action. In Tarzia, at a prehearing conference on September 13, 2017, the judge stated that he would issue a decision on Associated Universities Incorporated's motion to dismiss this action, with prejudice, for failure to prosecute. Plaintiffs in the Brookhaven litigation are seeking $1.1 billion, collectively. However, the Department believes that if any damages are ultimately awarded, the amounts would be significantly less than what plaintiffs seek.

HANFORD SITE NATURAL RESOURCES DAMAGES

The Confederated Tribes of the Yakama Nation filed suit in September 2002 against DOE and the Department of Defense alleging natural resources damages in the 1100 area of the Hanford site. The Yakama Nation has since amended their complaint to add the 100 and 300 areas to the suit, alleging additional natural resources damages. In addition, the States of Washington and Oregon, as well as the Confederated Tribes of the Umatilla and the Nez Perce tribe, have joined the suit. Two of the four claims have been settled, the third claim remains stayed, and the fourth has been dismissed. The government reimbursed the Yakama Nation for its past response costs under claim one of the complaint. Under the settlement for claim two, the government will reimburse the plaintiffs through the Trustee Council for natural resource damage assessments. Claim three, which seeks natural resource damages recovery, remains stayed, until the issue of resource damages (if any) is resolved. Claim four was dismissed. The appeal is still pending.

MIXED OXIDE (MOX) LITIGATION

South Carolina filed suit against DOE and NNSA for their alleged failure to comply with requirements in 50 U.S.C. § 2566 for the disposition of weapons-grade plutonium at the Savannah River Site in South Carolina. South Carolina sought $100 million in economic impact and assistance payments. The court granted the United States' motion to dismiss the monetary claim, agreeing that it should be brought in the Court of Federal Claims, but granted South Carolina's motion for summary judgment to require the removal of one metric ton of defense plutonium from South Carolina. The State of South Carolina subsequently filed suit in the Court of Federal Claims, seeking $100 million in economic and impact assistance for calendar year 2017 related to the MOX facility and the removal of defense plutonium material. The Claims Court complaint does not expressly address South Carolina's previous monetary claim for an additional $100 million for calendar year 2016. There is also a possibility for DOE to owe $100 million per year in future years until DOE can either meet the MOX facility production objective or remove one metric ton of plutonium from South Carolina.

PADUCAH AND PORTSMOUTH NATURAL RESOURCE DAMAGES

As a result of releases of hazardous substances at the Paducah and Portsmouth Sites, the States of Ohio and Kentucky have potential claims against the Department under Comprehensive Environmental Response, Compensation, & Liability Act (CERCLA) for damages to natural resource (e.g., ground water) caused by such releases. The Department has had preliminary discussions with Ohio about a possible settlement of its claims for

natural resource damages at the Portsmouth site. Kentucky has indicated that it desires a "tolling" agreement with respect to potential claims for natural resource damages at the Paducah site. A tolling agreement would suspend the statute of limitations for the filing of the state's claims for a mutually agreeable period of time. The Department will continue its discussions with the states about their potential claims for natural resource damages. DOE and Ohio EPA are negotiating a Director's Final Findings and Order containing a possible settlement of claims for natural resource damages at the Portsmouth site. The current plan is to perform two environmental projects in return for a release of liability from Ohio. Although the Department will be liable for at least some natural resource damages at the sites, it is unable to prepare an estimate of such damages and has not included a provision for damages in the consolidated financial statements. As of the end of FY 2017, Kentucky has not pursued executing a tolling agreement.

PURCHASE POWER AND TRANSMISSION COMMITMENTS AND IRRIGATION ASSISTANCE

The PMAs have entered into commitments to sell expected generation for future dates. When the PMAs forecast a resource shortage they take a variety of operational and business steps to cover a potential shortage including entering into power purchase commitments. If appropriate, the PMAs will enter into long-term commitments to purchase power for future delivery. The PMAs record expenses associated with these purchases in the periods that power is received.

As directed by law, WAPA and BPA are required to establish rates sufficient to make cash distributions to the Treasury for the portion of BOR's original capital construction costs allocated to irrigation purposes, which were determined by the Secretary of the Interior to be beyond the ability of the irrigation customers to pay. These irrigation distributions do not specifically relate to power generation. In establishing power rates, particular statutory provisions guide the assumptions that WAPA and BPA makes as to the amount and timing of such distributions. As a result, WAPA and BPA include a schedule of irrigation assistance costs in each respective power system's power repayment study to demonstrate repayment of principal within the allowable repayment period. These repayment amounts do not incur or accumulate interest from the date that BOR determines the irrigators' inability to pay. Future irrigation assistance payments are scheduled for BPA to total $391 million over a maximum of 66 years since the time the irrigation facilities were completed and placed in service, and WAPA's payments are scheduled to total $1.8 billion by 2041.

Although these repayments will be recovered through power sales, they do not represent an operating cost of the individual power systems nor a liability on the consolidated balance sheets due to factors such as the variable payment schedule.

The following table summarizes future purchase power and transmission commitments and irrigation assistance. The table includes firm purchase power agreements of known cost that are currently in place to assist in meeting expected future obligations under long-term power sales contracts. BPA has several power purchase agreements with wind-powered and other generating facilities that are not included because payments are based on the variable amount of future energy generated, and there are no minimum payments required.

($ IN MILLIONS) FISCAL YEAR	PURCHASE POWER AND TRANSMISSION (ALL PMA's)	IRRIGATION ASSISTANCE (BPA and WAPA)
2018	$ 163	$ 27
2019	157	58
2020	114	69
2021	106	15
2022	74	24
2023+	155	1,948
Total	**$ 769**	**$ 2,141**

INTEGRATED FISH AND WILDLIFE PROGRAM

The Northwest Power Act directs BPA to protect, mitigate and enhance fish and wildlife resources to the extent they are affected by federal hydroelectric projects on the Columbia River and its tributaries, from which BPA markets power. BPA makes expenditures and incurs other costs for fish and wildlife projects that are consistent with the Northwest Power Act and that are consistent with the Pacific Northwest Power and Conservation Council's Columbia River Basin Fish and Wildlife Program. In addition, certain fish species that inhabit the Columbia River Basin are listed under the Endangered Species Act (ESA) as threatened or endangered. BPA makes expenditures and incurs other costs related to power purchases to comply with the ESA and implement certain biological opinions (BiOp) prepared by the National Oceanic and Atmospheric Administration Fisheries Service and the U.S. Fish and Wildlife Service in furtherance of the ESA. BPA's total commitment including timing of payments under the Northwest Power Act, ESA, and BiOp fluctuates because it is in part dependent on river flows and water conditions. As of September 30, 2017, BPA has entered into long-term fish and wildlife agreements with estimated contractual commitments of $383 million, which are likely to result in future expenses or regulatory assets. These agreements will expire at various dates between fiscal years 2018 and 2025.

19. Dedicated Collections

($ IN MILLIONS)	FY 2017					
	NUCLEAR WASTE FUND	D&D FUND	USEC	PMAs	OTHER FUNDS FROM DEDICATED COLLECTIONS	TOTAL FUNDS FROM DEDICATED COLLECTIONS
BALANCE SHEET						
ASSETS						
Fund Balance with Treasury	$ 3	$ 35	$ -	$ 3,903	$ 1,276	$ 5,217
Investments and related interest, net	37,671	2,389	1,639	205	(1)	41,903
Accounts receivable, net	2,620	-	-	674	6	3,300
Direct loans and loan guarantees, net	-	-	-	1	-	1
Inventory, net	-	-	-	138	166	304
General property plant and equipment, net	-	2	-	10,114	38	10,154
Regulatory assets	-	-	-	10,681	-	10,681
Other assets	-	15	-	4,385	-	4,400
Total Assets	**$ 40,294**	**$ 2,441**	**$ 1,639**	**$ 30,101**	**$ 1,485**	**$ 75,960**
LIABILITIES AND NET POSITION						
Accounts payable	$ 2	$ 149	$ -	$ 542	$ 2	$ 695
Debt	-	-	-	15,168	-	15,168
Deferred revenues and other credits	40,292	-	-	1,406	14	41,712
Environmental cleanup and disposal liabilities	-	25,462	-	18	-	25,480
Pensions and other actuarial liabilities	-	14	-	51	-	65
Obligations under capital leases	-	-	-	2,170	-	2,170
Other liabilities	-	11	-	2,869	17	2,897
Contingencies and commitments	-	-	-	44	(2)	42
Unexpended appropriations	-	-	-	-	10	10
Cumulative results of operations	-	(23,195)	1,639	7,833	1,444	(12,279)
Total Liabilities and Net Position	**$ 40,294**	**$ 2,441**	**$ 1,639**	**$ 30,101**	**$ 1,485**	**$ 75,960**
STATEMENT OF NET COST						
Program costs	$ 3	$ (535)	$ -	$ 3,938	$ 88	$ 3,494
Less earned revenues	(7)	(67)	-	(4,698)	(850)	(5,622)
Net program costs	**$ (4)**	**$ (602)**	**$ -**	**$ (760)**	**$ (762)**	**$ (2,128)**
Costs not assigned	-	5,746	-	-	(2)	5,744
Net cost of operations	**$ (4)**	**$ 5,144**	**$ -**	**$ (760)**	**$ (764)**	**$ 3,616**
STATEMENT OF CHANGES IN NET POSITION						
Cumulative results of operations, beginning balance	$ -	$ (18,093)	$ 1,625	$ 7,570	$ 1,118	$ (7,780)
Appropriations used	-	-	-	4	11	15
Non-exchange revenue	-	-	13	-	1	14
Donations and forfeitures of cash	-	-	-	5	-	5
Transfers - in/(out) without reimbursement	(4)	42	1	(586)	-	(547)
Other budgetary financing sources	-	-	-	76	-	76
Imputed financing	-	-	-	7	-	7
Other	-	-	-	(3)	(450)	(453)
Net cost of operations	4	(5,144)	-	760	764	(3,616)
Cumulative results of operations, ending balance	**$ -**	**$ (23,195)**	**$ 1,639**	**$ 7,833**	**$ 1,444**	**$ (12,279)**
Unexpended appropriations, beginning balance	$ -	$ -	$ -	$ -	$ 14	$ 14
Appropriations received	-	-	-	4	7	11
Appropriations used	-	-	-	(4)	(11)	(15)
Unexpended appropriations, ending balance	**$ -**	**$ -**	**$ -**	**$ -**	**$ 10**	**$ 10**

Dedicated Collections (continued)

($ IN MILLIONS)	FY 2016					
	NUCLEAR WASTE FUND	D&D FUND	USEC	PMAs	OTHER FUNDS FROM DEDICATED COLLECTIONS	TOTAL FUNDS FROM DEDICATED COLLECTIONS
BALANCE SHEET						
ASSETS						
Fund balance with Treasury	$ 2	$ 29	$ -	$ 3,538	$ 945	$ 4,514
Investments and related interest, net	36,027	2,565	1,626	478	2	40,698
Accounts receivable, net	2,789	-	-	711	11	3,511
Direct loans and loan guarantees, net	-	-	-	1	-	1
Inventory, net	-	-	-	138	168	306
General property plant and equipment, net	-	4	-	10,039	36	10,079
Regulatory assets	-	-	-	10,983	-	10,983
Other assets	-	13	-	4,254	-	4,267
Total Assets	**$ 38,818**	**$ 2,611**	**$ 1,626**	**$ 30,142**	**$ 1,162**	**$ 74,359**
LIABILITIES AND NET POSITION						
Accounts payable	$ 1	$ 160	$ 1	$ 441	$ 4	$ 607
Debt	-	-	-	15,451	2	15,453
Deferred revenues and other credits	38,817	-	-	1,426	4	40,247
Environmental cleanup and disposal liabilities	-	20,530	-	22	-	20,552
Pensions and other actuarial liabilities	-	6	-	47	-	53
Obligations under capital leases	-	-	-	2,067	-	2,067
Other liabilities	-	(2)	-	3,074	20	3,092
Contingencies and commitments	-	10	-	44	-	54
Unexpended appropriations	-	-	-	-	14	14
Cumulative results of operations	-	(18,093)	1,625	7,570	1,118	(7,780)
Total Liabilities and Net Position	**$ 38,818**	**$ 2,611**	**$ 1,626**	**$ 30,142**	**$ 1,162**	**$ 74,359**
STATEMENT OF NET COST						
Program costs	$ 2	$ 25	$ -	$ 3,872	$ 139	$ 4,038
Less earned revenues	(6)	(114)	-	(4,640)	(107)	(4,867)
Net program costs	**$ (4)**	**$ (89)**	**$ -**	**$ (768)**	**$ 32**	**$ (829)**
Costs not assigned	-	(2,185)	-	-	(2)	(2,187)
Net cost of operations	**$ (4)**	**$ (2,274)**	**$ -**	**$ (768)**	**$ 30**	**$ (3,016)**
STATEMENT OF CHANGES IN NET POSITION						
Cumulative results of operations, beginning balance	$ -	$ (20,412)	$ 1,617	$ 7,248	$ 1,137	$ (10,410)
Appropriations used	-	-	-	2	11	13
Non-exchange revenue	-	-	8	-	(1)	7
Donations and forfeitures of cash	-	-	-	38	-	38
Transfers - in/(out) without reimbursement	(4)	45	-	(525)	1	(483)
Other budgetary financing sources	-	-	-	61	-	61
Imputed financing	-	-	-	8	-	8
Other	-	-	-	(30)	-	(30)
Net cost of operations	4	2,274	-	768	(30)	3,016
Cumulative results of operations, ending balance	**$ -**	**$ (18,093)**	**$ 1,625**	**$ 7,570**	**$ 1,118**	**$ (7,780)**
Unexpended appropriations, beginning balance	$ -	$ -	$ -	$ -	$ 15	$ 15
Appropriations received	-	-	-	2	8	10
Appropriations used	-	-	-	(2)	(9)	(11)
Unexpended appropriations, ending balance	**$ -**	**$ -**	**$ -**	**$ -**	**$ 14**	**$ 14**

NUCLEAR WASTE FUND

The NWPA requires the owners and generators of nuclear waste to pay their share of disposal costs into the NWF and, to that end, establishes a fee for electricity generated and sold by civilian nuclear power. A special fund within Treasury was created to account for the collection of those fees. Fees collected are invested in Treasury securities and any interest earned is available to pay expenditures related to radioactive waste disposal activities covered by the NWF. The NWPA requires preparation of annual financial statements.

DECONTAMINATION AND DECOMMISSIONING FUND

The Energy Policy Act of 1992 established the D&D Fund to pay for the costs of decontamination and decommissioning of gaseous diffusion facilities through collection of revenues derived from domestic utility assessments and government appropriations. The Energy Policy Act also requires that balances in the D&D fund be invested in Treasury securities and any interest earned would be available to pay the costs of environmental remediation. On May 5, 2017, the President signed into law the Consolidated Appropriations Act of 2017 which provided the EM program with $563M for the D&D fund. As a result, $563M was transferred from the Defense Environmental Cleanup account via expenditure transfer to the D&D fund impacting the Earned Revenues. The D&D Fund earned revenues were adjusted to reflect that $563 million was eliminated at the consolidated level.

U.S. ENRICHMENT CORPORATION FUND

Upon privatization of USEC on July 28, 1998, OMB and Treasury designated the Department as successor to USEC for purposes of disposition of balances remaining in the USEC fund. These funds are invested in Treasury securities.

POWER MARKETING ADMINISTRATIONS

The PMAs are funded primarily from four sources. These include contract and borrowing authority, direct receipts generated from the sale of power, and annual appropriations. Each of the PMAs, except for the self-financed BPA, receives an annual appropriation from Treasury's General Fund. WAPA also receives an annual appropriation from a receipt fund within the Reclamation Fund. In most instances, these appropriated funds are repaid to Treasury's General Fund and the Reclamation Fund from the receipts generated from power sales.

20. Program Costs and Earned Revenues by Strategic Objective

($ IN MILLIONS)	INTRA-GOVERNMENTAL	PUBLIC	TOTAL	INTRA-GOVERNMENTAL	PUBLIC	TOTAL
	FY 2017			FY 2016		
Science and Energy						
Advance the goals and objectives in the President's Climate Action Plan						
Program Costs	$ 1,059	$ 6,584	$ 7,643	$ 1,112	$ 6,527	$ 7,639
Earned Revenues	(156)	(4,884)	(5,040)	(147)	(4,780)	(4,927)
Amortization Adjustment	-	48	48	-	40	40
Support the U.S. energy infrastructure						
Program Costs	26	999	1,025	21	486	507
Earned Revenues	-	(772)	(772)	-	(1)	(1)
Discover and strengthen science and technology innovation						
Program Costs	45	4,753	4,798	47	4,781	4,828
Earned Revenues	-	(81)	(81)	-	(68)	(68)
Net Costs of Science and Energy	**$ 974**	**$ 6,647**	**$ 7,621**	**$ 1,033**	**$ 6,985**	**$ 8,018**
Nuclear Security						
Maintain the nation's nuclear deterrent without nuclear testing						
Program Costs	$ 80	$ 4,272	$ 4,352	$ 75	$ 4,699	$ 4,774
Strengthen science, technology, and engineering capabilities						
Program Costs	95	2,945	3,040	63	2,612	2,675
Reduce global nuclear security threats						
Program Costs	22	1,670	1,692	18	1,725	1,743
Earned Revenues	(8)	-	(8)	(16)	-	(16)
Provide integrated nuclear propulsion systems for U.S. Navy						
Program Costs	11	1,354	1,365	11	1,212	1,223
Earned Revenues	3	(38)	(35)	(3)	(13)	(16)
Net Costs of Nuclear Security	**$ 203**	**$ 10,203**	**$ 10,406**	**$ 148**	**$ 10,235**	**$ 10,383**
Management and Performance						
Continue cleanup from Manhattan Project and Cold War activities						
Program Costs	$ 126	$ 5,041	$ 5,167	$ 117	$ 4,876	$ 4,993
Earned Revenues	(22)	(102)	(124)	(25)	(122)	(147)
Deferred Revenue Adjustment	(1,465)	1,459	(6)	(1,431)	1,425	(6)
Manage assets to support DOE mission						
Program Costs	7	109	116	6	99	105
Manage projects, agreements, contracts, and contractor performance						
Program Costs	20	150	170	19	135	154
Operate the DOE enterprise safely, securely, and efficiently						
Program Costs	55	547	602	69	515	584
Attract, manage, train, and retain the best federal workforce						
Program Costs	7	47	54	8	51	59
Net Costs of Management and Performance	**$ (1,272)**	**$ 7,251**	**$ 5,979**	**$ (1,237)**	**$ 6,979**	**$ 5,742**
Net Cost of Strategic Goals	**$ (95)**	**$ 24,101**	**$ 24,006**	**$ (56)**	**$ 24,199**	**$ 24,143**
Other Programs						
Reimbursable programs						
Program Costs	$ 5	$ 4,273	$ 4,278	$ 12	$ 4,201	$ 4,213
Earned Revenues	(3,601)	(508)	(4,109)	(3,550)	(463)	(4,013)
Net Costs of Reimbursable Programs	**$ (3,596)**	**$ 3,765**	**$ 169**	**$ (3,538)**	**$ 3,738**	**$ 200**
Other programs						
Program Costs	$ 390	$ 109	$ 499	$ 355	$ 155	$ 510
Earned Revenues	-	(352)	(352)	-	(341)	(341)
Net Costs of Other Programs	**$ 390**	**$ (243)**	**$ 147**	**$ 355**	**$ (186)**	**$ 169**
Costs applied to reduction of legacy environmental liabilitites (Note 15)	-	(5,634)	$ (5,634)	-	(5,564)	$ (5,564)
Costs not assigned (Note 21)	$ 7,311	$ 15,518	$ 22,829	$ 2,454	$ 42,281	$ 44,735
Net Cost of Operations	**$ 4,010**	**$ 37,507**	**$ 41,517**	**$ (785)**	**$ 64,468**	**$ 63,683**

SCIENCE AND ENERGY

The program costs and revenues related to Science and Energy are used to advance foundational science, innovate energy technologies, and inform data-driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality. All strategic objectives within this goal include costs, but not all include material revenues.

- **Advance the goals and objectives in the President's Climate Action Plan** – Supports prudent development, deployment, and efficient use of "all of the above" energy resources that also create new jobs and industries. The majority of the earned revenues found within this objective are derived from the PMAs which market electricity that is generated primarily by federal hydropower projects.

- **Support the U.S. energy infrastructure** – Supports a more economically competitive, secure and resilient U.S. energy infrastructure. The earned revenues found within this objective are comprised of the SPR's oil sales of $323 million authorized by the Bipartisan Budget Act of 2015 in addition to $449 million authorized by the 21st Century Cures Act of 2015. The historical cost of the crude oil sold for the Bipartisan Budget Act was $206M and for the 21st Century Cures Act was $ 272M.
- **Deliver and strengthen science and technology innovation** – Delivers the scientific discoveries and major scientific tools that transform our understanding of nature and strengthen the connection between advances in fundamental science and technology innovation.

NUCLEAR SECURITY

The program costs and revenues related to Nuclear Security are used to strengthen national security by maintaining and modernizing the nuclear stockpile and nuclear security infrastructure, reducing global nuclear threats, providing for nuclear propulsion, improving physical and cybersecurity, and strengthening key science, technology, and engineering capabilities. All strategic objectives within this goal include costs, but none of them include material revenues.

- **Maintain the nation's nuclear deterrent without nuclear testing –** Sustains a safe, secure, and effective nuclear arsenal.
- **Strengthen science, technology, and engineering capabilities –** Strengthens key science, technology, and engineering capabilities and modernize the national security infrastructure.
- **Reduce global nuclear security threats –** Prevents nuclear terrorism and the spread of nuclear weapons-related materials, technology, and expertise.
- **Provide integrated nuclear propulsion systems for U.S. Navy** – Provides the design, development, and operational support required to provide militarily effective nuclear propulsion plants and ensure their safe, reliable, and long-lived operation.

MANAGEMENT AND PERFORMANCE

The program costs and revenues associated with Management and Performance are used to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue departmental missions. All strategic objectives within this goal include costs, but not all include material revenues.

- **Continue cleanup from Manhattan Project and Cold War activities –** Continues cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. .
- **Manage assets to support DOE mission –** Manages assets in a sustainable manner that supports the DOE mission.
- **Manage projects, agreements, contracts, and contractor performance** – Improves the effectiveness and efficiency of DOE's financial assistance agreements, contract and project management performance.
- **Operate the DOE enterprise safely, securely, and efficiently –** Ensures the efficiency and effectiveness of DOE's mission success.
- **Attract, manage, train, and retain the best federal workforce –** Plans and improves outreach, recruitment programs, and human resource operations.

OTHER PROGRAMS

Reimbursable Programs

The Department performs work or services for other federal agencies and private companies on a reimbursable work basis and on a cooperative work basis. The Department's policy is to establish prices for materials and services provided to public entities at the Department's full cost. In some cases, the full cost information reported by the Department in accordance with SFFAS No. 4, Managerial Cost Accounting Concepts and Standards for the Federal Government, exceeds revenues.

Costs Applied to Reduction of Legacy Environmental Liabilities

The costs applied to reduction of legacy environmental liabilities are current year operating expenditures for the remediation of contaminated facilities and wastes generated from past operations. These amounts are excluded from current year environmental liabilities estimate since the expenses have been accrued.

21. Costs Not Assigned

($ IN MILLIONS)	FY 2017	FY 2016
Spent nuclear fuel contingency (Note 18)		
Judgment Fund payments (Note 22)	$ 731	$ 796
Change in estimates (Note 22)	2,559	990
Current year spent nuclear fuel contingency costs	$ 3,290	$ 1,786
Change in environmental liabilities estimates (Note 22)	$ 18,974	$ 39,129
Changes in contractor pension and PRB estimates (Note 22)	(5,499)	3,136
Change in unfunded safety and health liabilities (Notes 11, 14 and 22)	(123)	8
Change in occupational illness program (Note 22)	5,852	1,642
Other Judgment Fund payments (Note 22)	340	10
Other	(5)	(976)
Total Costs Not Assigned	**$ 22,829**	**$ 44,735**

CHANGES IN ENVIRONMENTAL LIABILITIES ESTIMATES

The changes in environmental liabilities estimates resulted from inflation adjustments to reflect constant dollars for the current year; improved and updated estimates for the same scope of work, including changes resulting from deferral or acceleration of work; revisions in technical approach or scope, including additional contamination; updated estimates of projected waste volumes; changes in the Department's allocable percentage share of future costs; legal and regulatory changes; and cleanup activities performed (See Note 15).

CHANGES IN CONTRACTOR PENSION AND PRB ESTIMATES

The changes in contractor pension and PRB estimates are comprised of all the components of contractor pension and PRB net periodic costs except for service costs [i.e., interest costs; expected return on plan assets; (gain)/loss due to curtailments, settlements, or special termination benefits; net prior service cost/(credit); and net (gain)/loss including impacts of changes in actuarial assumptions]. Service costs are not included since they are recorded by program (see Notes 16 and 22).

COMPENSATION PROGRAM FOR OCCUPATIONAL ILLNESSES

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) authorized compensation for certain illnesses suffered by employees of the Department, its predecessor agencies, and contractors who performed work for the nuclear weapons program. EEOICPA covers illnesses associated with exposure to radiation, beryllium, or silica. In general, each eligible employee and survivors of deceased employees will receive compensation for the disability or death of that employee in the amount of $150,000 plus the costs of medical care.

The National Defense Authorization Act of 2005 amended the EEOICPA to grant workers' compensation benefits to covered employees and their families for illness and death arising from exposure to toxic substances at the Department's facilities. The amendment also makes it possible for uranium workers, as defined under Section 5 of the Radiation Exposure Compensation Act, to receive compensation for illnesses due to toxic substance exposure at a uranium mine or mill covered under that Act.

As of September 30, 2005, the law makes payments under these programs the responsibility of the Department of Labor. Therefore, the liability is recorded by the Department of Labor and changes in the total liability are recognized by the Department as an imputed cost and an imputed financing source. The increase in the liability estimate for FY 2017 is primarily due to an overall increase in medical inflation rate assumptions.

22. Reconciliation of Net Cost of Operations to Budget

($ IN MILLIONS)	FY 2017	FY 2016
RESOURCES USED TO FINANCE ACTIVITIES		
New obligations and upward adjustments (Note 23)	$ 42,174	$ 40,336
Less spending authority from offsetting collections and recoveries	(12,813)	(11,263)
Less offsetting receipts (Note 23)	(4,040)	(3,192)
Net obligations	**$ 25,321**	**$ 25,881**
Imputed financing from costs absorbed by others		
Increase in occupational illnesses liability (Note 21)	$ 5,852	$ 1,642
Imputed costs	74	92
Payments made from Treasury's Judgment Fund (Note 21)	1,071	806
Total imputed costs absorbed by others	**$ 6,997**	**2,540**
Transfers-in/(out) without reimbursement	(161)	(144)
Nuclear Waste Fund offsetting receipts, deferred	2,442	1,923
Other	-	15
Total resources used to finance activities	**$ 34,599**	**$ 30,215**
RESOURCES USED TO FINANCE ACTIVITIES NOT PART OF NET COST OF OPERATIONS		
Change in budgetary resources obligated for orders but not yet provided	$ (464)	$ 196
Resources that finance the acquisition of assets	(5,274)	(6,144)
Credit program collection and receipts that increase liabilities	1,432	1,147
Resources that fund expenses recognized in prior periods	(5,602)	(5,568)
Other resources and adjustments	318	(72)
Total resources used to finance items not part of Net Cost of Operations	**$ (9,590)**	**$ (10,441)**
COMPONENTS OF THE NET COST OF OPERATIONS THAT DO NOT REQUIRE OR GENERATE RESOURCES IN THE CURRENT PERIOD		
Contractor Pension and PRB plans		
Contractor pension and PRB estimate changes (Note 21)	$ (5,499)	$ 3,136
Current year pension and PRB service costs (Note 16)	1,214	1,088
Current year pension and PRB employer contributions (Note 16)	(1,441)	(1,669)
Total pension and PRB plans	**$ (5,726)**	**$ 2,555**
Change in environmental liability estimates (Note 21)	18,974	39,129
Change in spent nuclear fuel contingency (Note 21)	2,559	990
Change in unfunded ESPC and similar unfunded contracts	(42)	(4)
Change in unfunded safety and health liabilities (Notes 11, 14 and 21)	(123)	8
Upward/Downward re-estimates of credit subsidy expense	(214)	(159)
Change in other unfunded liabilities	12	(810)
Depreciation of property, plant and equipment	1,851	1,846
Amortization of premiums and discounts on Treasury investments	(854)	(201)
Revaluation of assets and liabilities for loans	52	46
Other amortization	167	176
Gain on SPRO oil sales	(295)	
Other	147	333
Total net cost of items that do not require or generate resources in current period	**$ 16,508**	**$ 43,909**
NET COST OF OPERATIONS	**$ 41,517**	**$ 63,683**

NUCLEAR WASTE FUND OFFSETTING RECEIPTS, DEFERRED

The Department defers the recognition of revenues related to interest earned on the invested balance of fees previously paid by owners and gererators of SNF, to the extent that the receipts exceed current year costs for developing and managing a permanent repository for SNF generated by civilian reactors. In addition, market value adjustments for Treasury securities of the NWF are not recognized as revenues in the current period unless redeemed by the Department. The gross amount of receipts and interest collected are reported as offsetting receipts on the *Combined Statements of Budgetary Resources*. Therefore, a reconciling amount is reported for the portion of the offsetting receipts for which revenues are not recognized in the current period.

23. Combined Statements of Budgetary Resources

The *Statements of Budgetary Resources* are presented on a combined, rather than a consolidated, basis in accordance with OMB guidance.

DETAILS OF NEW OBLIGATIONS AND UPWARD ADJUSTMENTS ($ IN MILLIONS)	FY 2017	FY 2016
Direct		
Category A (by quarter)	$ 16,234	$ 15,326
Category B (by project)	16,805	15,998
Sub-total direct new obligations and upward adjustments	**$ 33,039**	**$ 31,324**
Exempt from apportionment	3,977	4,108
Reimbursable		
Category A (by quarter)	11	31
Category B (by project)	5,147	4,873
Sub-total reimbursable new obligations and upward adjustments	**$ 5,158**	**$ 4,904**
Total new obligations and upward adjustments (Note 22)	**$ 42,174**	**$ 40,336**

UNOBLIGATED BALANCES NOT AVAILABLE ($ IN MILLIONS)	FY 2017	FY 2016
Loan funds reserved for future defaults	$ 1,272	$ 1,405
Unexpired appropriations that did not receive apportionments	12	14
Prior year deobligations in excess of apportioned amount	8	284
Non-expenditure transfers not apportioned	1	-
Reimbursable work/offsetting collections in excess of apportioned amount	3	5
Expired appropriations	89	75
Other amounts not apportioned	3	-
Total unobligated balances not available (Note 3)	**$ 1,388**	**$ 1,783**

Unobligated balances not available represent budgetary resources that have not been apportioned to the Department.

DETAILS OF UNPAID OBLIGATIONS ($ IN MILLIONS)	FY 2017	FY 2016
Undelivered orders	$ 23,343	$ 22,829
Accounts payable and other liabilities	8,286	8,129
Total unpaid obligations (Note 3)	**$ 31,629**	**$ 30,958**

RECONCILIATION TO APPROPRIATIONS RECEIVED ON THE CONSOLIDATED STATEMENTS OF CHANGES IN NET POSITION ($ IN MILLIONS)	FY 2017	FY 2016
Appropriations on the Combined Statements of Budgetary Resources:		
Definite appropriations	$ 31,073	$ 29,774
Permanent indefinite appropriations	12	41
Total appropriations on the Combined Statements of Budgetary Resources	**$ 31,085**	**$ 29,815**
Adjustments to take the SBR from net appropriations to appropriations received:		
Rescissions, sequesters, and other amounts precluded from obligation	$ 432	$ 27
Other adjustments:		
Special and trust fund appropriated receipts	(1,190)	(773)
Appropriated capital owed, net	(11)	(11)
Other	4	2
Appropriations received on the Consolidated Statements of Changes in Net Position	**$ 30,320**	**$ 29,060**

PERMANENT INDEFINITE APPROPRIATIONS

The Department is authorized to use indefinite appropriations per the FCRA. These amounts are used to fund upward re-estimates on the FCRA loans.

RECONCILIATION TO THE BUDGET (FY 2017) ($ IN MILLIONS)	BUDGETARY RESOURCES	NEW OBLIGATIONS & UPWARD ADJUSTMENTS (TOTAL)	DISTRIBUTED OFFSETTING RECEIPTS	NET OUTLAYS
Combined Statements of Budgetary Resources as published	$ 51,258	$ 42,174	$ (4,040)	$ 28,812
OMB adjustments made to exclude:				
U.S. Enrichment Corporation Fund	-	-	-	(16)
Non-budgetary Credit Reform Financing Accounts	(1,838)	(553)	-	1,039
Expired accounts	(89)	-	-	-
Other	(5)	(1)	3	2
Budget of the United States Government	**$ 49,326**	**$ 41,620**	**$ (4,037)**	**$ 29,837**

RECONCILIATION TO THE BUDGET (FY 2016) ($ IN MILLIONS)	BUDGETARY RESOURCES	NEW OBLIGATIONS & UPWARD ADJUSTMENTS (TOTAL)	DISTRIBUTED OFFSETTING RECEIPTS	NET OUTLAYS
Combined Statements of Budgetary Resources as published	$ 49,752	$ 40,336	$ (3,192)	$ 29,152
OMB adjustments made to exclude:				
U.S. Enrichment Corporation Fund	-	-	-	7
Non-budgetary Credit Reform Financing Accounts	(1,986)	(569)	-	(113)
Expired accounts	(75)	-	-	-
Other	(2)	(3)	12	(6)
Budget of the United States Government	**$ 47,689**	**$ 39,764**	**$ (3,180)**	**$ 29,040**

The FY 2016 *Combined Statements of Budgetary Resources* are reconciled to the President's Budget that was published in May 2017. The FY 2017 *Combined Statements of Budgetary Resources* are reconciled to the President's Budget that was published in February 2018. Budgetary resources, new obligations and upward adjustments, and net outlays are reconciled to the departmental balances as published in the Appendix to the Budget; distributed offsetting receipts is reconciled to the departmental balances in the Federal Budget by Agency and Account section of the Analytical Perspectives Volume of the President's Budget.

The non-budgetary credit reform financing accounts are reported separately in the President's Budget and are not reflected in the budget surplus or deficit. Unobligated balances in expired accounts are reported in the SBR but are not included in the President's Budget.

BORROWING AUTHORITY

The Department's borrowing authority reflected in the *Combined Statements of Budgetary Resources* represents the amount of borrowing authority for the current FY's obligations, which may or may not have been converted to cash. The amount of borrowing authority available for the Department's loan program has decreased from $4.1 billion as of September 30, 2016, to $2.8 billion as of September 30, 2017, BPA has decreased from $2.9 billion as of September 30, 2016, to $2.7 billion as of September 30, 2017, while the amount of borrowing authority available for WAPA has remained unchanged at $3.2 billion. The amounts available are authority that has not been converted to cash.

24. Custodial Activities

POWER MARKETING ADMINISTRATIONS

The SEPA, SWPA, and WAPA are responsible for collecting and remitting to Treasury and the DOI revenues attributable to the hydroelectric power projects owned and operated by the DoD, USACE; DOI, BOR; and the DOS, International Boundary and Water Commission. These revenues are reported as custodial activities of the Department.

FEDERAL ENERGY REGULATORY COMMISSION

FERC is responsible for billing regulated companies annual charges as a custodian for certain federal agencies. These include: 1) the USACE for licensees to provide maintenance and operations of dams owned by the U.S. and maintenance for operations of headwater or other navigable waters owned by the U.S.; 2) the BOR for the occupancy and use of public lands and national parks owned by the U.S. and for Indian Tribal Trust Funds from licensees for the reservation of Indian land; 3) Treasury

for revenues collected based on penalties, interest, and administrative charges for overdue accounts receivables and for civil penalties; and 4) payments to states collected from licensees for the occupancy and use of national forests and public lands from development within the boundaries of any state.

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Consolidating Schedules

U.S. Department of Energy Consolidating Schedules - Balance Sheets

As of September 30, 2017 and 2016

(See independent auditors' report)

($ IN MILLIONS)	FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
	FY 2017				
ASSETS:					
Intragovernmental Assets:					
Fund Balance with Treasury	$ 119	$ 3,918	$ 29,717	$ -	$ 33,754
Investments and Related Interest, Net	-	205	41,698	-	41,903
Accounts Receivable, Net	-	161	874	(522)	513
Other Assets	-	-	152	(72)	80
Total Intragovernmental Assets	**$ 119**	**$ 4,284**	**$ 72,441**	**$ (594)**	**$ 76,250**
Investments and Related Interest, Net	-	-	-	-	-
Accounts Receivable, Net	98	524	2,741	-	3,363
Direct Loans and Loan Guarantees, Net	-	1	13,690	-	13,691
Inventory, Net:	-	138	44,451	-	44,589
General Property, Plant, and Equipment, Net	12	10,114	24,944	-	35,070
Regulatory Assets	-	10,681	-	-	10,681
Other Non-Intragovernmental Assets	-	4,385	470	-	4,855
Total Assets	**$ 229**	**$ 30,127**	**$ 158,737**	**$ (594)**	**$ 188,499**
LIABILITIES:					
Intragovernmental Liabilities:					
Accounts Payable	$ 12	$ 121	$ 263	$ (219)	$ 177
Debt	-	9,014	14,626	-	23,640
Deferred Revenues and Other Credits	-	2	183	(78)	107
Other Liabilities	78	38	1,148	(297)	967
Total Intragovernmental Liabilities	**$ 90**	**$ 9,175**	**$ 16,220**	**$ (594)**	**$ 24,891**
Accounts Payable	10	421	3,286	-	3,717
Loan Guarantee Liability	-	-	134	-	134
Debt Held by the Public	-	6,154	-	-	6,154
Deferred Revenues and Other Credits	-	1,404	40,791	-	42,195
Environmental Cleanup and Disposal Liabilities	-	18	383,766	-	383,784
Pension and Other Actuarial Liabilities	4	51	23,143	-	23,198
Obligations Under Capital Leases	2	2,170	101	-	2,273
Other Non-Intragovernmental Liabilities	50	2,857	3,136	-	6,043
Contingencies and Commitments	-	44	27,260	-	27,304
Total Liabilities	**$ 156**	**$ 22,294**	**$ 497,837**	**$ (594)**	**$ 519,693**
NET POSITION:					
Unexpended Appropriations					
Unexpended Appropriations- Dedicated Collections	$ -	$ -	$ 10	$ -	$ 10
Unexpended Appropriations- Other Funds	-	-	22,485	-	22,485
Cumulative Results of Operations					
Cumulative Results of Operations - Dedicated Collections	-	7,833	(20,112)	-	(12,279)
Cumulative Results of Operations - Other Funds	73	-	(341,483)	-	(341,410)
Total Net Position	**$ 73**	**$ 7,833**	**$ (339,100)**	**$ -**	**$ (331,194)**
Total Liabilities and Net Position	**$ 229**	**$ 30,127**	**$ 158,737**	**$ (594)**	**$ 188,499**

FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
FY 2016				
$ 106	$ 3,538	$ 28,164	$ -	$ 31,808
-	478	40,368	-	40,846
-	212	946	(581)	577
-	-	135	(77)	58
$ 106	**$ 4,228**	**$ 69,613**	**$ (658)**	**$ 73,289**
-	-	102	-	102
16	506	2,858	-	3,380
-	1	14,645	-	14,646
-	138	43,930	-	44,068
14	10,039	24,452	-	34,505
-	10,983	-	-	10,983
-	4,254	294	-	4,548
$ 136	**$ 30,149**	**$ 155,894**	**$ (658)**	**$ 185,521**
$ 13	$ 80	$ 158	$ (165)	$ 86
1	9,432	15,752	-	25,185
-	5	164	(77)	92
10	23	945	(416)	562
$ 24	**$ 9,540**	**$ 17,019**	**$ (658)**	**$ 25,925**
1	361	3,238	-	3,600
-	-	139	-	139
-	6,019	-	-	6,019
-	1,421	39,246	-	40,667
-	22	371,764	-	371,786
3	47	28,900	-	28,950
1	2,067	95	-	2,163
41	3,058	3,239	-	6,338
1	44	25,089	-	25,134
$ 71	**$ 22,579**	**$ 488,729**	**$ (658)**	**$ 510,721**
$ -	$ -	$ 14	$ -	$ 14
-	-	21,364	-	21,364
-	7,570	(15,350)	-	(7,780)
65	-	(338,863)	-	(338,798)
$ 65	**$ 7,570**	**$ (332,835)**	**$ -**	**$ (325,200)**
$ 136	**$ 30,149**	**$ 155,894**	**$ (658)**	**$ 185,521**

U.S. Department of Energy Consolidating Schedules of Net Cost

For the Years Ended September 30, 2017 and 2016

(See independent auditors' report)

($ IN MILLIONS)	FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
	FY 2017				
STRATEGIC GOALS:					
Science and Energy					
Program Costs	$ -	$ 3,743	$ 9,725	$ (2)	$ 13,466
Less: Earned Revenues	-	(4,548)	(1,299)	2	(5,845)
Net Cost of Transform Our Energy Systems	**$ -**	**$ (805)**	**$ 8,426**	**$ -**	**$ 7,621**
Nuclear Security					
Program Costs	$ -	$ -	$ 10,449	$ -	$ 10,449
Less: Earned Revenues	-	-	(43)	-	(43)
Net Cost of Science and Engineering Enterprise	**$ -**	**$ -**	**$ 10,406**	**$ -**	**$ 10,406**
Management and Performance					
Program Costs	$ -	$ -	$ 6,672	$ (563)	$ 6,109
Less: Earned Revenues	-	-	(693)	563	(130)
Net Cost of Secure Our Nation	**$ -**	**$ -**	**$ 5,979**	**$ -**	**$ 5,979**
Net Cost of Strategic Goals	**$ -**	**$ (805)**	**$ 24,811**	**$ -**	**$ 24,006**
OTHER PROGRAMS:					
Reimbursable Programs					
Program Costs	$ -	$ 196	$ 4,089	$ (7)	$ 4,278
Less: Earned Revenues	-	(150)	(3,966)	7	(4,109)
Net Cost of Reimbursable Programs	**$ -**	**$ 46**	**$ 123**	**$ -**	**$ 169**
Other Programs:					
Program Costs	$ 343	$ -	$ 439	$ (283)	$ 499
Less: Earned Revenues	(343)	-	(292)	283	(352)
Net Cost of Other Programs	**$ -**	**$ -**	**$ 147**	**$ -**	**$ 147**
Costs Applied to Reduction of Legacy Environmental Liabilities	-	(1)	(5,633)	-	(5,634)
Costs Not Assigned	-	-	22,829	-	22,829
Net Cost of Operations	**$ -**	**$ (760)**	**$ 42,277**	**$ -**	**$ 41,517**

FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
		FY 2016		
$ -	$ 3,679	$ 9,393	$ (98)	$ 12,974
-	(4,523)	(531)	98	(4,956)
$ -	**$ (844)**	**$ 8,862**	**$ -**	**$ 8,018**
$ -	$ -	$ 10,415	$ -	$ 10,415
-	-	(32)	-	(32)
$ -	**$ -**	**$ 10,383**	**$ -**	**$ 10,383**
$ -	$ -	$ 5,895	$ -	$ 5,895
-	-	(153)	-	(153)
$ -	**$ -**	**$ 5,742**	**$ -**	**$ 5,742**
$ -	**$ (844)**	**$ 24,987**	**$ -**	**$ 24,143**
$ -	$ 193	$ 4,044	$ (24)	$ 4,213
-	(117)	(3,920)	24	(4,013)
$ -	**$ 76**	**$ 124**	**$ -**	**$ 200**
$ 326	$ -	$ 451	$ (267)	$ 510
(326)	-	(282)	267	(341)
$ -	**$ -**	**$ 169**	**$ -**	**$ 169**
-	-	(5,564)	-	(5,564)
-	-	44,735	-	44,735
$ -	**$ (768)**	**$ 64,451**	**$ -**	**$ 63,683**

U.S. Department of Energy Consolidating Schedules of Changes in Net Position

For the Years Ended September 30, 2017 and 2016

(See independent auditors' report)

($ IN MILLIONS)	FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
	FY 2017				
CUMULATIVE RESULTS OF OPERATIONS:					
Beginning Balances	$ 65	$ 7,570	$ (354,213)	$ -	$ (346,578)
Budgetary Financing Sources:					
Appropriations Used	$ -	$ 4	$ 28,714	$ -	$ 28,718
Non-Exchange Revenue	-	-	14	-	14
Donations and Forfeitures of Cash	-	-	1	-	1
Transfers - In/(Out) Without Reimbursement	-	(427)	(3)	-	(430)
Other Budgetary Financing Sources	-	76	-	-	76
Other Financing Sources (Non-Exchange):					
Donations and Forfeitures of Cash	-	5	-	-	5
Transfers - In/(Out) Without Reimbursement	-	(159)	(2)	-	(161)
Imputed Financing from Costs Absorbed by Others	10	7	6,980	-	6,997
Other	(2)	(3)	(809)	-	(814)
Total Financing Sources	**$ 8**	**$ (497)**	**$ 34,895**	**$ -**	**$ 34,406**
Net Cost of Operations	-	760	(42,277)	-	(41,517)
Net Change	**$ 8**	**$ 263**	**$ (7,382)**	**$ -**	**$ (7,111)**
Total Cumulative Results of Operations	**$ 73**	**$ 7,833**	**$ (361,595)**	**$ -**	**$ (353,689)**
UNEXPENDED APPROPRIATIONS:					
Beginning Balances	$ -	$ -	$ 21,378	$ -	$ 21,378
Budgetary Financing Sources:					
Appropriations Received	$ -	$ 4	$ 30,316	$ -	$ 30,320
Appropriations Transferred - In/(Out)	-	-	(30)	-	(30)
Other Adjustments	-	-	(455)	-	(455)
Appropriations Used	-	(4)	(28,714)	-	(28,718)
Total Budgetary Financing Sources	**$ -**	**$ -**	**$ 1,117**	**$ -**	**$ 1,117**
Total Unexpended Appropriations	**$ -**	**$ -**	**$ 22,495**	**$ -**	**$ 22,495**
Net Position	**$ 73**	**$ 7,833**	**$ (339,100)**	**$ -**	**$ (331,194)**

FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
FY 2016				
$ 59	$ 7,248	$ (319,663)	$ -	$ (312,356)
$ -	$ 2	$ 27,593	$ -	$ 27,595
-	-	9	-	9
-	-	8	-	8
-	(381)	(4)	-	(385)
-	61	-	-	61
-	38	-	-	38
-	(144)	-	-	(144)
13	8	2,519	-	2,540
(7)	(30)	(224)	-	(261)
$ 6	**$ (446)**	**$ 29,901**	**$ -**	**$ 29,461**
-	768	(64,451)	-	(63,683)
$ 6	**$ 322**	**$ (34,550)**	**$ -**	**$ (34,222)**
$ 65	**$ 7,570**	**$ (354,213)**	**$ -**	**$ (346,578)**
$ -	$ -	$ 19,927	$ -	$ 19,927
$ -	$ 2	$ 29,058	$ -	$ 29,060
-	-	14	-	14
-	-	(28)	-	(28)
-	(2)	(27,593)	-	(27,595)
$ -	**$ -**	**$ 1,451**	**$ -**	**$ 1,451**
$ -	**$ -**	**$ 21,378**	**$ -**	**$ 21,378**
$ 65	**$ 7,570**	**$ (332,835)**	**$ -**	**$ (325,200)**

U.S. Department of Energy Combining Schedules of Budgetary Resources
For the Years Ended September 30, 2017 and 2016

(See independent auditors' report)

($ IN MILLIONS)	FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	COMBINED
	FY 2017			
BUDGETARY RESOURCES:				
Unobligated Balance Brought Forward, Oct 1	$ 22	$ 909	$ 8,485	$ 9,416
Recoveries of Prior Year Unpaid Obligations	4	2	1,623	1,629
Other Changes in Unobligated Balance (+ or -)	-	-	(1,510)	(1,510)
Unobligated Balance from Prior Year Budget Authority, Net	**$ 26**	**$ 911**	**$ 8,598**	**$ 9,535**
Appropriations	4	106	30,975	31,085
Borrowing Authority	-	250	106	356
Contract Authority	-	2,946	-	2,946
Spending Authority from Offsetting Collections	349	1,565	5,422	7,336
Total Budgetary Resources	**$ 379**	**$ 5,778**	**$ 45,101**	**$ 51,258**
STATUS OF BUDGETARY RESOURCES:				
New Obligations and Upward Adjustments (Total)	$ 347	$ 4,938	$ 36,889	$ 42,174
Unobligated Balance, End of Year:				
Apportioned, Unexpired Accounts	$ 29	$ 827	$ 6,818	$ 7,674
Exempt from Apportionment, Unexpired Accounts	-	13	9	22
Unapportioned, Unexpired Accounts	3	-	1,296	1,299
Unexpired, Unobligated Balance, End of Year	**$ 32**	**$ 840**	**$ 8,123**	**$ 8,995**
Expired, Unobligated Balance, End of Year	-	-	89	89
Unobligated Balance, End of Year (Total)	**$ 32**	**$ 840**	**$ 8,212**	**$ 9,084**
Total Budgetary Resources	**$ 379**	**$ 5,778**	**$ 45,101**	**$ 51,258**
CHANGE IN OBLIGATED BALANCE:				
Unpaid Obligations:				
Unpaid Obligations, Brought Forward, Oct 1	$ 59	$ 3,895	$ 27,004	$ 30,958
New Obligations and Upward Adjustments (Total)	347	4,938	36,889	42,174
Outlays (Gross) (-)	(333)	(4,881)	(34,660)	(39,874)
Recoveries of Prior Year Unpaid Obligations (-)	(4)	(2)	(1,623)	(1,629)
Unpaid Obligations, End of Year	**$ 69**	**$ 3,950**	**$ 27,610**	**$ 31,629**
Uncollected Payments:				
Uncollected Pymts, Fed Sources, Brought Forward, Oct 1 (-)	$ -	$ (380)	$ (3,941)	$ (4,321)
Change in Uncollected Pymts, Fed Sources (+ or -)	-	-	(122)	(122)
Uncollected Pymts, Fed Sources, End of Year (-)	**$ -**	**$ (380)**	**$ (4,063)**	**$ (4,443)**
Memorandum (non-add) Entries:				
Obligated Balance, Start of Year (+ or -)	**$ 59**	**$ 3,515**	**$ 23,063**	**$ 26,637**
Obligated Balance, End of Year (+ or -)	**$ 69**	**$ 3,570**	**$ 23,547**	**$ 27,186**
BUDGET AUTHORITY AND OUTLAYS, NET:				
Budget Authority, Gross	$ 353	$ 4,867	$ 36,503	$ 41,723
Actual Offsetting Collections (-)	(347)	(4,332)	(6,383)	(11,062)
Change in Uncollected Pymts, Fed Sources (+ or -)	-	-	(122)	(122)
Recoveries of Prior Year Paid Obligations	-	-	64	64
Budget Authority, Net (Total)	**$ 6**	**$ 535**	**$ 30,062**	**$ 30,603**
Outlays, Gross	$ 333	$ 4,881	$ 34,660	$ 39,874
Actual Offsetting Collections (-)	(347)	(4,332)	(6,383)	(11,062)
Outlays, Net (Total)	**$ (14)**	**$ 549**	**$ 28,277**	**$ 28,812**
Distributed Offsetting Receipts (-)	(60)	(770)	(3,210)	(4,040)
Agency Outlays, Net	**$ (74)**	**$ (221)**	**$ 25,067**	**$ 24,772**

FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	COMBINED
FY 2016			
$ 17	$ 900	$ 8,220	$ 9,137
11	-	758	769
-	-	(464)	(464)
$ 28	**$ 900**	**$ 8,514**	**$ 9,442**
4	105	29,706	29,815
-	429	100	529
-	2,650	-	2,650
319	1,822	5,175	7,316
$ 351	**$ 5,906**	**$ 43,495**	**$ 49,752**
$ 329	$ 4,997	$ 35,010	$ 40,336
$ 19	$ 895	$ 6,693	$ 7,607
-	13	13	26
3	1	1,704	1,708
$ 22	**$ 909**	**$ 8,410**	**$ 9,341**
-	-	75	75
$ 22	**$ 909**	**$ 8,485**	**$ 9,416**
$ 351	**$ 5,906**	**$ 43,495**	**$ 49,752**
57	$ 3,762	$ 27,150	$ 30,969
329	4,997	35,010	40,336
(316)	(4,864)	(34,398)	(39,578)
(11)	-	(758)	(769)
$ 59	**$ 3,895**	**$ 27,004**	**$ 30,958**
$ -	$ (375)	$ (3,878)	$ (4,253)
-	(5)	(63)	(68)
$ -	**$ (380)**	**$ (3,941)**	**$ (4,321)**
$ 57	**$ 3,387**	**$ 23,272**	**$ 26,716**
$ 59	**$ 3,515**	**$ 23,063**	**$ 26,637**
$ 323	$ 5,006	$ 34,981	$ 40,310
(320)	(4,195)	(5,911)	(10,426)
-	(5)	(63)	(68)
-	-	3	3
$ 3	**$ 806**	**$ 29,010**	**$ 29,819**
$ 316	$ 4,864	$ 34,398	$ 39,578
(320)	(4,195)	(5,911)	(10,426)
$ (4)	**$ 669**	**$ 28,487**	**$ 29,152**
(20)	(1,143)	(2,029)	(3,192)
$ (24)	**$ (474)**	**$ 26,458**	**$ 25,960**

U.S. Department of Energy Consolidating Schedules of Custodial Activities
For the Years Ended September 30, 2017 and 2016

(See independent auditors' report)

($ IN MILLIONS)	FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
%	FY 2017				
SOURCES OF COLLECTIONS:					
Cash Collections:					
Power Marketing Administrations	$ -	$ 690	$ -	$ -	$ 690
Federal Energy Regulatory Commission	80	-	-	-	80
Total Cash Collections	**$ 80**	**$ 690**	**$ -**	**$ -**	**$ 770**
Accrual Adjustment	68	-	-	-	68
Total Custodial Revenue	**$ 148**	**$ 690**	**$ -**	**$ -**	**$ 838**
DISPOSITION OF REVENUE:					
Transferred to Others:					
Bureau of Reclamation	$ (9)	$ (268)	$ -	$ -	$ (277)
Department of the Treasury	(58)	(218)	-	-	(276)
Army Corps of Engineers	(8)	(204)	-	-	(212)
Others	(5)	-	-	-	(5)
Decrease/(Increase) in Amounts to be Transferred	(68)	-	-	-	(68)
Net Custodial Activity	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

FEDERAL ENERGY REGULATORY COMMISSION	POWER MARKETING ADMINISTRATIONS	ALL OTHER DOE PROGRAMS	ELIMINATIONS	CONSOLIDATED
FY 2016				
$ -	$ 774	$ -	$ -	$ 774
25	-	-	-	25
$ 25	**$ 774**	**$ -**	**$ -**	**$ 799**
3	2	-	-	5
$ 28	**$ 776**	**$ -**	**$ -**	**$ 804**
$ (9)	$ (286)	$ -	$ -	$ (295)
(4)	(246)	-	-	(250)
(8)	(243)	-	-	(251)
(4)	-	-	-	(4)
(3)	(1)	-	-	(4)
$ -	**$ -**	**$ -**	**$ -**	**$ -**

Required Supplementary Stewardship Information (RSSI)

Supplementary Stewardship Reporting on Research and Development Costs for FY 2017 through 2013

UNAUDITED – See accompanying Auditors' Report.

($ IN MILLIONS)	Program Office	FY 2017			FY2016			FY2015			FY2014			FY2013		
		DIRECT & SUPPORT COSTS *	DEPREC-IATION & OTHER	TOTAL	DIRECT & SUPPORT COSTS *	DEPREC-IATION & OTHER	TOTAL	DIRECT & SUPPORT COSTS *	DEPREC-IATION & OTHER	TOTAL	DIRECT COST	DEPREC-IATION & OTHER	TOTAL	DIRECT COST	DEPREC-IATION & OTHER	TOTAL
BASIC	Efficiency and Renewable Energy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Fossil Energy	5	-	5	5	-	5	6	-	6	7	-	7	4	1	5
	National Nuclear Security Administration	113	3	116	105	3	108	89	3	92	48	1	49	45	3	48
	Nuclear Energy	13	-	13	37	-	37	34	-	34	-	-	-	-	-	-
	Electricity Delivery and Energy Reliability	5	-	5	4	-	4	6	-	6	3	-	3	4	-	4
	Science	4,311	458	4,769	4,364	463	4,827	4,361	445	4,806	3,969	434	4,403	3,941	561	4,502
	Bonneville Power Administration	1	-	1	4	-	4	4	-	4	5	-	5	9	-	9
TOTAL BASIC		**$ 4,448**	**$ 461**	**$ 4,909**	**$ 4,519**	**$ 466**	**$ 4,985**	**$ 4,500**	**$ 448**	**$ 4,948**	**$ 4,032**	**$ 435**	**$ 4,467**	**$ 4,003**	**$ 565**	**$ 4,568**
APPLIED	Advanced Research Projects Agency - Energy	$ 146	$ -	$ 146	$ 138	$ -	$ 138	$ 140	$ -	$ 140	$ 112	$ -	$ 112	$ 94	$ 1	$ 95
	Efficiency and Renewable Energy	686	14	700	496	11	507	481	10	491	437	7	444	365	46	411
	Environmental Management	8	-	8	5	-	5	4	-	4	4	-	4	4	-	4
	Fossil Energy	168	3	171	195	4	199	216	2	218	247	4	251	158	48	206
	National Nuclear Security Administration	3,169	70	3,239	3,855	61	3,916	2,679	71	2,750	1,871	95	1,966	1,898	139	2,037
	Nuclear Energy	652	20	672	663	19	682	621	22	643	292	6	298	258	40	298
	Electricity Delivery and Energy Reliability	61	-	61	58	-	58	59	-	59	45	-	45	42	5	47
	Science	72	-	72	70	-	70	61	-	61	56	-	56	46	1	47
	Bonneville Power Administration	4	-	4	2	-	2	2	-	2	2	-	2	5	-	5
TOTAL APPLIED		**$ 4,966**	**$ 107**	**$ 5,073**	**$ 5,482**	**$ 95**	**$ 5,577**	**$ 4,263**	**$ 105**	**$ 4,368**	**$ 3,066**	**$ 112**	**$ 3,178**	**$ 2,870**	**$ 280**	**$ 3,150**
DEVELOPMENT	Advanced Research Projects Agency - Energy	$ 119	$ -	$ 119	$ 102	$ -	$ 102	$ 103	$ -	$ 103	$ 83	$ -	$ 83	$ 77	$ 1	$ 78
	Efficiency and Renewable Energy	432	7	439	620	13	633	552	11	563	295	5	300	320	43	363
	Environmental Management	16	-	16	10	-	10	8	-	8	8	-	8	8	-	8
	Fossil Energy	282	4	286	327	6	333	363	3	366	414	7	421	197	60	257
	National Nuclear Security Administration	1,305	50	1,355	1,404	51	1,455	1,928	133	2,061	1,563	116	1,679	1,471	163	1,634
	Nuclear Energy	105	3	108	92	3	95	78	3	81	11	-	11	31	14	45
	Electricity Delivery and Energy Reliability	44	-	44	45	-	45	44	-	44	29	-	29	26	3	29
	Bonneville Power Administration	8	-	8	8	-	8	7	-	7	9	-	9	1	-	1
TOTAL DEVELOPMENT		**$ 2,311**	**$ 64**	**$ 2,375**	**$ 2,608**	**$ 73**	**$ 2,681**	**$ 3,083**	**$ 150**	**$ 3,233**	**$ 2,412**	**$ 128**	**$ 2,540**	**$ 2,131**	**$ 284**	**$ 2,415**
TOTAL R&D		**$ 11,725**	**$ 632**	**$ 12,357**	**$ 12,609**	**$ 634**	**$ 13,243**	**$ 11,846**	**$ 703**	**$ 12,549**	**$ 9,510**	**$ 675**	**$ 10,185**	**$ 9,004**	**$ 1,129**	**$ 10,133**

** FY 2017, FY 2016 and FY 2015 includes Program Direction, Safeguards & Security, and Infrastructure costs that support R&D activities.*

Investment in Research and Development

The Department's research and development programs are classified as Basic Research, Applied Research, and Development. Research and Development (R&D) program offices facilitate the creation, advancement, and deployment of new technologies and support the Department's mission to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. Investment in R&D includes support for crosscutting initiatives which are coordinated across the Department and seek to tap DOE's full capability to effectively and efficiently address the United States' energy, environmental, and national security challenges. (Examples of R&D investments are discussed in the section on "Strategic Plan and Program Performance.")

Goal 1: Science and Energy

(Basic, Applied, and Development)

The Office of Science (SC) is the Nation's largest Federal sponsor of basic research in the physical sciences and the lead Federal agency supporting fundamental scientific research for our Nation's energy future. SC supports research activities in the following areas: *Advanced Scientific Computing Research* supports research to discover, develop, and deploy computational and networking capabilities to analyze, model, simulate, and predict complex phenomena important to the United States; *Basic Energy Sciences* supports fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels to provide foundations for new energy technologies; *Biological and Environmental Research* supports fundamental research and scientific user facilities to achieve a predictive understanding of complex biological, earth, and environmental systems for energy infrastructure resilience and sustainability; *Fusion Energy Sciences* supports research to expand the fundamental understanding of matter at very high temperatures and densities, and to build the scientific foundation for fusion energy; *High Energy Physics* supports research to understand how the universe works at its most fundamental level by discovering the most elementary constituents of matter and energy, probing the interactions among them, and exploring the basic nature of space and time itself; *Nuclear Physics* supports experimental and theoretical research to discover, explore, and understand all forms of nuclear matter; and *Small Business Innovation Research/Technology Transfer* supports energy related technologies.

SC also supports the operation of national scientific user facilities that provide researchers with the most advanced tools of modern science including accelerators, colliders, supercomputers, light sources and neutron sources, as well as facilities for studying the nanoworld, the

environment, and the atmosphere. In Fiscal Year 2017 over 30,000 researchers from academia, industry, and government laboratories, spanning all fifty states and the District of Columbia, used these unique facilities to perform scientific research. These user facilities are operated on an open access, competitive merit review basis, enabling scientists from every state and of many disciplines from academia, national laboratories, and industry to utilize the facilities' unique capabilities and sophisticated instrumentation.

The Office of Energy Efficiency and Renewable Energy (EERE) invests in high-value research and development in clean energy technologies such as Renewable Energy, Energy Efficiency and Sustainable Transportation. Ongoing independent assessments continue to validate significant economic benefits generated by EERE early-stage research investments across all sectors of the U.S. economy. R&D Program activities include: Hydrogen & Fuel Cell Technologies, Biomass & Biorefinery Systems R&D, Solar Energy, Wind Energy, Geothermal Technologies, Water Power, Vehicle Technologies, Building Technologies, and Advanced Manufacturing.

As an example, the EERE's Building Technologies program connects basic and applied sciences by developing the next generation of highly efficient technologies and practices for both residential and commercial buildings through Emerging Technologies R&D activities. Similarly, the EERE Advanced Manufacturing program connects basic and applied sciences by bringing together industry, the national laboratories, and academia to: transition scientific innovations into manufacturing capabilities; develop cutting-edge foundational manufacturing technologies relevant to industry; advance broadly applicable manufacturing processes that use energy efficiently; and drive a corporate culture of continuous improvement to reduce energy use in the manufacturing sector. It also integrates national laboratory, university, and industry activities by competitively awarding cost-shared funding to collaborative research teams that rely on industry's active participation to ensure that the technologies meet real-world criteria, thus accelerating technology commercialization.

The Advanced Research Projects Agency-Energy (ARPA-E) is a catalyst for innovation. ARPA-E invests in high-potential, high-impact energy technologies that could radically transform the U.S. energy landscape and create new options for the nation's energy future. ARPA-E awardees are unique because they are creating entirely new ways to generate, store, and use energy. ARPA-E seeks multiple approaches to energy challenges and selects projects for both focused program areas and through open funding opportunities. The streamlined awards process allows for agility, focus, and impact. ARPA-E focuses only on innovative projects that can make a big impact over a finite period of time. Term-limited program directors and technology-to-market advisors provide projects with hands-on support to help them meet specific technical and market milestones. ARPA-E's goal is to develop a funded project to the point where private or public partners commit to advancing it to the next step.

The Office of Fossil Energy (FE) supports the President's "all of the above" energy strategy by investing in transformational research over an extensive range of clean and efficient technologies. Ensuring that we can continue to rely on clean, affordable energy from our Nation's abundant fossil fuel coal, oil and natural gas resources is the primary mission of FE research programs.

FE's Advanced Energy Systems (AES) Program is developing a new generation of clean coal-fueled energy conversion systems capable of producing competitively priced electric power. This research is targeted at improving overall system efficiency, increasing plant availability, reducing water consumption, achieving ultra-low emissions of traditional pollutants, reducing capital and operating costs, and enabling affordable carbon capture. The AES program includes R&D on gasification systems, advanced combustion systems, advanced turbines, and solid oxide fuel cells.

Additional FE innovation pathways aimed at producing clean fossil-fueled electricity at competitive prices and improving our Nation's infrastructure resiliency include advanced manufacturing and separations technology, advances in material science, big data capabilities, advances in sensor and control technology, process intensification, and finding new ways to utilize and monetize captured CO2. FE's goal is to facilitate the discovery and development of these new and innovative transformational technologies and enable them to both integrate effectively with the electric grid of the 21st century and fully participate in a clean energy economy.

The Office of Nuclear Energy (NE)'s primary mission is to advance nuclear power as a resource capable of making major contributions in meeting our nation's clean energy supply and energy security needs. By focusing on the development of advanced nuclear technologies, NE supports the Administration's goals of providing domestic sources of secure, clean energy and enhancing national security. Nuclear power remains an important part of our nation's clean energy portfolio.

The Office of Electricity Delivery and Energy Reliability (OE) drives electric grid modernization and resiliency in the energy infrastructure, and leads DOE's efforts to ensure a resilient, reliable, flexible, and secure electricity system. The R&D activities OE supports are intended to accelerate discovery and innovation in electric transmission and distribution technologies and create next generation devices, software, tools, and techniques to help modernize the Nation's electric grid. OE also advances technologies, tools, and techniques to reduce the risks to, and increase the reliability, resiliency, and security of, the Nation's critical energy infrastructure against the threats posed by natural and manmade events, including severe

weather, physical attacks, cyberattacks, and other emerging threats. Program activities include transmission reliability, resilient distribution systems, energy storage, cybersecurity for energy delivery systems, and transformer resilience. OE's R&D activities are planned and implemented in concert with partners from other Federal programs; electric utilities; equipment manufacturers; regional, state, and local agencies; national laboratories; and universities. Coordination is critical to focusing Federal efforts and ensuring that projects are properly aligned with public, private, local, and national needs.

The Bonneville Power Administration (BPA) Technology Innovation office (TI) manages BPA's strategic approach to R&D. Its annual portfolio includes projects for transmission, hydropower asset management, demand response, and energy efficiency.

Over the past 10 years this program has invested $70 million. Successful projects have returned $280 million in benefits to BPA. An example accomplishment includes the helical conductor shunt, an alternative to re-conductoring constrained transmission lines that minimizes major prolonged outages, enhances system flexibility, allows for increased power sales revenues, and improves return-on-investment of existing infrastructure while having no environmental impact. This project alone has resulted in $34 million in direct cost savings to date and more than $6 million in savings from avoided planned outages.

Goal 2: Nuclear Security

(Basic, Applied, and Development)

NNSA's science-based Stockpile Stewardship Program (SSP) was established to sustain the credibility of the nuclear deterrent without nuclear explosive testing. Through this program, NNSA has developed leading-edge expertise in advanced simulation and computing, hydrodynamic and subcritical experiments, high energy density physics, and materials and weapons effects science. These capabilities also support NNSA's two other vital missions, nuclear threat reduction and naval nuclear propulsion.

The NNSA Defense Nuclear Nonproliferation Research and Development (DNN R&D) program drives the innovation of unilateral and multi-lateral technical capabilities to strengthen U.S. capabilities to detect and characterize foreign nuclear programs; advance U.S. capabilities to strengthen nuclear security across the threat spectrum; and improve U.S. capabilities to detect and characterize nuclear explosions. To meet national and departmental nuclear security requirements, DNN R&D leverages the unique facilities and scientific skills of the Department of Energy, academia, and industry to perform research, including counterterrorism-related R&D, conduct technology demonstrations, develop prototypes, and produce and deliver sensors for integration into operational systems.

To sustain the ability to assess and certify the stockpile, NNSA will continue science-based stockpile stewardship by conducting experimental research and incorporating new knowledge into models and advanced computer codes. This strategy has allowed the stockpile to be assessed as safe, secure, reliable, and effective without underground nuclear explosive testing.

NNSA Defense Programs Research, Development, Testing, and Evaluation (DP RDT&E) program conducts activities using unique diagnostic tools, experimental platforms, and modeling and simulation capabilities. These efforts help prepare the Nation for a range of potential national security challenges by strengthening science, technology, and engineering capabilities, and providing a modernized, responsive infrastructure. Defense Programs provides the experimental and computational capability and infrastructure required to execute the Stockpile Stewardship and Management Plan and other DOE national security missions. By working at the leading edge of multiple scientific and technical disciplines, the Defense Programs nuclear security programs integrate scientific principles, address theory, field physical experiments, and conduct complex modeling and simulation to support the assessment and certification of the Nation's nuclear weapons. These endeavors bolster the capabilities of the U.S. government to address nuclear security threats through research and development, vulnerability analyses, and testing.

The NNSA Naval Reactors program's research and development efforts support new reactor plant development, new technologies for future fleet application, and continued, reliable operation of the nuclear fleet.

Goal 3: Management and Performance

(Applied)

The Office of Environmental Management maintains an Innovation and Technology Development program, which facilitates the use of innovative solutions and state-of-the-art technology to reduce the cleanup missions' costs, accelerate schedules, and mitigate vulnerabilities. The overall objectives of the Innovation and Technology Development program include enhancing worker, operational, and environmental safety; improving work performance, productivity, and quality; and reducing the government's environmental and financial liability created by defense nuclear weapons development and production. The infusion of new technology and innovative solutions are necessary to fill science and technology-rooted mission gaps and to improve or optimize baseline technologies in all nuclear cleanup mission segments: radioactively contaminated soil and water remediation; nuclear facility decommissioning; radioactive liquid underground waste tank closure; radioactive solid waste (including

transuranic waste) treatment, storage, and disposal; radioactive liquid waste processing and disposition; and spent nuclear fuel and special nuclear materials interim storage and disposition.

EM's Innovation and Technology Development program addresses the need for near-term innovations, mission-enabling technologies, and grand challenges. Near-term innovations represent new technologies and innovative solutions that are needed to address current operational challenges, including emergency response and preparedness. Mission enablers represent new and novel technologies and innovative solutions that allow EM to execute its mission activities safer and smarter. Grand challenges represent mission gaps and uncertainties that have site-wide or program-wide implications, broad applications, and the potential for dramatic reduction to lifecycle costs and schedules, as well as mission liabilities.

EM also collaborates and partners with other departments and independent agencies to facilitate the transfer of federally -funded technologies and to leverage highly specialized expertise, government assets and facilities, and publically-funded programs. Access to non-DOE national laboratories and technology centers, non-DOE federally funded research and development centers, non-DOE testing facilities and proving grounds, and university affiliated research centers greatly increases opportunities for cleanup innovation and enhances DOE's cleanup capabilities.

Required Supplementary Information (RSI)

UNAUDITED – See accompanying Auditors' Report

This section of the report provides required supplementary information for the Department on deferred maintenance and budgetary resources by major budget account.

Deferred Maintenance

Deferred maintenance and repairs information is a requirement under Statements of Federal Financial Accounting Standards (SFFAS) No. 42, Deferred Maintenance and Repairs (DM&R), which requires deferred maintenance disclosures as of the end of each fiscal year. Deferred maintenance is defined in SFFAS No. 42 as "maintenance and repairs that were not performed when they should have been or were scheduled to be and which are put off or delayed for a future period." DM&R reporting enables the Government to be accountable to citizens for the proper administration and stewardship of its assets. Specifically, DM&R reporting assists users by providing an entity's realistic estimate of DM&R amounts and the effectiveness of asset maintenance practices the entities employ in fulfilling their missions.

Estimates were developed for:

($ in Millions)	
Buildings and Other Structures and Facilities	$6,589
Capital Equipment	246
Total	$6,835

Deferred Maintenance and Repairs - Buildings and Other Structures and Facilities

The Department of Energy has custody of nearly 22 thousand real property assets with an estimated 133 million gross square feet of building area, buildings, real property trailers and structures with a $148 billion replacement value, and a total of 2.76 million acres of land in 41 different states. The Department's portfolio of property, plant and equipment (PP&E) supports preeminent federal research laboratory campuses; user facilities; production, special purpose, and legacy clean-up activities; and facilities used predominantly for office space and warehousing. It is Departmental policy to maintain real property assets in a manner that promotes operational safety, worker health, environmental protection and compliance, property preservation, and cost-effectiveness while meeting the program missions. Estimates reported herein include deferred maintenance and repairs for capitalized or not capitalized and fully depreciated and not fully depreciated buildings, structures, and heritage assets owned by the Department. The Department does not accrue DM&R on general or stewardship land parcels.

Pursuant to the cost/benefit considerations provided in SFFAS No. 6, the Department has determined that the requirements for DM&R reporting on personal property (capital equipment) are not applicable to assets with an acquisition cost of less than $100,000, except in situations where maintenance is needed to address worker and public health and safety concerns.

Defining and Implementing M&R Policies in Practice

The Department visually assesses the condition of each building and structure at least once every five years or other risk-based interval as approved by the cognizant Program Secretarial Officer to identify all deficiencies, except for some structures where a physical barrier prevents visual assessments (e.g., underground pipe systems). In such cases, sites may employ other methods to identify deficiencies. The requirements to conduct a condition assessment on each asset at least once within a five-year period applies to both active and inactive and excess assets; however, Department guidance gives its component programs and sites the flexibility to apply industry standard methods commensurate with each asset's status, usage, and hazards; or more thorough procedures when mandated by Federal, state, or local codes. Inactive assets must remain in a state safe enough to allow such inspections to occur, to protect life safety and the environment, to support eventual disposition, and so as not to endanger the mission responsibilities borne by other assets.

The recordation of deficiencies as DM&R depends on programmatic and site policies. Sites estimate the cost to address DM&R deficiencies using unit construction, maintenance and repair cost data available from R. S. Means ("CostWorks"), or other providers of unit cost data. For the time period between updates, sites apply inflators derived from annual budget preparation guidance published by the Department's Chief Financial Officer to DM&R estimates to approximate current dollars. Sites remove that item and its estimated cost from their backlog after resolving a deferred maintenance item or when management determines the repair is no longer needed.

Ranking and Prioritizing M&R Activities

The Department does not rank or prioritize maintenance and repair activities for its component programs and sites. Instead, it relies on the prudent site manager to apply his or her maintenance budget based on the role each asset has in supporting his or her site's various missions. Ranking factors may include mission dependency, status, use, ownership, and risks presented by any noted deficiencies among potentially other considerations.

Factors Considered in Setting Acceptable Condition

The DOE Asset Management Plan identifies Asset Condition Index (ACI) as a real property portfolio

performance measure. ACI equals one less the sum of the DM&R of a portfolio of assets divided (normalized) by the replacement value of that same portfolio of assets. Internal reporting guidance assigns qualitative labels to ACI ranges and considers assets with an ACI equal to or greater than 0.95 in at least adequate condition. For this purpose, the Department equates the terms "adequate" and "acceptable". As of September 25, 2017, the percentage of active buildings in a condition at or above "acceptable" based on ACI is approximately 61 percent.

Significant Changes from Prior Year and Related Events

As of September 25, 2017, an amount of $6,112 million of deferred maintenance and repair was estimated to be required to return active real property assets to acceptable operating condition. This is an overall increase of $602 million from FY 2016.

The Department adopted a year-to-year variance threshold of ten percent and considers a greater increase or decrease as significant. With the exception of Active Structures and Inactive & Excess Heritage Assets, the Department recorded significant increases in estimated DM&R estimates for all asset categories and classes. Changes result from several sources. First, the Department completed efforts to reduce the quantity of inactive & excess assets awaiting the excess screening process. All assets are now categorized as either Active or Inactive & Excess. Previously uncategorized estimates for DM&R of assets inactive but not yet screened for excess were categorized and the associated DM&R is accounted for in the report totals. The DM&R for a comparable set of assets in FY 2016 was estimated at $6.5 billion. Second, in contrast to the FY 2016 report the FY 2017 DM&R estimate includes categories for both Inactive & Excess Stewardship Land and Inactive & Excess Heritage Assets. The report displays both FY 2017 beginning balance of $8 million and the ending DM&R balance for Inactive & Excess Heritage Assets. Next, the Department continued initiatives to strengthen cost estimating procedures and to review categorization of deficiencies as DM&R considering factors such as operational status, mission dependency, and acceptability to management revising estimates when appropriate. Lastly, during FY 2016 and FY 2017 the Department conducted condition inspections of over 7 million square feet of building area and structures previously leased to the United States Enrichment Corporation, a subsidiary of Centrus Energy Corp. (formerly USEC Inc.), under The Energy Policy Act of 1992, and estimated the DM&R for these assets at over $550 million, accounting for 80% of the Department's total FY 2017 increase.

Capital Equipment

Pursuant to the cost/benefit considerations provided in SFFAS No. 6 and SFFAS No. 42, the Department has determined that the requirements for deferred maintenance reporting on personal property (capital equipment) are not applicable to property items with an acquisition cost of less than $100,000, except in situations where maintenance is needed to address worker and public health and safety concerns.

Various methods were used for measuring deferred maintenance and determining acceptable operating condition for the Department's capital equipment including periodic condition assessments, physical inspections, review of work orders, manufacturer and engineering specification, and other methods, as appropriate.

An amount of $246 million of deferred maintenance was estimated to be needed as of September 30, 2017, to return capital equipment assets to acceptable operating condition.

Deferred Maintenance and Repair Costs

Estimates of the beginning and ending balances of DM&R for each major category of real property for which maintenance and repairs have been deferred include:

($ IN MILLIONS)	2017 Ending Balance DM&R	2017 Beginning Balance DM&R
ACTIVE:		
General PP&E:		
Buildings & Trailers	$ 4,109	$ 3,517
Structures	1,997	1,991
Subtotal - General PP&E Active	**$ 6,106**	**$ 5,508**
Heritage Assets	$ 6	$ 2
Subtotal - All Active	**$ 6,112**	**$ 5,510**
INACTIVE AND EXCESS:		
General PP&E:		
Buildings & Trailers	$ 397	$ 321
Structures	72	65
Subtotal - General PP&E Inactive and Excess	**$ 469**	**$ 386**
Heritage Assets	**$ 8**	**$ 8**
Subtotal - All Inactive and Excess	**$ 477**	**$ 394**
Total Deferred Maintenance and Repair Cost	**$ 6,589**	**$ 5,904**

Budgetary Resources by Major Account
For Year Ended September 30, 2017

	Weapons Activities 019 05 0240	Science 019 20 0222	Defense Environmental Cleanup 019 10 0251	Advanced Technology Vehicles Manufacturing Loan Program Account 019 20 0322	Bonneville Power Administration Fund 019 50 4045
BUDGETARY RESOURCES:					
Unobligated Balance Brought Forward, Oct 1	$ 243	$ 12	$ 20	$ 4,295	$ 13
Recoveries of Prior Year Unpaid Obligations	100	44	15	44	-
Other Changes in Unobligated Balance (+ or -)	-	2	63	-	-
Budget Authority, Gross	10,978	6,034	5,967	4	3,973
Total Budgetary Resources	$ 11,321	$ 6,092	$ 6,065	$ 4,343	$ 3,986
STATUS OF BUDGETARY RESOURCES:					
New Obligations and Upward Adjustments	$ 11,201	$ 6,072	$ 6,025	$ 6	$ 3,973
Unobligated Balances Available	119	19	36	4,337	13
Unobligated Balances not Available	1	1	4	-	-
Total Budgetary Resources	$ 11,321	$ 6,092	$ 6,065	$ 4,343	$ 3,986
CHANGE IN OBLIGATED BALANCE:					
Obligated Balance, Start of Year (+ or -)	$ 4,712	$ 4,326	$ 2,146	$ 46	$ 3,112
New Obligations and Upward Adjustments	11,201	6,072	6,025	6	3,973
Outlays (Gross) (-)	(10,251)	(5,678)	(5,936)	(6)	(3,908)
Recoveries of Prior Year Unpaid Obligations (-)	(100)	(44)	(15)	(44)	-
Change in Uncollected Pymts, Fed Sources (+ or -)	(87)	(37)	-	-	(17)
Obligated Balance, End of Year (+ or -)	$ 5,475	$ 4,639	$ 2,220	$ 2	$ 3,160
Agency Outlays, Net	$ 8,601	$ 5,161	$ 5,873	$ 6	$ 382

	Energy Efficiency and Renewable Energy 019 20 0321	Other Defense Activities 019 10 0243	Defense Nuclear Nonproliferation 019 05 0309	Naval Reactors 019 05 0314	Other Budgetary Accounts
BUDGETARY RESOURCES:					
Unobligated Balance Brought Forward, Oct 1	$ 776	$ 36	$ 37	$ 8	$ 2,559
Recoveries of Prior Year Unpaid Obligations	124	27	87	-	129
Other Changes in Unobligated Balance (+ or -)	(46)	(5)	-	-	(5)
Budget Authority, Gross	2,116	2,338	1,873	1,344	6,215
Total Budgetary Resources	$ 2,970	$ 2,396	$ 1,997	$ 1,352	$ 8,898
STATUS OF BUDGETARY RESOURCES:					
New Obligations and Upward Adjustments	$ 2,393	$ 2,359	$ 1,932	$ 1,348	$ 6,312
Unobligated Balances Available	572	32	65	3	2,487
Unobligated Balances not Available	5	5	-	1	99
Total Budgetary Resources	$ 2,970	$ 2,396	$ 1,997	$ 1,352	$ 8,898
CHANGE IN OBLIGATED BALANCE:					
Obligated Balance, Start of Year (+ or -)	$ 2,190	$ 257	$ 1,570	$ 547	$ 3,715
New Obligations and Upward Adjustments	2,393	2,359	1,932	1,348	6,312
Outlays (Gross) (-)	(1,925)	(2,221)	(1,889)	(1,267)	(5,954)
Recoveries of Prior Year Unpaid Obligations (-)	(124)	(27)	(87)	-	(129)
Change in Uncollected Pymts, Fed Sources (+ or -)	26	(52)	-	-	(1)
Obligated Balance, End of Year (+ or -)	$ 2,560	$ 316	$ 1,526	$ 628	$ 3,943
Agency Outlays, Net	$ 1,775	$ 718	$ 1,888	$ 1,267	$ 140

	Subtotal of Budgetary Accounts	Title 17 Innovative Technology Direct Loan Financing Account 019 20 4455	Title 17 Innovative Loan Guaranteed Loan Financing Account 019 20 4577	Advanced Technology Vehicles Manufacturing Direct Loan Financing Account 019 20 4579	Combined Statement of Budgetary Resources Total
BUDGETARY RESOURCES:					
Unobligated Balance Brought Forward, Oct 1	$ 7,999	$ 1,086	$ 167	$ 164	$ 9,416
Recoveries of Prior Year Unpaid Obligations	570	19	-	1,040	1,629
Other Changes in Unobligated Balance (+ or -)	9	(378)	-	(1,141)	(1,510)
Budget Authority, Gross	40,842	728	4	149	41,723
Total Budgetary Resources	$ 49,420	$ 1,455	$ 171	$ 212	$ 51,258
STATUS OF BUDGETARY RESOURCES:					
New Obligations and Upward Adjustments	$ 41,621	$ 421	$ 20	$ 112	$ 42,174
Unobligated Balances Available	7,683	-	13	-	7,696
Unobligated Balances not Available	116	1,034	138	100	1,388
Total Budgetary Resources	$ 49,420	$ 1,455	$ 171	$ 212	$ 51,258
CHANGE IN OBLIGATED BALANCE:					
Obligated Balance, Start of Year (+ or -)	$ 22,621	$ 3,029	$ (10)	$ 997	$ 26,637
New Obligations and Upward Adjustments	41,621	421	20	112	42,174
Outlays (Gross) (-)	(39,035)	(708)	(19)	(112)	(39,874)
Recoveries of Prior Year Unpaid Obligations (-)	(570)	(19)	-	(1,040)	(1,629)
Change in Uncollected Pymts, Fed Sources (+ or -)	(168)	3	-	43	(122)
Obligated Balance, End of Year (+ or -)	$ 24,469	$ 2,726	$ (9)	$ -	$ 27,186
Agency Outlays, Net	$ 25,811	$ (21)	$ 16	$ (1,034)	$ 24,772

Auditors' Report

Memorandum from the Inspector General

DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL

MEMORANDUM

DATE: May 21, 2018

REPLY TO ATTN OF: IG-302 (A17FN004)

SUBJECT: Audit Report on "The Department of Energy's Fiscal Year 2017 Consolidated Financial Statements"

TO: Chief Financial Officer, CF-1

The attached report presents the results of the independent certified public accountants' audit of the Department of Energy's consolidated financial statements as of September 30, 2017, and 2016, and the related consolidated statements of net costs, changes in net position, custodial activity, and combined statements of budgetary resources for the years then ended.

The Office of Inspector General engaged the independent public accounting firm of KPMG LLP to conduct the audit, subject to our review. KPMG LLP is responsible for expressing an opinion on the Department's financial statements and reporting on applicable internal controls and compliance with laws and regulations. The Office of Inspector General monitored audit progress and reviewed the audit report and related documentation. This review disclosed no instances where KPMG LLP did not comply, in all material respects, with generally accepted Government auditing standards. The Office of Inspector General did not express an independent opinion on the Department's financial statements.

KPMG LLP audited the consolidated financial statements of the Department as of September 30, 2017, and 2016, and the related consolidated statements of net cost, changes in net position, custodial activity, and combined statement of budgetary resources for the years then ended. KPMG LLP concluded that these consolidated financial statements are presented fairly, in all material respects, in conformity with United States generally accepted accounting principles and has issued an unmodified opinion based on its audits and the reports of other auditors for the years ended September 30, 2017, and 2016.

As part of this audit, auditors also considered the Department's internal controls over financial reporting and tested for compliance with certain provisions of laws, regulations, contracts, and grant agreements that could have a direct and material effect on the consolidated financial statements. The audit revealed a certain deficiency in internal controls related to the accounting of environmental liabilities. The following significant deficiency in the Department's system of internal controls is not considered a material weakness:

> **Accounting for Environmental Liabilities:** The Department has not implemented effective internal controls over identifying and recording environmental liabilities accurately, completely, and in a timely manner. Misstatements were identified that resulted from management basing estimates on assumptions that were incorrect and inadequate field office management reviews of cost estimates, including contingency estimates. Most of the errors

resulted from control deficiencies at field offices. However, one Headquarters estimate was based on information that was outdated, due to insufficient coordination and inconsistency of assumptions between the Office of Standard Contracts Management and the Office of Environmental Management. The control deficiencies resulted in current year misstatements of environmental liabilities and errors in the opening balance, caused by recording adjustments to the liability in the improper accounting period, that were corrected as of September 30, 2017. The current year adjustments to the overall environmental liabilities aggregated to approximately $2 billion (absolute value basis).

The audit also identified one potential instance of non-compliance that is required to be reported under applicable audit standards and requirements. The Department is reviewing a potential *Anti-Deficiency Act* violation from the over-obligation of approximately $16 million related to the apportionment of funding for a specific Departmental program. A final determination has not yet been made, and therefore, the outcome of the matter is not presently known. The Office of Inspector General recently issued a report, *Inquiry into an Alleged Anti-Deficiency Act Violation at the Department of Energy* (DOE-OIG-18-29), on the allegations related to this matter, which ultimately resulted in delaying the issuance of *The Department of Energy's Fiscal Year 2017 Consolidated Financial Statements*.

The Office of Inspector General issued numerous notices of findings and recommendations to management during the course of the audit. In nearly all instances, management concurred with the findings and recommendations. However, responses to three non-information technology-related findings indicated two non-concurrences and one partial concurrence. All findings will be detailed in management letters and a management decision will be requested, as appropriate.

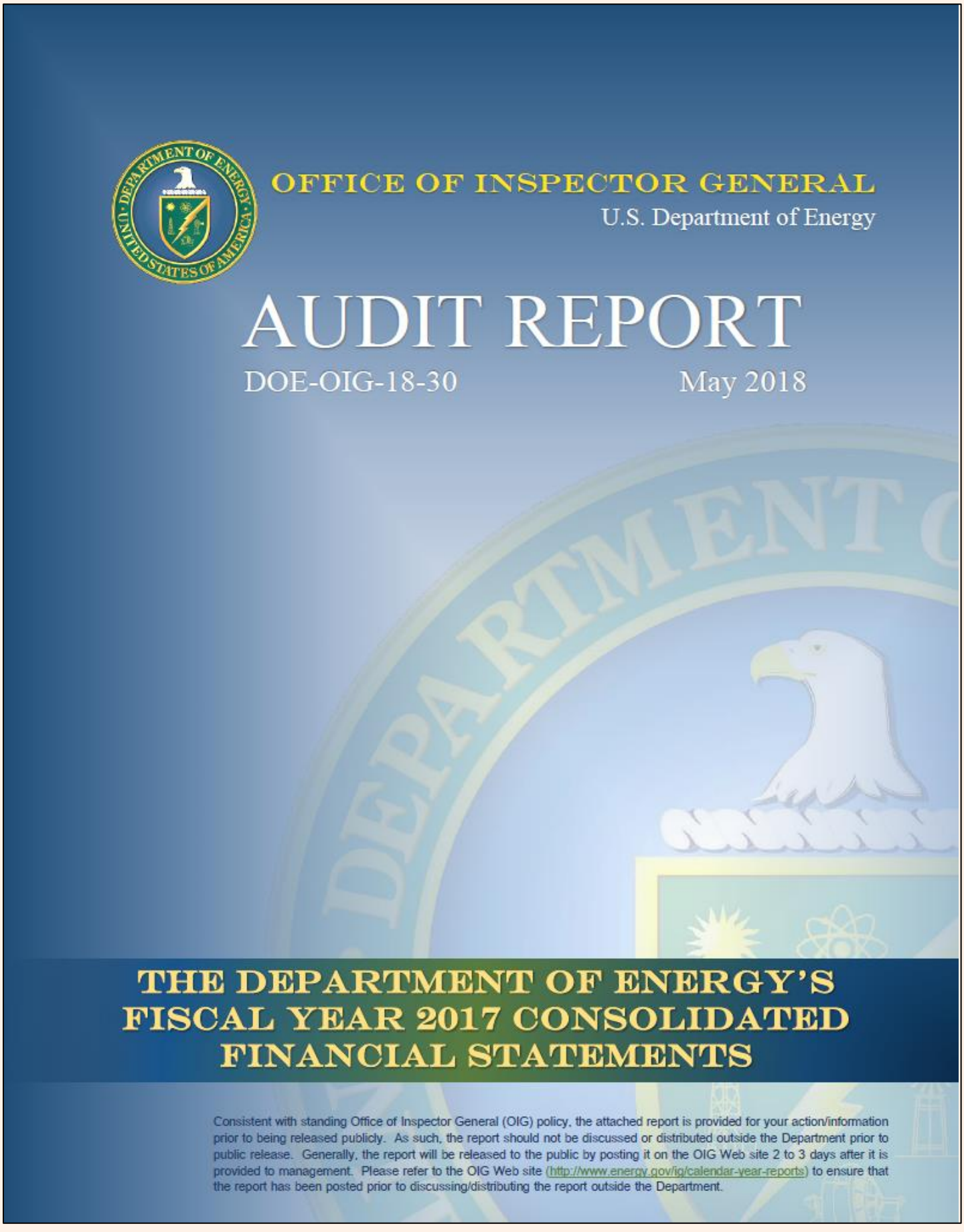
We appreciate the cooperation of your staff during the audit.

Sarah B. Nelson
Assistant Inspector General
for Audits and Administration
Office of Inspector General

Attachment

cc: Deputy Chief Financial Officer, CF-2
Director, Office of Finance and Accounting, CF-10
Deputy Director, Office of Finance and Accounting, CF-10
Assistant Director, Office of Financial Policy and Internal Controls, CF-12
Division Director, Office of Financial Policy and Internal Controls, CF-12
Audit Resolution Specialist, Office of Financial Policy and Internal Controls, CF-12

Independent Auditors' Report



Department of Energy
Washington, DC 20585

May 21, 2018

MEMORANDUM FOR THE SECRETARY

April G. Stephenson

FROM: April G. Stephenson
Principal Deputy Inspector General

SUBJECT: INFORMATION: Audit Report on "The Department of Energy's Fiscal Year 2017 Consolidated Financial Statements"

Pursuant to requirements established by the *Government Management Reform Act of 1994*, the Office of Inspector General engaged the independent public accounting firm of KPMG LLP (KPMG) to perform the audit of the Department of Energy's Fiscal Year 2017 Consolidated Financial Statements.

KPMG audited the consolidated financial statements of the Department as of September 30, 2017, and 2016, and the related consolidated statements of net cost, changes in net position, custodial activity, and combined statement of budgetary resources for the years then ended. KPMG concluded that these consolidated financial statements are presented fairly, in all material respects, in conformity with United States generally accepted accounting principles and has issued an unmodified opinion based on its audits and the reports of other auditors for the years ended September 30, 2017, and 2016.

As part of this audit, auditors also considered the Department's internal controls over financial reporting and tested for compliance with certain provisions of laws, regulations, contracts, and grant agreements that could have a direct and material effect on the consolidated financial statements. The audit revealed a certain deficiency in internal controls related to the accounting of environmental liabilities. The following significant deficiency in the Department's system of internal controls is not considered a material weakness:

Accounting for Environmental Liabilities: The Department had not implemented effective internal controls over identifying and recording environmental liabilities accurately, completely, and in a timely manner. Misstatements were identified that resulted from management basing estimates on assumptions that were incorrect and inadequate field office management reviews of cost estimates, including contingency estimates. Most of the errors described above resulted from control deficiencies at field offices. However, one Headquarters estimate was based on information that was outdated, due to insufficient coordination and inconsistency of assumptions between the Office of Standard Contracts Management and the Office of Environmental Management. The control deficiencies resulted in current year misstatements of environmental liabilities and errors in the opening

balance, caused by recording adjustments to the liability in the improper accounting period, that were corrected as of September 30, 2017. The current year adjustments to the overall environmental liabilities aggregated to approximately $2 billion (absolute value basis).

The audit also identified one potential instance of non-compliance that is required to be reported under applicable audit standards and requirements. The Department is reviewing a potential *Anti-Deficiency Act* violation from the over-obligation of approximately $16 million related to the apportionment of funding for a specific Departmental program. A final determination has not yet been made, and therefore, the outcome of the matter is not presently known. The Office of Inspector General recently issued a report, *Inquiry into an Alleged Anti-Deficiency Act Violation at the Department of Energy* (DOE-OIG-18-29), on the allegations related to this matter, which ultimately resulted in delaying the issuance of *The Department of Energy's Fiscal Year 2017 Consolidated Financial Statements*.

The Office of Inspector General issued numerous notices of findings and recommendations to management during the course of the audit. In nearly all instances, management concurred with the findings and recommendations. However, responses to three non-information technology-related findings indicated two non-concurrences and one partial concurrence. All findings will be detailed in management letters and a management decision will be requested, as appropriate.

KPMG is responsible for the attached auditors' report and the opinions and conclusions expressed therein. The Office of Inspector General is responsible for technical and administrative oversight regarding KPMG's performance under the terms of the contract. Our review was not intended to enable us to express, and accordingly we do not express, an opinion on the Department's financial statements, management's assertions about the effectiveness of its internal controls over financial reporting, or the Department's compliance with laws and regulations. Our monitoring review disclosed no instances where KPMG did not comply with applicable auditing standards.

I would like to thank all participating Department elements for their courtesy and cooperation during the review.

Attachment

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

Report Number: DOE-IG-18-30

Department financial reports are available for download on the Office of the Chief Financial Officer Web site: http://www.energy.gov//cfo/reports/agency-financial-reports

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Attachment

INDEPENDENT AUDITORS' REPORT

KPMG LLP
Suite 12000
1801 K Street, NW
Washington, DC 20006

Attachment

Independent Auditors' Report

The Principal Deputy Inspector General, United States Department of Energy and
The Secretary, United States Department of Energy:

Report on the Financial Statements

We have audited the accompanying consolidated financial statements of the United States (U.S.) Department Energy (Department), which comprise the consolidated balance sheets as of September 30, 2017 and 2016, and the related consolidated statements of net cost, changes in net position, and custodial activity, and combined statements of budgetary resources for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America, in accordance with the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, and in accordance with Office of Management and Budget (OMB) Bulletin Number (No.) 17-03, *Audit Requirements for Federal Financial Statements*. Those standards and OMB Bulletin No. 17-03 require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion on the Financial Statements

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the U.S. Department of Energy as of September 30, 2017 and 2016, and its net costs, changes in net position, budgetary resources, and custodial activity for the years then ended in accordance with U.S. generally accepted accounting principles.

Attachment

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Emphasis of Matters

As discussed in Note 7 to the consolidated financial statements, the Department has total direct loans and loan guarantees, net, of $16 billion and $17 billion as of September 30, 2017 and 2016, respectively, which are issued under the *Federal Credit Reform Act of 1990*. Subsidy costs of the direct loans and loan guarantees are intended to estimate the long-term cost to the U.S. Government of its loan program and include interest rate differentials, delinquencies, defaults, fees, and other cash flow items. A subsidy re-estimate is performed annually at September 30. Any adjustment resulting from the re-estimate is recognized as subsidy expense. Our opinion is not modified with respect to this matter.

As discussed in Note 15 to the consolidated financial statements, the cost estimates supporting the Department's environmental cleanup and disposal liabilities of $384 billion and $372 billion as of September 30, 2017 and 2016, respectively, are based upon assumptions regarding funding and other future action and decisions, many of which are beyond the Department's control. Our opinion is not modified with respect to this matter.

As discussed in Note 16 to the consolidated financial statements, the Department is involved as a defendant in several matters of litigation relating to its inability to accept commercial spent nuclear fuel by January 31, 1998, the date specified in the Nuclear Waste Policy Act of 1982, as amended. The Department has recorded liabilities for likely damages of $27 billion and $25 billion as of September 30, 2017 and 2016, respectively. Our opinion is not modified with respect to this matter.

Other Matters

Interactive Data

Management has elected to reference to information on websites or other forms of interactive data outside the Agency Financial Report to provide additional information for the users of its financial statements. Such information is not a required part of the basic consolidated financial statements or supplementary information required by the Federal Accounting Standards Advisory Board. The information on these websites or the other interactive data has not been subjected to any of our auditing procedures, and accordingly we do not express an opinion or provide any assurance on it.

Required Supplementary Information

U.S. generally accepted accounting principles require that the information in the Management's Discussion and Analysis, Required Supplementary Information, and Required Supplementary Stewardship Information sections be presented to supplement the basic consolidated financial statements. Such information, although not a part of the basic consolidated financial statements, is required by the Federal Accounting Standards Advisory Board who considers it to be an essential part of financial reporting for placing the basic consolidated financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic consolidated financial statements, and other knowledge we obtained during our audits of the basic consolidated financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary and Other Information

Our audits were conducted for the purpose of forming an opinion on the basic consolidated financial statements as a whole. The consolidating information in the Consolidating Schedules section and Other Information section of the Department's Fiscal Year 2017 Agency Financial Report are presented for purposes of additional analysis and are not a required part of the basic consolidated financial statements.

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The consolidating information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic consolidated financial statements. Such information has been subjected to the auditing procedures applied in the audits of the basic consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic consolidated financial statements or to the basic consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the consolidating information is fairly stated in all material respects in relation to the basic consolidated financial statements as a whole.

The information in the Other Information section of the Department's Fiscal Year 2017 Agency Financial Report has not been subjected to the auditing procedures applied in the audits of the basic consolidated financial statements, and accordingly, we do not express an opinion or provide an assurance on it.

Other Reporting Required by *Government Auditing Standards*

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements as of and for the year ended September 30, 2017, we considered the Department's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Department's internal control. Accordingly, we do not express an opinion on the effectiveness of the Department's internal control. We did not test all internal controls relevant to operating objectives as broadly defined by the *Federal Managers' Financial Integrity Act of 1982*.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that have not been identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify certain deficiencies in internal control, described below and in more detail in Exhibit I, that we consider to be a significant deficiency.

- **Accounting for Environmental Liabilities**. We identified deficiencies in the Department's internal controls over identifying and recording environmental liabilities accurately, completely, and timely.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Department's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* or OMB Bulletin No. 17-03.

We also performed tests of its compliance with certain provisions referred to in Section 803(a) of the *Federal Financial Management Improvement Act of 1996* (FFMIA). Providing an opinion on compliance with FFMIA was

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Attachment

not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances in which the Department's financial management systems did not substantially comply with the (1) Federal financial management systems requirements, (2) applicable Federal accounting standards, and (3) the United States Government Standard General Ledger at the transaction level.

- **Potential Instance of Noncompliance**. The Department is reviewing a potential Anti-Deficiency Act violation from the over-obligation of approximately $16 million related to the apportionment of funding for a specific Departmental program. A final determination has not yet been made, and therefore, the outcome of the matter is not presently known.

The Department's Response to Findings

The Department's response to the findings identified in our audit is described in Exhibit I. The Department's response was not subjected to the auditing procedures applied in the audit of the consolidated financial statements and, accordingly, we express no opinion on the response.

***Purpose of the Other Reporting Required by* Government Auditing Standards**

The purpose of the communication described in the Other Reporting Required by *Government Auditing Standards* section is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the Department's internal control or compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

Washington, D.C.
May 17, 2018

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Attachment

Exhibit I – Significant Deficiency

Accounting for Environmental Liabilities

The United States (U.S.) Government Accountability Office's *Standards for Internal Control in the Federal Government* (Green Book) Section 2 – *Establishing an Effective Internal Control System OV2.01*, defines the standards for internal control in the Federal government states:

- *Principle 10.1* – "Management should design control activities to achieve objectives."
- *Principle 12.01* – "Management should implement control activities through policies."
- *Principal 14.01* – "Management should internally communicate the necessary quality information to achieve the entity's objectives."

The U.S. Department of Energy (Department) has not implemented effective internal controls over identifying and recording environmental liabilities accurately, completely, and timely. We identified misstatements that resulted from management basing estimates on assumptions that were incorrect, and inadequate field office management reviews of cost estimates, including contingency estimates. The control deficiencies resulted in current year misstatements of environmental liabilities and errors in the opening balance, caused by recording adjustments to the liability in the improper accounting period, that were corrected as of September 30, 2017. The current year adjustments to the overall environmental liabilities aggregated to approximately $2 billion (absolute value basis).

The Office of Environmental Management (EM) and the various field offices are responsible for reviewing the field office environmental liability estimates and ensuring the timely and accurate recording of the EM liability in the Department's consolidated financial statements. In addition to environmental liabilities that originate from the field offices, certain liabilities are accounted for at the headquarters level. Most of the errors described above resulted from control deficiencies at field offices. However, one headquarters estimate was based on information that was outdated, due to insufficient coordination and inconsistency of assumptions between the Office of Standard Contracts Management (OSCM) and EM.

Recommendations:

We recommend that EM issue guidance and provide training to field offices regarding management reviews of estimates and recording adjustments to the EM liability in the proper period. The guidance and training should focus particular attention on ensuring that new cost estimates are evaluated in time for adjustment of the liability during or prior to year-end financial reporting. EM should also develop procedures to ensure the contingency estimates are based on assumptions consistent with the baseline estimates. We also recommend that OSCM and EM develop procedures for adequate coordination between these offices to ensure that annual updates to the estimates are based upon current information and consistent assumptions.

Management's Response:

The Department concurs with the recommendations to strengthen internal controls over the EM environmental liabilities. To address the recommendation, EM will issue guidance and provide training to EM field offices regarding management reviews of estimates and recording EM liability adjustments in the proper reporting period. The EM training will specifically focus on ensuring that new cost estimates are evaluated in time to adjust the liability in the current reporting period or prior to year-end financial reporting. Furthermore, EM agrees to develop procedures, and provide training, for ensuring contingency estimates are based on assumptions consistent with the baseline estimates. Lastly, to ensure the accuracy of EM Headquarters estimates, EM will develop a coordination process with OSCM to ensure that the most current assumptions associated with a geologic repository are included in the EM Headquarters estimates.

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.

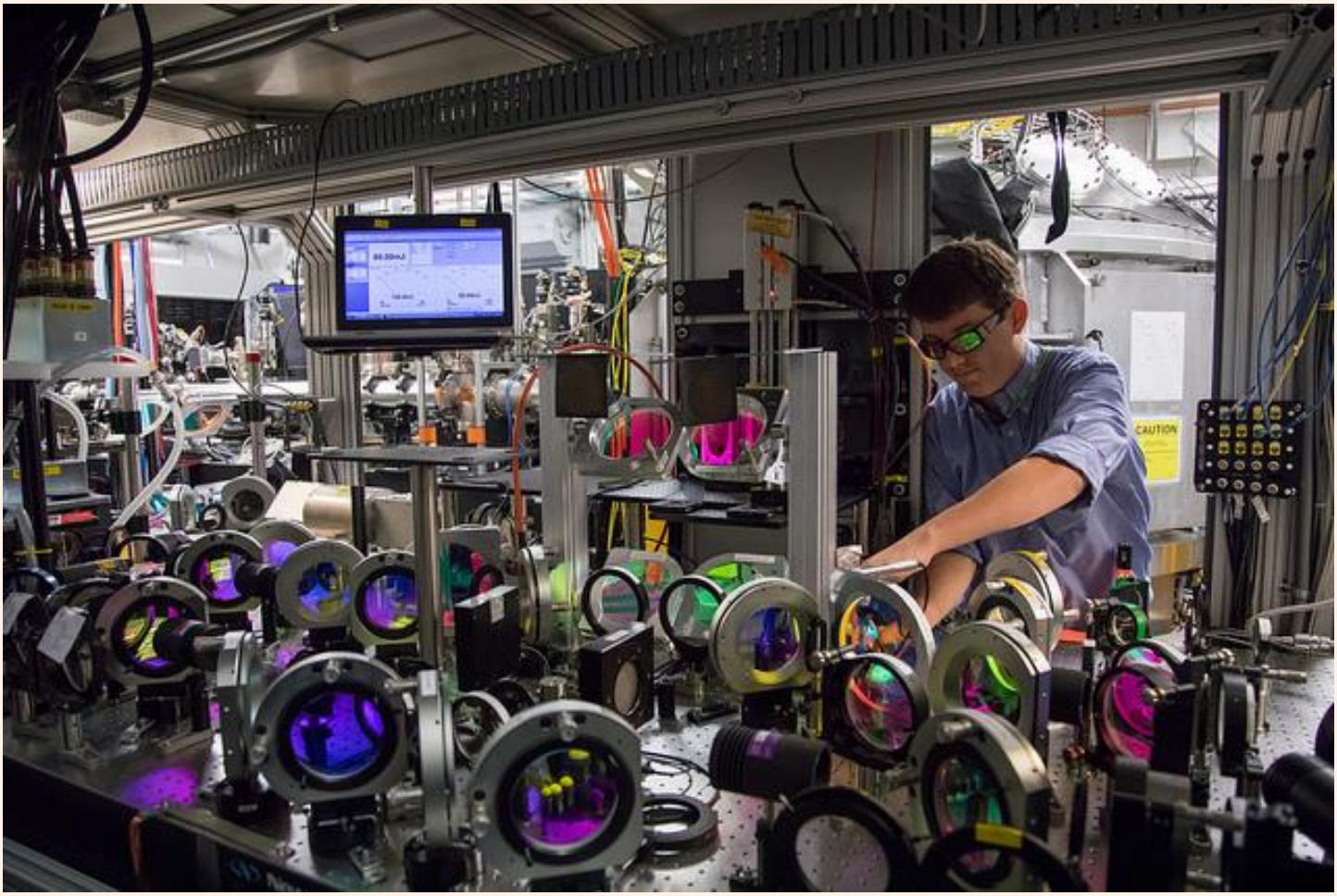
Please send your comments, suggestions, and feedback to OIG.Reports@hq.doe.gov and include your name, contact information, and the report number. You may also mail comments to:

Office of Inspector General (IG-12)
Department of Energy
Washington, DC 20585

If you want to discuss this report or your comments with a member of the Office of Inspector General staff, please contact our office at (202) 253-2162.

Other Information

(Unaudited)



Exploring the Universe Using an Upgraded Laser at the SLAC National Accelerator Laboratory
In 2017, the Matter in Extreme Conditions (MEC) optical laser was upgraded to be three times more powerful than before to reach even more extreme states of matter. Photo Credit: Dawn Harmer/SLAC National Accelerator Laboratory, July 30, 2017.

Inspector General's Management Challenges

The Office of Inspector General (OIG) annually identifies what it considers to be the most significant management challenges facing the Department. This effort is designed to assess the Agency's progress in addressing previously identified challenges and to consider emerging issues. The identified challenges represent risks inherent in the Department's wide-ranging and complex operations, as well as those related to problems with specific management processes. The OIG'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.

While the fiscal year (FY) 2018 challenge areas remain largely consistent with those in previous years, based on the results of our work over the last year, we made a few changes. Specifically, given the large volume of contracts awarded by the Department and its management and operating contractors and the need for adequate oversight of subcontractors, we added Subcontract Management as a component of the Contract Oversight challenge. Over the past year, the work of the OIG has shown Subcontract Management is an increasing challenge for the Department. As a result, the FY 2018 management challenges include the following:

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

In addition to the management challenges, we maintain a watch list of other issues that do not meet the threshold of a management challenge, yet in our view, warrant special attention by Department officials. For FY 2018, 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.

Contract Oversight

The Department of Energy is the largest civilian contracting agency in the Federal Government and spends approximately 90% of its annual budget on contracts to operate its scientific laboratories, engineering and production facilities, environmental restoration sites, and large capital asset projects. In FY 2016, the Department managed 11,311 contracts valued at more than $24 billion. Additionally, according to the Office of Acquisition Management, the Department's management and operating (M&O) contractors reported over $354 million in subcontracts during FY 2017.

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 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, this year's management challenges report broadens the area of Contract Oversight to include Contractor Management and Subcontract Management as sub-components.

Contractor Management

In February 2017, the Government Accountability Office reported that the Department did not have the capacity to resolve contract and project management problems, nor did the Department demonstrate progress toward implementing measures to resolve high-risk areas. Further, our FY 2017 audit, inspection and investigative work identified numerous issues related to contractor management. Specifically, we found issues/weaknesses with contractor quality assurance programs and requirements, including contractors' ability to manage quality assurance of procurements.

The Government Accountability Office acknowledged that the Department continued to meet the leadership commitment criteria and partially meet the criteria for having a corrective action plan. The Agency further acknowledged that the Department had improved its monitoring of the effectiveness of corrective measures.

However, 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 Contract Management is a significant management challenge.

Subcontract Management

As previously noted, the Office of Acquisition Management indicated that the Department's M&O contractors reported $354 million in subcontracts during FY 2017. Many of the contractual provisions that are included in M&O contracts are required to be flowed down into any subcontracts. However, the Department and its contractors had not always provided adequate oversight of subcontracts. For example, Washington Closure Hanford, LLC (WCH) was required to flow down quality assurance requirements, specific to the scope of work, in its subcontracts and evaluate the subcontractors' capability of implementing the applied requirements. However, we identified weaknesses in how WCH flowed down quality assurance requirements and in the subsequent evaluations used to determine subcontractors' capability to implement a quality assurance program.

Additionally, during the past year, the OIG has investigated issues of contract fraud, especially in the area of procurement, and has received complaints through the Hotline concerning hiring irregularities and time and attendance issues. Given that these issues extend to subcontractors and the importance of the Department's subcontracts, this area has been identified as a management challenge.

Cybersecurity

The use of information technology by Federal agencies continues to evolve, resulting in greater opportunities for accessibility to Government information and resources. Specifically these advancements in technology have led to cybersecurity incidents becoming a prominent threat and are occurring at an increased frequency. According to the Office of Management and Budget, Federal agencies reported over 30,000 cyber incidents in FY 2016. Sixteen of these incidents met the threshold for a major incident, defined as any incident that is likely to result in demonstrable harm to the national security interests, foreign relations, or economy of the United States or to the public confidence, civil liberties, or public health and safety of the American people. 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.

Although the Department made progress in the area of cybersecurity during FY 2017, 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. Further, in March 2017, the Office of Management and Budget concluded that the Department failed to reach the Cybersecurity Cross-Agency Priority goals in the areas of Hardware Asset Management, Software Asset Management, Vulnerability Management, Secure Configuration Management, Unprivileged User Personal Identity Verification (PIV) Implementation, Privileged User PIV Implementation, and Anti-Phishing Defenses. As a result of these inherent risks and the sensitivity of much of the Department's work, Department management must continue to emphasize cybersecurity.

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 to the FY 2016 estimate of $372 billion. The Department is responsible for 83%, of the Federal government's $447 billion FY 2016 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.

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. One such facility is the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico. The Department suspended operations at WIPP in February 2014 as a result of an accidental radiological release. As the Nation's sole repository for the disposal of transuranic waste generated by atomic energy defense activities, the closure of WIPP affected transuranic waste operations across the Nation. While the Department's initial Recovery Plan slated operations to resume in the first quarter of calendar year 2016, this date was pushed back several times, and WIPP did not resume operations until January 2017.

In addition, the Department is currently in the process of designing and building a Waste Treatment and Immobilization Plant (WTP). When complete, the WTP 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. However, the Department has faced significant technical challenges in successfully constructing and operating the WTP. In December 2016, the Department increased the cost estimate for the WTP by approximately $4.5 billion and extended the completion date.

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 addition, these programs are designed to protect against activities that may pose significant danger to the health and safety of Department Federal and contractor employees or the public.

In addition, entities within and outside the Department have identified challenges associated with Safeguards and Security. For example, the Defense Nuclear Facilities Safety Board and the NNSA Office of Safety and Health identified management weaknesses in the Pantex Plant Emergency Management Program. These weaknesses included, but were not limited to training, drills, and exercises that had not always been adequately planned, conducted, or completed timely. Further, program self-assessments had not always identified program weaknesses. In addition, the Office of Enterprise Assessments (EA) issued its 2016 Best Practices and Lessons Learned report in June 2017, which found weaknesses in Emergency Response Performance and Emergency Preparedness. Some of the issues identified by EA included:

- Inability to demonstrate situational awareness due to poor communications;
- Inadequate use of information management tools;
- Responders not referring to procedures;
- Response procedures not available, accurate, or complete, at all times; and
- Inadequate corrective action implementation which resulted in recurring issues and delays in program improvement.

In a separate report, Assessment of Work Planning and Control at the Lawrence Livermore National Laboratory, EA found instances in which hazard controls of a Hazard Control Plan were confusing or conflicting, or could not be followed as documented in the Plan.

Stockpile Stewardship

The Department and NNSA are responsible for enhancing national security through the military application of nuclear science. NNSA maintains and enhances the safety, security, and effectiveness of the Nation's nuclear weapons stockpile without nuclear testing. NNSA's stockpile surveillance program continuously assess and evaluates each nuclear weapon system to detect or anticipate any potential problems. 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 more than 1,500 Federal employees and 35,000 contractor personnel, as well as assigned members of the military.

While the Department indicated that substantial progress on priorities, including life extension programs, had been made, 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. Yet the current demands of the stockpile stewardship program have placed increasing loads on an aging NNSA infrastructure.

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 November 2016, the Department had the fourth largest inventory of real property in the Federal government by square footage, including 10,095 buildings totaling 119 million square feet (owned and leased) with approximately $2 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 April 2010 Nuclear Posture Review Report, in order to remain safe, secure, and effective, the U.S. nuclear stockpile must be supported by a modern physical infrastructure comprised of the national security laboratories and a complex of supporting facilities. However, the average age of the Department's facilities is 36 years and its utilities is 39 years.

Specifically, 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. Laboratory facilities and infrastructure in poor condition can have 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. Based on Department-wide facility assessments and data analyses, the Department is facing a systemic challenge of degrading infrastructure and levels of deferred maintenance that have been increasing. In fact, the November 2016 The State of General Purpose Infrastructure at the Department of Energy report indicated that 50% of the Department's assessed, owned and active buildings, trailers, and other structures and facilities were considered functionally adequate to meet the mission, while 33% were considered substandard, and 17% were considered inadequate.

Watch List

Annually, the OIG also prepares a watch list to accompany the management challenges listing. These areas identified incorporate issues that at the current time do not meet the threshold of a management challenge; however in our view, 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 safe and efficient accomplishment of the Department's mission. However, the OIG is concerned about the rigor of the Employee Concerns Program. Specifically, the OIG has become concerned that contractors are not adequately addressing employee's concerns and may be suppressing complaints. 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 their expenses. For these reasons, the Department's Employee Concerns Program has been added to the management challenges watch list.

Power Marketing Administrations

The Department's four Power Marketing Administrations (PMAs) 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 related power costs. However, the Department has experienced challenges in overseeing the PMAs. Based on the OIG's in-process work at the PMAs, there have been indicators of potential fraud, waste, and abuse in certain circumstances. For these reasons, the PMAs have been added to the management challenges watch list.

Human Capital Management

Human Capital Management is responsible for the attraction, selection, training, assessment, and rewarding of employees. Human Capital Management impacts almost every aspect of an organization's activities and its effective implementation is critical to the organization's success. According to the 2016-2020 *Strategic Human Capital Plan*, over 35% of the Department's federal employees will be eligible to retire by 2020, including many of its most experienced and highly skilled professionals. Current

budget uncertainties and long-term fiscal pressures, coupled with a potential wave of employee retirements could produce gaps in leadership and institutional knowledge that would threaten the Department's ability to meet its mission. Further, Department officials from the Office of Nuclear Energy, NNSA, and Office of the Chief Human Capital Officer have all 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 manages a portfolio comprising more than $30 billion of loans, loan guarantees and conditional commitments covering more than 30 projects. The Department operates two direct loan and loan guarantee programs; the Advanced Technology Vehicles Manufacturing (ATVM) Loan Program and the Title XVII Guarantee Program for Innovative Technologies (Title XVII). The ATVM Loan Program authorizes direct loans to support the development of advanced technology vehicles and associated components. The Title XVII Loan Program authorizes the Department to issue loan guarantees to eligible projects that avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases and employ new or significantly improved technologies. However, the Department has not always managed these loan guarantee programs effectively. For example, in FY 2016, the Department wrote off two loans worth over $74 million. In addition, in September 2017, the Department announced additional conditional commitments of up to $3.7 billion in loan guarantees for the construction of two reactors at the Vogtle Electric Generating Plant on top of the $8.3 billion in loan guarantees already provided for the construction. Construction of the reactors at Vogtle could be at risk due to the filing of Chapter 11 bankruptcy of one of the original construction contractors, Westinghouse, in March 2017. 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 implements medical surveillance and screening programs for current and former workers and supports the Department of Labor in the implementation of the Energy Employees Occupational Illness Compensation Program Act. Health studies are conducted to 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 implementation of policy and resolve worker safety and health issues. Because of the importance of Department employees, worker and community safety continues to be on the management challenges watch list.

FY 2017 Summary of Financial Statement Audit and Management Assurances

Audit Opinion	Unmodified				
Restatement	No				
Material Weaknesses	**Beginning Balance**	**New**	**Resolved**	**Consolidated**	**Ending Balance**
No material weaknesses reported					
Total Material Weaknesses	***0***	***0***	***0***	***0***	***0***

Effectiveness of Internal Control over Financial Reporting (FMFIA Section II)						
Statement of Assurance	Unmodified					
Material Weaknesses	**Beginning Balance**	**New**	**Resolved**	**Consolidated**	**Reassessed**	**Ending Balance**
No material weaknesses reported						
Total Material Weaknesses	***0***	***0***	***0***	***0***	***0***	***0***
Effectiveness of Internal Control over Operations (FMFIA Section II)						
Statement of Assurance	Unmodified					
Material Weaknesses	**Beginning Balance**	**New**	**Resolved**	**Consolidated**	**Reassessed**	**Ending Balance**
No material weaknesses reported						
Total Material Weaknesses	***0***	***0***	***0***	***0***	***0***	***0***
Conformance with Federal Financial Management System Requirements (FMFIA Section IV)						
Statement of Assurance	Federal Systems comply to financial management systems requirements					
Non-Compliance	**Beginning Balance**	**New**	**Resolved**	**Consolidated**	**Reassessed**	**Ending Balance**
No non-compliances reported						
Total non-conformance	***0***	***0***	***0***	***0***	***0***	***0***

Conformance with Section 803 (a) of the Federal Financial Management Improvement Act (FFMIA)		
	Agency	**Auditor**
1. Federal Financial Management System Requirements	No lack of compliance noted	No lack of compliance noted
2. Applicable Federal Accounting Standards	No lack of compliance noted	No lack of compliance noted
3. USSGL at Transaction Level	No lack of compliance noted	No lack of compliance noted

Financial Management Systems Plan

Corporate Business Systems

The Department's enterprise-wide corporate business systems consist of financial, budgetary, procurement, and personnel systems. Information from these systems is supported by a data warehouse that links common data elements from each of the Department's business systems and supports both external and internal reporting. The major business systems are:

- Budget System: Funds Distribution System (FDS) 2.0
- Financial System: Standard Accounting and Reporting System (STARS)
- Personnel System: Corporate Human Resource Information System (CHRIS)
- Procurement System: Strategic Integrated Procurement Enterprise System (STRIPES)
- Integrated Data Warehouse (IDW)/iPortal
- Travel and payroll processing: Travel processing services are provided through the General Services Administration (GSA) eTravel Services contract using a system called Concur Government Edition. Payroll processing services are outsourced to the Defense Finance and Accounting Service.

Current Systems

Funds Distribution System 2.0 – FDS 2.0 is the Department's budgetary funds distribution system providing the capability to record, distribute, and execute appropriations, apportionments, allotments, suballotments and allocations, as well as ancillary processes such as reprogrammings and appropriation transfers. FDS 2.0 integrates with STARS and IDW, as well as field office systems for capturing reimbursable work transactions. FDS 2.0 went live on October 1, 2016 for FY 2017 processing. In FY 2017, some of the processes were enhanced to streamline processing. Future activities planned for FDS 2.0 include additional user-requested enhancements and development of additional functionality.

Standard Accounting and Reporting System – STARS is the Department's financial management system that provides financial accounting, financial reporting, and performance measurement. STARS integrates with procurement, funds distribution, travel, and human resources systems. In FY 2017, STARS completed the planned database upgrade to Oracle 12c; made significant progress in Agency Financial Report automation and accomplished further automation to the Reclassified Financial Statements. Required software patches and enhancements were successfully implemented, and the enhancements to accommodate the Uniform Procurement Instrument Identifier (UPIID) were completed. Future STARS activities include completion of the planned Agency Financial Report automation and implementing the Oracle Trading Partner reporting capability.

Corporate Human Resource Information System – CHRIS is the Human Resources (HR) system. The primary objectives for CHRIS are to improve operational HR efficiency, reduce paperwork, and provide strategic information necessary to make informed human resource management decisions. FY 2017 accomplishments included the database upgrade to Oracle 12c and deployment of Release 16 to the production instance. In FY 2018, CHRIS will be implementing the new Time-to-Hire reporting system, a new interface with Monster.com for applicant tracking and reporting, and continuing work on the implementation of PeopleSoft Human Capital Management (HCM) Release 9.2.

Strategic Integrated Procurement Enterprise System – STRIPES is the procurement and contracts management system that automates all procurement and contract activities associated with planning, awarding and administering various unclassified acquisition and financial assistance instruments. STRIPES is integrated with STARS and IDW. The STRIPES application connects DOE with the GSA Integrated Acquisition Environment, which includes the System for Award Management, Federal Procurement Data System – Next Generation (FPDS-NG), and Federal Business Opportunities. STRIPES also has interfaces with Grants.gov and FedConnect.

FY 2017 accomplishments included upgrading all STRIPES database environments to Oracle 12c, installation of self-service password module into STRIPES, completing initial testing of the PRISM Record Retention and Destruction module (PRISM), implementing required Data Act patches, and implementing the Uniform Procurement Instrument Identifier (UPIID). In FY 2018, STRIPES will initiate the upgrade to PRISM version 7.3 and implement PRISM changes to accommodate the GSA FPDS-NG upgrade to version 1.5. Implementation options will be determined for the Record Retention & Destruction functionality.

Integrated Data Warehouse (IDW) – IDW is a central data warehouse linking common data elements from multiple DOE corporate business applications to provide reporting to DOE executives, managers, and staff, including access to business applications, personalized dashboards, messaging, discussion boards, collaboration capabilities, news, reporting, web conferencing, graphing and data exchange capabilities. In FY 2017, IDW implemented changes in subject areas and reporting in conjunction with various upgrades to STARS and STRIPES and to support the deployment of FDS 2.0; developed repository for the retired Legacy FDS and BEARS data, and various updates in support of the implementation of the new Uniform Procurement Instrument Identifier (UPIID). The migration

from Oracle Warehouse Builder (OWB) to Oracle Data Integrator was completed. Full lifecycle development for a new iBenefits application was completed and the system was implemented on September 30. Reports and dashboards were developed to support the Grants Oversight & New Efficiency (GONE) Act requirements for the Department. Analysis and testing was completed on the upgrade of Oracle Business Intelligence release 12c.

Systems Underway

With the implementation of FDS 2.0, DOE has begun requirements development for a budget formulation module to integrate with funds distribution. This corporate budget formulation solution will replace the Excel spreadsheets and local systems in use today and will allow budgets to be formulated from the bottom up across the enterprise in a standard framework. In FY 2017, the scope for the first phase was determined and the current business process and information flows were documented.

Key functional and business requirements have also been documented. In FY 2018, the design, development, testing, and training will be performed in preparation for deployment.

IDW will be modified to allow the Department to continue complying with GONE Act reporting for FY 2018. In addition, the A-123 data collection and reporting tools will be redesigned to enhance the internal controls process.

Payment Integrity Reporting

The Improper Payments Information Act (IPIA) of 2002, Public Law (P.L.) No. 107-300, as amended by the Improper Payments Elimination and Recovery Act (IPERA) of 2010, and the Improper Payments Elimination and Recovery Improvement Act (IPERIA) of 2012, requires Federal agencies to annually review their programs and activities to identify those susceptible to significant improper payments, and to measure and report improper payment rates and amounts for programs that are found to be susceptible to improper payments.

In addition, IPERA and the implementing guidance expanded agency authorities and requirements for recapturing overpayments, a type of improper payment. OMB guidance for implementing IPERA establishes specific reporting requirements for agencies with programs that possess a significant risk of erroneous payments and for reporting on the results of recapture activities.

Detailed information on improper payments and information reported in prior AFRs can be found on the Payment Accuracy website, https://paymentaccuracy.gov/.

The Department evaluates the following nine OMB risk factors when performing risk assessments:

1. Whether the program or activity is new;
2. The complexity of the program, particularly with respect to determining correct payment amounts;
3. The volume and dollar amount of payments by payment category (Vendors/Contracts, Payroll, Travel, Other, Grants and Cooperative Agreements, and Loans);
4. Whether payments or payment eligibility decisions are made outside of the agency;
5. Recent major changes in program funding, authorities, practices or procedures;
6. The level, experience, and quality of training of personnel responsible for making payment eligibility determinations, or for certifying that payments are accurate;
7. Inherent risk of improper payments for each payment category;
8. Significant deficiencies in audit reports that might hinder accurate payment certification; and
9. Results of prior improper payment work, such as OMB Circular A-123 assessments and other internal reviews designed to prevent or detect improper payments.

In addition, the Department considers two other risk factors when performing risk assessments: (1) evaluation of the oversight monitoring contractor payment processes, and (2) evaluation of the segregation of duties ensuring the integrity of the payment process.

Risk assessments conducted during FY 2015 determined that the Department was not susceptible to significant improper payments. In FY 2017, the Department confirmed that no significant: (1) changes in legislation, (2) increases in its funding level, or (3) changes to its site's payment processes occurred that would make it susceptible to significant improper payments. Therefore, the Department did not perform a risk assessment in FY 2017, but will perform risk assessments in FY 2018 to meet the requirement to perform a risk assessment at least once every three years.

DOE continues to maintain a <1% overall erroneous payment rate (.07%), and actual improper payments are below OMB's $100 million threshold. The Departmental erroneous payment rate has remained below 1% since the inception of its program in FY 2002. For FY 2016 information reported in FY 2017, the Department's total payment outlays were $37.45 billion, and identified improper payments were $25.84 million.

I. Payment Reporting

This section is not applicable to DOE.

II. Recapture of Improper Payments Reporting

In accordance with the expanded requirements of IPERA, the Department has established a policy for implementing payment recapture auditing requirements. The Department's low improper payment rate of .07% reported in FY 2017 for FY 2016 payments, and the high recapture rate of 92% reported for the same period, support the Department's determination that it is not cost-effective to employ traditional payment recapture audit contracts, and the Department notified OMB of this fact in September 2015. For FY 2017, $.083 million is deemed uncollectible due to amounts being below the threshold minimum established for pursuing recapture or due to lost prompt payment discounts.

The Department conducts site-specific review and analysis of accounting and financial records, supporting documentation, and other pertinent information supporting payments. These activities are detective and corrective in nature, and are designed to identify and recapture overpayments. Activities include prepayment review and approval of invoices, performing quarterly prompt-payment reviews, post-payment reviews, contractor internal audits, leveraging the results of cost allowability audits of integrated contractors and interim and close-out reviews of contracts and grants, reviews of grant credits in ASAP (Automated Standard Application for Payments), and results from travel audits. The Department will continue to scrutinize improper payment

activity and controls through its internal control program by emphasizing, evaluating, and strengthening controls as needed to maintain our record of low payment errors and to ensure the effective stewardship of public funds.

FY 2016 Overpayments Recaptured Outside of Payment Recapture Audits Reported in FY 2017 ($ in millions)[1]			
PROGRAM/ PAYMENT TYPE	AMOUNTS IDENTIFIED FOR RECAPTURE[2]	AMOUNTS RECAPTURED	RECAPTURE RATE FOR FY 2016 AND PRIOR REPORTED IN FY 2017[3]
Vendors/Contracts	$17.65	$16.31	92.38%
Benefits - Payroll	$3.44	$2.94	85.54%
Benefits - Travel	$0.83	$0.70	84.19%
Grants	$7.17	$7.14	99.67%
Loans	$0.00	$0.00	0.00%
Other	$0.72	$0.69	95.46%
Total	**$29.81**	**$27.78**	**93.19%**

[1] Based on OMB approval received May 25, 2011, DOE reports prior year payment activity in its current year Agency Financial Report (AFR). Recaptured funds include amounts associated with FY 2016 payments and recapture that occurred in FY 2016 for payments made in previous years due to Statement of Cost Incurred and Claimed, Single Audits, and contract closeouts. In addition, DOE is considered one program for improper payment reporting and assesses the payment types included in this table for its 48 payment reporting sites. OMB approval for this approach was received August 10, 2011.

[2]Amounts include overpayments and excludes underpayments that cannot be recaptured.

[3]The total recapture rate of 93.19% incorporates prior recapture associated with improper payments identified for payments made in FY 2016 and prior, and therefore, differs from the recapture rate of 92% associated with only FY 2016 payments disclosed in the narrative above.

III. Agency Improvement of Payment Accuracy with the Do Not Pay Initiative

This section is not applicable to DOE.

IV. Barriers

This section is not applicable to DOE.

V. Accountability

This section is not applicable to DOE.

VI. Agency Information Systems and Other Infrastructure

This section is not applicable to DOE.

VII. Sampling and Estimation

This section is not applicable to DOE.

Reduce the Footprint

During FY 2017, OMB Circular A-136, *Financial Reporting Requirements*, requires the Department to report on progress made implementing the "Reduce the Footprint" policy. Specifically, in accordance with Management Procedures Memorandum (MPM) 2015-01, Implementation of Office of Management and Budget (OMB) Memorandum M-12-12 Section 3: Reduce the Footprint (RTF), all CFO Act departments and agencies shall identify reduction targets for their portfolio of domestic office and warehouse space inventory compared to a RTF-specific FY 2015 baseline, established by GSA.

In Fiscal Year (FY) 2016 the Department reduced its office and warehouse assets by 292,141 square feet, from the FY 2015 baseline of 36,665,562 square feet to 36,373,421 square feet. Both the FY 2015 baseline and area reduced in FY 2016 were determined by GSA. Concurrently, operating costs associated with Department owned or direct leased Reduce the Footprint (RtF)-subject assets increased by $28.7 million, from $447,204,209 to $475,859,785. Included in the $476 million operating cost is $2,535,821 of operations and maintenance costs for RtF-subject assets that were determined to be unneeded and identified for disposition.

The cost of the Department's lease portfolio, for office and warehouse building area, totaled $161,982,516, which includes rent and operation and maintenance costs for space obtained through GSA occupancy agreements and Department executed leases.

The Department remains committed to the elimination and disposition of excess facilities by continuing to report excess assets to GSA, as appropriate, and disposing of unneeded space as efficiently as possible. The Department's ongoing commitment to reducing unneeded space, and more specifically office and warehouse space, is best demonstrated in the requirements of DOE Order 430.1C, Real Property Asset Management (RPAM), which was issued in FY 2016. The RPAM clearly directs that new office and warehouse space, both owned and leased, must be offset by disposition of an equivalent or greater size.

This is an extension of the Department's 15-year policy, which requires new, DOE-owned, construction to be offset by disposition of an equal or greater size building area. Typical methods of disposition include demolition, lease termination or expiration, transfer for economic development, or sale. The RPAM directs other requirements and actions with the specific intention of driving the enterprise to optimize it's real property holdings, such as citing a maximum average size for offices and administrative workspaces; and, requiring five-year real property planning which addresses reduction and consolidation of space, links core mission capabilities to real property assets, assigns a mission dependency rating for each real property asset, and requires recurring utilization and condition surveys. In addition, the Department regularly leverages GSA resources, such as Customer Portfolio Plans and Targeted Asset Reviews, which evaluate GSA and Department real property for efficient and effective mission support and potential consolidation opportunities. Most recently, in compliance with the Federal Asset Sale and Transfer Act, the Department identified over 380 office and warehouse assets, totaling nearly 2.2 million square feet, for further Program-level evaluation of their potential to be sold, transferred or consolidated.

Reduce the Footprint Baseline Comparison - Office and Warehouse (Square Feet in Millions)		
FY 2015 Baseline	FY 2016	Change FY 2016 - FY 2015 Baseline
36.7	36.4	-0.3

DOE Owned and Leased Operating Costs - Office and Warehouse (Dollars in Millions)			
	FY 2015 Reported Cost	FY 2016	Change FY 2016 - FY 2015 Baseline
Operation & Maintenance Costs	$447.2	$475.9	$28.7

Source: Federal Real Property Profile

The above tables are based on final FY 2016 data, as year-end FY 2017 data are not yet available.

Civil Monetary Penalty Adjustment for Inflation

FERC Civil Monetary Penalty Adjustment for Inflation						
Statutory Authority	**Description of Penalty**	**Year Enacted**	**Latest Year of Adjustment**	**Current Penalty Level**	**Sub-Agency/ Bureau/Unit**	**Location for Penalty Update**
16 U.S.C. § 825o-1(b), Sec. 316A of the Federal Power Act	Violation of any provision of Part II of the FPA or related rule or order.	2005	2017	$1,213,503 per violation, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
16 U.S.C. § 823b(c), Sec. 31(c) of the Federal Power Act	Violation of or failure/refusal to comply with any rule or regulation issued under Part I of the FPA or any related order or term of a license, permit, or exemption.	1986	2017	$21,916 per violation, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
16 U.S.C. § 825n(a), Sec. 315(a) of the Federal Power Act	Violation of or willful failure to comply with any order of the Commission; file any report required under the FPA; or submit any information or document or respond to subpoena required by the Commission in the course of an investigation conducted under the FPA.	1935	2017	$2,795 per violation	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
15 U.S.C. § 717t-1, Sec. 22 of the Natural Gas Act	Violation of any provision of the NGA or any related rule, regulation, restriction, condition, or order.	2005	2017	$1,213,503 per violation, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
15 U.S.C. § 3414(b)(6)(A)(i), Sec. 504(b)(6)(A)(i) of the Natural Gas Policy Act of 1978	Violation of any provision of the NGPA or any related rule or order.	2005	2017	$1,213,503 per violation, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
49 App. U.S.C. § 6(10) (1988), Sec. 6(10) of the Interstate Commerce Act	Violation of or failure/refusal to comply with regulations or orders concerning posting and filing rate schedules issued by the Commission under section 6 of the ICA.	1910	2017	$1,270 per offense and $64 per day after the first day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
49 App. U.S.C. § 16(8) (1988), Sec. 16(8) of the Interstate Commerce Act	Violation of or failure to comply orders issued by the Commission under sections 3, 13, or 15 of the ICA.	1910	2017	$12,705 per violation, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
49 App. U.S.C. § 19a(k) (1988), Sec. 19a(k) of the Interstate Commerce Act	Violation of or failure to comply with Commission's requirements to provide information in connection with the Commission's valuation of a pipeline carrier's property under section 19(a) of the ICA.	1913	2017	$1,270 per offense, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139
49 App. U.S.C. § 20(7)(a) (1988), Sec. 20(7)(a) of the Interstate Commerce Act	Violation of or failure to keep or submit certain accounts, records, or memoranda required by the Commission under authority granted in section 20 of the ICA.	1940	2017	$1,270 per offense, per day	Federal Energy Regulatory Commission/Office of Enforcement	Federal Register Vol. 82, No. 14 (January 24, 2017) 8137-8139

DOE Civil Monetary Penalty Adjustment for Inflation						
Authority	**Description of Penalty**	**Year Enacted**	**Latest Year of Adjustment**	**Current Penalty Level**	**Sub-Agency/ Bureau/Unit**	**Location for Penalty Update**
Energy Supply and Environmental Coordination Act of 1974, 10 CFR 207.7	Enforcement/Sanctions	1974	2016	$10,164	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Energy Policy and Conservation Act, 10 CFR 218.42	Enforcement/Sanctions	1975	2016	$22,015	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Energy Policy and Conservation Act, 10 CFR 429.120	Enforcement/Maximum civil penalty	1975	2016	$440	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Energy Policy and Conservation Act, 10 CFR 431.382	Enforcement/Prohibited Acts	1975	2016	$440	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Energy Policy Act of 1992, 10 CFR 490.604	Enforcement/Penalties and Fines	1992	2016	$8,523	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Powerplant and Industrial Fuel Use Act of 1978, 10 CFR 501.181	Civil penalties/Sanctions	1978	2016	90,063; 8/mcf; 36/bbl	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
31 U.S.C. 1352(c), 10 CFR 601.400 and App A	Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions/Penalties	1989	2016	$19,246 (minimum); $ 192,459 (maximum)	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Price-Anderson Amendments Act of 1988, 10 CFR 820.81	Civil monetary penalties for violation of DOE safety regulations/Amount of penalty	1988	2016	$201,106	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Atomic Energy Act of 1954, 10 CFR 824.1 and App A	Civil monetary penalties for violations of DOE Regulations regarding security of classified or sensitive information or data/Purpose and scope	1999	2016	$143,715	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Atomic Energy Act of 1954, 10 CFR 824.4 and App A	Civil monetary penalties for violations of DOE Regulations regarding security of classified or sensitive information or data/Civil penalties	1999	2016	$143,715	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Atomic Energy Act of 1954, 10 CFR 851.5 and App B	Worker health and safety rules for DOE nuclear facilities/Enforcement	2002	2016	$93,332	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Program Fraud Civil Remedies Act of 1986, 10 CFR 1013.3	False claims and statements; liability/Basis for civil penalties and assessments	1986	2016	$10,957	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
Atomic Energy Act of 1954, 10 CFR 1017.29	Dissemination of unclassified information/Civil penalty	1981	2016	$258,811	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
5 U.S.C. 7342(h), 10 CFR 1050.303	Receipt and disposition of foreign gifts and decorations/Enforcement	1977	2016	$19,621	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties
50 U.S.C. 2731(b)(2)	Worker protection at nuclear weapons facilities	1991	2016	$8,797	N/A	Federal Register 81 (December 2016): 96349 - 96353. https://www.federalregister.gov/documents/2016/12/30/2016-31035/inflation-adjustment-of-civil-monetary-penalties

Fraud Reduction

OMB Circular No. A-123, *"Management's Responsibility for Enterprise Risk Management and Internal Control,"* requires the consideration of fraud when evaluating risks and using the results of the evaluations to improve fraud prevention and detection. The Circular also mandates the incorporation of the leading practices identified in the *"GAO Framework for Managing Fraud Risks in Federal Programs"* (Framework) into internal control systems. During FY 2017, DOE adopted leading practices as part of its evaluation of fraud risks, including identifying inherent fraud risks, involving stakeholders in the risk assessment process, and analyzing data from reporting mechanisms on confirmed fraud to identify risks. The Department also continued its efforts to increase fraud awareness and expand the use of preventive and detective analytics consistent with the leading practices in the GAO Framework.

The Department's internal control program uses a risk-based approach in the design and implementation of financial and administrative control activities to mitigate identified risks. In FY 2017, the Department identified and assessed its risks, including the risk of fraud, related specifically to payroll, grants, beneficiary payments, contract management, purchase cards, travel cards, funds management, acquisition management, cost management, inventory management, payables management, project cost management, and property management. DOE evaluates these fraud-related risks on an annual basis as part of its risk assessment process. Based on its risk assessments, DOE implements control activities to mitigate the identified fraud risks, as warranted.

DOE also evaluated its adherence to the *"GAO Standards for Internal Control in the Federal Government"* (Green Book) as part of its FY 2017 internal control program. As part of its annual evaluation of internal controls for the 17 principles, the Department evaluated principle 8 of the Green Book which requires management to consider the potential for fraud when identifying, analyzing, and responding to risks. During this assessment, DOE concluded activities addressing the fraud risk principle were designed, implemented, and operating effectively in FY 2017.

In FY 2017, DOE analyzed data on confirmed fraud as part of its efforts to monitor fraud trends. The Department uses this data and information, including the results of GAO and OIG audits, evaluations, and examinations, in its efforts to continuously improve its control activities and curb fraud. DOE's CFO and OIG jointly presented a fraud awareness webinar and the Department continues to expand its fraud awareness outreach efforts as part of its strategy to deter fraud within the DOE.

Grants Oversight & New Efficiency (GONE) Act Requirements

The GONE Act requires the Department of Energy (DOE) to report all grants/cooperative agreements with a period of performance ending on or before September 30, 2015 that have not been closed and have undisbursed balances as of September 30, 2017.

The following table summarizes the six grants/cooperative agreements that were open as of September 30, 2017:

CATEGORY	2-3 Years	>3-5 Years	>5 Years
Number of Grants/Cooperative Agreements with Zero Dollar Balances	2	2	0
Number of Grants/Cooperative Agreements with Undisbursed Balances	0	2	0
Total Amount of Undisbursed Balances (Dollars in Millions)	**$0.00**	**$0.75**	**$0.00**

The six grants/cooperative agreements remain open for the following reasons:

- Three cooperative agreements remain open due to ongoing Inspector General audits/investigations. These cooperative agreements will be closed once the audits/investigations are complete and any issues resolved;
- One grant remains open as a result of a legal settlement which requires the grantee to make quarterly refund payments over a five-year period. The grant will be closed when all refunds have been received;
- One grant remains open pending the appeal of disallowed costs. The grant will be closed when the appeal is settled; and
- One cooperative agreement is undergoing an audit and will be closed when the audit is complete.

Other Statutory Reporting – Management's Response to Audit Reports

Pursuant to the Inspector General Act Amendments of 1988 (Public Law 100-504), agency heads are to report to Congress on the status of final action taken on audit report recommendations. This report complements a report prepared by the Department's Inspector General that provides (1) information on audit reports issued during the period; (2) the status of management decisions made on previously issued IG audit reports; and (3) information on the disposition of funds put to better use and questioned costs. The IG report is available at http://www.ig.energy.gov.

This report also contains information on the resolution of Government Accountability Office (GAO) audits per the reporting requirements in OMB Circular A-50.

Inspector General Audit Reports

The Department responds to audit reports by evaluating the recommendations they contain, formally responding to the IG, and implementing agreed-upon corrective actions. In some instances, DOE takes corrective action immediately and in others, action plans with long-term milestones are developed and implemented. Actions taken by management on audit recommendations increase the efficiency and effectiveness of our operations and strengthen our standards of accountability.

At the beginning of FY 2017, there were 124 IG reports awaiting final action. In FY 2017, the Department received 49 IG reports, of which 29 contained recommendations requiring corrective actions and 20 had no recommendations. The Department took final action on 83 IG reports, of which 26 identified cost impacts, including both questioned costs and funds put to better use. At the end of the period, 70 IG reports awaited final action. Taking final action on a report includes both the development of an agreed-upon management decision and completion of the corrective actions.

Government Accountability Office Audit Reports

The GAO audits also are included in the Department's audit follow-up program. At the beginning of FY 2017 there were 49 GAO reports awaiting final action. In FY 2017, the Department received 65 additional final GAO audit reports, of which 16 contained recommendations requiring corrective actions and 49 had no recommendations. The Department completed agreed-upon corrective actions for 21 audits during FY 2017, leaving 44 GAO reports awaiting final action at year-end.

Status of Final Action on IG and GAO Audit Reports for FY 2017

The following chart provides a summary of closure actions for IG and GAO audit and inspection reports during FY 2017.

AUDIT REPORTS	NUMBER OF IG REPORTS	NUMBER OF GAO REPORTS
Reports Pending Final Action at the end of FY 2016*	124	49
Reports Issued in FY 2017 Requiring Corrective Actions	29	16
Total Reports Pending Final Action During FY 2017	153	65
Reports Closed During FY 2017	83	21
Total Reports Pending Final Action as of the End of FY 2017	70	44

*Reflects adjustments to previously reported amounts.

Glossary of Acronyms and Abbreviations

ACI	Asset Condition Index
ACTICI	MAPRITE and Advanced Computer Tool Program
AFR	Agency Financial Report
APPR	Annual Performance Report/Annual Performance Plan
ARO	Asset Retirement Obligation
ARPA-E	Advanced Research Projects Agency-Energy
ASAP	Automated Standard Application for Payments
ASC	Accounting Standards Codification
ATVM	Advanced Technology Vehicles Manufacturing
AU	Office of Environment, Health, Safety and Security
Bcf	Billion Cubic Feet
BFS	Bureau of Fiscal Service
BiOp	Biological Opinion
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
BTO	Buildings Technology Office
CDM	Continuous Diagnostics and Mitigation
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CGS	Columbia Generating Station
CHRIS	Corporate Human Resource Information System
CI	Office of Congressional & Intergovernmental Affairs
CIO	Chief Information Officer
CNSS	Committee on National Security Systems
CR	Continuing Resolution
CSIP	Cybersecurity Strategy and Implementation Plan for Federal Civilian Government
CSRS	Civil Service Retirement System
CY	Calendar Year
D&D	Decommissioning and Demolition
D&D Fund	Uranium Enrichment Decontamination and Decommissioning Fund
DATA Act	Digital Accountability and Transparency Act of 2013
DBT	Design Basis Threat
DHS	Department of Homeland Security
DM&R	Deferred Maintenance and Repairs
DNN	Defense Nuclear Nonproliferation
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOS	Department of State
DP RDT&E	Defense Programs Research, Development, Testing, and Evaluation
DTRA	Defense Threat Reduction Agency
DUC	Drilled But Uncompleted well
E3A	EINSTEIN 3 Accelerated
EA	Office of Enterprise Assessments
ECFWG	Excess Contaminated Facilities Working Group
ED	Office of Economic Impact and Diversity
EEO	Equal Employment Opportunity
EEOICPA	Energy Employees Occupational Illness Compensation Program Act
EERE	Office of Energy Efficiency and Renewable Energy
EFCOG	Energy Facility Contractors Group
EIA	Energy Information Administration
EIC	Energy Investor Center
EM	Office of Environmental Management
EPA	U.S. Environmental Protection Agency
EPSA	Energy Policy and Systems Analysis
ERISA	Employee Retirement Income Security Act
ES&H	Environment, Safety, and Health

ESA	Endangered Species Act
ESCO	Energy Service Company
eSCRM	Enterprise Supply Chain Risk Management
ESP	Early Site Permit
ESPC	Energy Savings Performance Contract
EV	Electric Vehicle
EWE	East/West Enterprise
FASAB	Federal Accounting Standards Advisory Board
FASB	Financial Accounting Standards Board
FAST	Fixing America's Surface Transportation Act of 2015
FCRA	Federal Credit Reform Act of 1990
FCRPS	Federal Columbia River Power System
FDS 2.0	Funds Distribution System
FE	Office of Fossil Energy
FERC	Federal Energy Regulatory Commission
FERS	Federal Employees Retirement System
FFB	Federal Financing Bank
FFMIA	Federal Financial Management Improvement Act of 1996
FIPP	Financial Institution Partnership Program
FISMA	Federal Information Security Management Act
FITARA	Federal Information Technology Acquisition Reform Act
FMFIA	Federal Managers' Financial Integrity Act of 1982
FPA	Federal Power Act
FPDS-NG	Federal Procurement Data System – Next Generation
FRADA	Fraud Reduction and Data Analytics Act of 2015
FTE	Full-Time Equivalent employee
FY	Fiscal Year
GAO	Government Accountability Office
GBD	Global Burst Detector sensor suite
GMRA	Government Management Reform Act of 1994
GONE	Grants Oversight and New Efficiency Act
GPRA	Government Performance and Results Act of 1993
GSA	General Services Administration
GSP	Graded Security Protection (now called Design Basis Threat, DBT)
HC	Human Capital
HCM	Human Capital Management
HEU	Highly Enriched Uranium
HLW	High-Level Radioactive Waste
HPI	Human Performance Improvement
HQ	Headquarters
HR	Human Resources
HRP	Human Reliability Program
HVA	High Value Assets
I2	Innovation Interface
ICA	Interstate Commerce Act
ICAM	Identity Credentialing and Access Management program
IDW	Integrated Data Warehouse
IE	Indian Energy
IEC	Infrastructure Executive Committee
IG	Inspector General
iJC3	Integrated Joint Cybersecurity Coordination Center
IND	Improvised Nuclear Devices
IOC	Initial Operating Capability
IOU	Investor-Owned Utility
IPERA	Improper Payments Elimination and Recovery Act of 2010
IPERIA	Improper Payments Elimination and Recovery Improvement Act of 2012
IPIA	Improper Payments Information Act of 2002
ISM	Integrated Safety Management
IT	Information Technology
IWG	Internal Working Group
JDI	"Just Do It" initiatives
kWh	Kilowatt Per Hour

LCLS	Linac Coherent Light Source
LEP	Life Extension Program
LEU	Low Enriched Uranium
LINKS	Laboratory Investor Knowledge Series
LM	Office of Legacy Management
LNG	Liquefied Natural Gas
LOB	Laboratory Operations Board
LPO	Loan Programs Office
M&O	Management and Operating
MEC	Matter in Extreme Conditions
MFA	Multifactor Authentication
MOX	Mixed Oxide
MTU	Metric Tons of Uranium
MW	Megawatt
MY	Model Year
NARUC	National Association of Regulatory Utility Commissioners
NAV	Net Asset Value
NE	Office of Nuclear Energy
NGA	Natural Gas Act
NGPA	Natural Gas Policy Act of 1978
NIH	National Institutes of Health
NNSA	National Nuclear Security Administration
NPCR	Prevent, Counter, and Respond – A Strategic Plan to Reduce Global Nuclear Threats
NRC	Nuclear Regulatory Commission
NTD	Nuclear Threat Devices
NTR	Nuclear Threat Reduction
NWF	Nuclear Waste Fund
NWPA	Nuclear Waste Policy Act of 1982
OA	Occupancy Agreement
OCIO	Office of the Chief Information Officer
OE	Office of Electricity Delivery and Energy Reliability
OHA	Office of Hearings and Appeals
OIG	Office of the Inspector General
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OWB	Oracle Warehouse Builder
P.L.	Public Law
PDP	Prescription Drug Plan
PEVs	Plug-in Electric Vehicles
PIV	Personal Identity Verification
PIV-I	Personal Identity Verification Interoperability
PMA	Power Marketing Administration
PMIAA	Program (Project) Management Improvement Accountability Act
PNNL	Pacific Northwest National Laboratory
PowerSURGE	Security Upgrades for Reliable Grid Enhancements
PP&E	Property, Plant and Equipment
PRB	Postretirement Benefits Other Than Pensions
PRISM	PRISM Record Retention and Destruction module
PSO	Program Secretarial Office
PV	Photo Voltaic
R&D	Research and Development
REP	Residential Exchange Program
RHIC	Relativistic Heavy Ion Collider
RPAM	Real Property Asset Management
RSI	Required Supplementary Information
RSSI	Required Supplementary Stewardship Information
RTF	Reduce the Footprint
RTO	Regional Transmission Organization
SC	Office of Science
SCIP	Safety Culture Improvement Panel
SCRM	Supply Chain Risk Management
SEAD	Security Executive Agent Directives
SEPA	Southeastern Power Administration
SES	Senior Executive Service
SETO	Solar Energy Technology Office

SFFAS	Statement of Federal Financial Accounting Standards
SMR	Small Modular Reactor
SNF	Spent Nuclear Fuel
SOC	Security Operations Center
SPR	Strategic Petroleum Reserve
SRS	Savannah River Site
SSMP	Stockpile Stewardship and Management Plan
STARS	Standard Accounting and Reporting System
STEM	Science, Technology, Engineering, and Mathematics
STRIPES	Strategic Integrated Procurement Enterprise System
SWPA	Southwestern Power Administration
TI	Technology Innovation
Title XVII	Title XVII Loan Guarantee Program for Innovative Technologies
Treasury	Department of the Treasury
U.S.	United States
U.S.C.	United States Code
U/SOC	Unclassified Security Operations Center
UAS	Unmanned Aircraft Systems
UET	UniEnergy Technologies
UF6	Uranium Hexafluoride
UPIID	Uniform Procurement Instrument Identifier
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEC	U.S. Enrichment Corporation Fund
WAPA	Western Area Power Administration
WCH	Washington Closure Hanford, LLC
WIPP	Waste Isolation Pilot Plant
WTP	Waste Treatment and Immobilization Plant

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