



U.S. DEPARTMENT OF  
**ENERGY**

# **Transition**

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## **2016**

**ORGANIZATION  
OVERVIEWS**  
Book Three

## ORGANIZATION OVERVIEWS

This book contains programs' standard issue papers, which provide information on program organization, mission, staffing levels and responsibilities.

## TABLE OF CONTENTS

### Section One: Corporate Offices

- Advanced Research Projects Agency – Energy (ARPA-E)
- Chief Financial Officer (CF)
- Congressional & Intergovernmental Affairs (CI)
- Energy Information Administration (EIA)
- Energy Policy & Systems Analysis (EPSA)
- Enterprise Assessments (EA)
- General Counsel (GC)
- Inspector General (IG)
- Intelligence & Counterintelligence (IN)
- International Affairs (IA)
- Loan Program Office (LP)
- Ombudsman
- Power Marketing Administrations:
  - Bonneville Power Administration (BPA)
  - Southeastern Power Administration (SEPA)
  - Southwestern Power Administration (SWPA)
  - Western Area Power Administration (WAPA)
- Public Affairs (PA)
- Secretary of Energy Advisory Board (SEAB)
- Small and Disadvantaged Business Utilization (SB)

### Section Two: National Nuclear Security Administration (NNSA)

- Defense Programs
- Defense Nuclear Nonproliferation
- Naval Reactors
- Emergency Operations
- Safety, Infrastructure and Operations
- Defense Nuclear Security
- Counterterrorism and Counterproliferation
- Acquisition and Project Management
- Information Management and Chief Information Officer

### Section Three: The Under Secretary for Science and Energy (S4)

- Electricity Delivery and Energy Reliability (OE)
- Energy Efficiency and Renewable Energy (EERE)
- Fossil Energy (FE)
- Indian Energy Policy and Programs (IE)
- Nuclear Energy (NE)
- Science (SC)
- Technology Transitions (TT)

### Section Four: The Under Secretary for Management and Performance (S3)

- Chief Information Officer (IM)
- Economic Impact & Diversity (ED)
- Environment, Health, Safety and Security (AU)
- Environmental Management (EM)
- Hearings & Appeals (HG)
- Human Capital Management (HC)
- Laboratory Operations Board (LOB)
- Legacy Management (LM)
- Management (MA)
- Project Management Oversight & Assessments (PM)

# Advanced Research Projects Agency - Energy (ARPA-E)

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

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

### Organization Information

#### Name:

Advanced Research Projects Agency-Energy (ARPA-E)

#### Address:

1000 Independence Avenue SW  
Washington, DC 20585

#### Telephone Number:

202-287-1005

#### Website:

[www.arpa-e.energy.gov](http://www.arpa-e.energy.gov)

#### Point-of-Contact E-Mail Address:

[peder.maarbjerg@hq.doe.gov](mailto:peder.maarbjerg@hq.doe.gov)

### Supporting the DOE Mission

ARPA-E was established to bring a dynamic and urgent focus to accelerating the development of innovative advanced energy technologies. Pursuant to its authorizing statute – The America COMPETES Act of 2007 – ARPA-E accelerates “transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty.”<sup>1</sup> In addressing this challenge, ARPA-E works in a complementary, non-duplicative fashion to DOE's basic and applied energy R&D programs and uses a modified version of the Defense Advanced Research Projects Agency's (DARPA) operational model.

ARPA-E strategically assesses opportunities for technical innovation on a continuing

<sup>1</sup> The America COMPETES Act of 2007, 42 U.S.C. §§ 16538 (2010).

basis with close attention to DOE’s strategic planning and on-going R&D investments. The Agency maintains a dynamic R&D funding portfolio in which about one third of its programs turn over every year, making it possible to nimbly address new opportunities. Each R&D program area supports 10-15 projects, which are selected to provide a portfolio of different approaches with the potential to address the program’s goals. Each project is actively managed by an ARPA-E Program Director and Tech-to-Market Advisor, with the goal of reducing the technical and commercial risks of the project. One key success metric is moving new technologies towards readiness for follow-on investment, supporting DOE’s commitment to Mission Innovation.

**Mission Statement**

ARPA-E’s mission is to overcome long-term and high-risk technological barriers in the development of energy technologies. Its goals are to “enhance the economic and energy security of the United States through the development of energy technologies” that result in (1) “reduction of imports of energy from foreign sources; (2) reductions of energy-related emissions, including greenhouse gases; (3) and improvement in the energy efficiency of all economic sectors; and to ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies.”<sup>2</sup>

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$279,982,000
FY 2016 Enacted Budget	\$291,000,000
FY 2017 Budget Request	\$500,000,000

**Human Resources**

FY 2016 Authorized Full Time Equivalentents (FTEs): 56

**History**

In 2005, Congressional leaders asked the National Academies to identify the most pressing challenges the United States faces in maintaining its global leadership in science and technology, as well as specific steps policymakers could take to help the United States compete, prosper, and stay secure in the 21<sup>st</sup> Century.<sup>3</sup>

In its report for Congress, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, the National Academies called for decisive action, warning policymakers that U.S. advantages in science and technology – which made the country a world leader for decades – had already begun to erode.

The report recommended that Congress establish an Advanced Research Projects Agency within the U.S. Department of Energy modeled after the Defense Advanced Research Projects Agency

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<sup>2</sup> Ibid

<sup>3</sup> *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*. (2007). Washington, D.C.: National Academies Press.

(DARPA) – the agency credited with such innovations as GPS, the stealth fighter, and computer networking.

In 2007, Congress passed and the President (George W. Bush) signed into law The America COMPETES Act, which officially authorized ARPA-E's creation. In 2009, Congress appropriated and President Barack Obama allocated \$400 million to the new Agency, which funded ARPA-E's first projects.

Since 2009, ARPA-E has funded more than 450 potentially transformational energy technology projects, of which more than 200 have been completed. Many of these projects have already demonstrated early indicators of technical and commercial success and spurred hundreds of millions of dollars in follow-on private-sector funding. In addition, many ARPA-E awardees have formed start-up or spin-off companies or partnered with other parts of the government and industry to further advance their technologies.

### **Functions**

ARPA-E's authorized means to overcoming the long-term and high-risk technological barriers in the development of energy technologies are:

- “Identifying and promoting revolutionary advances in fundamental sciences;
- Translating scientific discoveries and cutting-edge inventions into technological innovations; and
- Accelerating transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty.”<sup>4</sup> ARPA-E differentiates its program portfolio in terms of transportation and stationary energy.
  - For transportation, technical areas include: vehicle efficiency, low-carbon fuels, electric vehicles, and transportation systems.
  - For stationary energy, technical areas include: industrial and building efficiency, resource efficiency (including carbon capture and utilization, grid storage, and modernization), and low-carbon power generation.

Because of ARPA-E's inherent focus on innovation, decisions on new program areas are made annually in the context of the Agency's strategic assessments. As part of its strategic planning, ARPA-E draws on lessons learned from earlier programs and coordinates closely with other DOE programs, the rest of the federal government, academia, and the private sector to identify “white space” where others are not making investments in innovation, and where ARPA-E's support can deliver new value. Typically, the technological areas identified involve new learning curves and offer the prospect of dramatically improved cost-to performance ratios compared to present-generation technologies.

The ARPA-E program development cycle is focused on identifying technical roadblocks and new innovations where investment by ARPA-E could lead to new high-impact technologies. New programs are carefully constructed by program directors, working in an environment of

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<sup>4</sup> The America COMPETES Act of 2007, 42 U.S.C. §§ 16538 (2010).

constructive criticism where every aspect of a proposed program is intensely scrutinized for technical and economic viability, as well as impact on ARPA-E's and DOE's mission.

### **Recent Organization Accomplishments**

Since the funding for its first projects began in 2009, about 200 projects have reached completion and about 20 have been terminated when demonstrated approaches could not reach project goals; remaining funding was re-allocated to other promising projects. As of February 2016, 45 ARPA-E projects have secured more than \$1.25 billion in private sector follow-on funding. In addition, 36 projects have formed new companies and another 60 have partnered with another federal agency to continue development of their technology.

ARPA-E has established an internal process of impact assessment, which addresses both technical achievements and progress toward commercial impacts. The outcomes of 35 projects have been evaluated to date, with results available in the booklet, *ARPA-E, The First Seven Years*. Continuing project assessment is underway. Some notable project accomplishments include:

- ***Fluidic Energy (GRIDS)***. Developed the first and only commercial metal air battery system for grid-level storage and established high-quality performance while driving down costs. Demonstrated the technology can maintain reliable electrical delivery during power outages for 4 to 72 hours. Established manufacturing in the United States with sales to date of over 50,000 cells to customers in emerging markets to maintain cell tower reliability.
- ***Primus Power (GRIDS)***. Developed a zinc-based, rechargeable liquid flow battery for large-scale energy storage that can store substantially more energy at lower cost than conventional batteries. Demonstrated its innovative technology at the Miramar Marine Corps Air Station's microgrid. Delivered over 20 commercial battery systems, including its first international shipment, and a behind-the-meter system to a U.S. industrial facility. Partnered with Microsoft in a program to advance energy storage at datacenters globally.
- ***1366 Technologies (OPEN 2009)***. Developed the "Direct Wafer" process to produce thin wafers directly from molten silicon, and to support reduced cost of installed solar electricity by up to 50% by 2020—from \$0.15/kilowatt hour (kWh) (in 2009) to less than \$0.07/ kWh. Demonstrated wafer production at industry-standard size with efficiencies that compare favorably with today's state-of-the-art wafers, at much lower production cost. Wafer sales for pilot scale demonstrations to two solar panel makers. Wafer factory in Massachusetts designed for a capacity of 25 megawatts (MW) of silicon wafers per year, with a larger, 250 MW factory under development in New York State, paving the way for the U.S. to compete with wafer production made by other methods overseas.
- ***Makani Power (OPEN 2009)***. Developed an Airborne Wind Turbine that accesses a stronger, more consistent wind at altitudes of near 1,000 feet, where 85% of the country can offer viable wind resources, compared to only 15% accessible with current technology. Demonstrated the core technology, including autonomous launch, landing, and power generation and transmission down a tether, in an 8-meter wingspan, 20 kW prototype. Acquired by X (formerly Google X) in May 2013. X/Makani Power is now field-testing a 600 kW, 28-meter wingspan product planned to deliver energy at an unsubsidized cost competitive with coal, the current benchmark for low-cost power.

## Leadership Challenges

- **Operational Maturity and Sustainment.** Build on best practices in transition from Agency “start-up” mode to mature operations, and sustain an innovative, dynamic operational model.

## Critical Events and Action Items

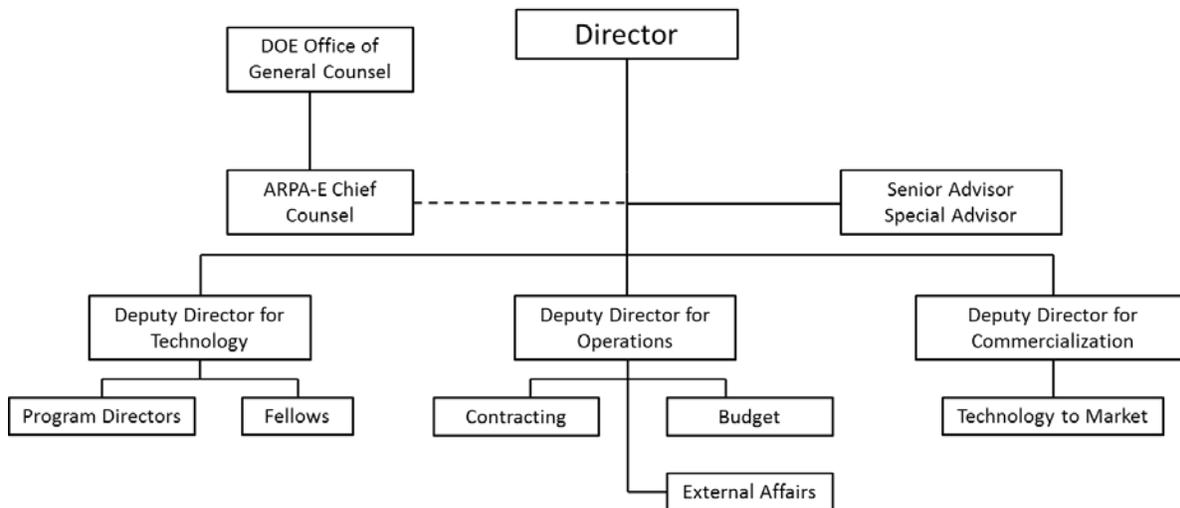
### 3-months

- Projects will be selected for the ENLITENED (ENergy-efficient Light-wave Integrated Technology Enabling Networks that Enhance Datacenters) program. (January 2017)
- 2017 ARPA-E Energy Summit (February 27-March 1). The Summit (8<sup>th</sup> year) offers a unique, three-day program aimed at moving transformational energy technologies out of the lab and into the market. This event brings together thought leaders from academia, business, and government to examine cutting-edge energy issues and catalyze the rapid handoff of advanced energy technologies into the competitive marketplace. The summit leverages DOE's convening power to advance both ARPA-E and the wider Department's core missions.

### 6 months

- Release of 2017 Focused Program Funding Opportunity Announcements (October 2016 – April 17), topics that may be announced include: Macro-algae for Biofuels, Digital Transportation, Controls for building efficiency, Power electronics circuits for optimized energy efficiency, and Materials issues in Nuclear Power.

## Organization Chart



# Office of the Chief Financial Officer

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

#### Name:

Office of the Chief Financial Officer (CFO)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

Subordinate offices in Germantown, MD

#### Telephone Number:

(202) 586-4171

#### Website:

<http://www.energy.gov/cfo/office-chief-financial-officer>

#### Point-of-Contact E-mail Address:

[alison.doone@hq.doe.gov](mailto:alison.doone@hq.doe.gov)

### Supporting the DOE Mission

The Office of the Chief Financial Officer (CFO) provides accounting and financial management services for DOE programs and activities; develops and oversees execution of the DOE budget; develops and maintains the financial management, procurement, human capital and payroll systems; manages the DOE internal controls program; develops, implements, and monitors DOE-wide financial management policies; leads development of the DOE strategic plan and establishment of priority goals; and monitors progress in achieving goals and objectives.

## Mission Statement

Leading DOE financial management operations with integrity and accountability

## Budget

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$47.0 million
FY 2016 Enacted Budget	\$47.0 million
FY 2017 Budget Request	\$53.1 million

## Human Resources

FY 2016 Authorized Full-Time Equivalents (FTEs): 212

## History

The Chief Financial Officers (CFO) Act of 1990 established the CFO position at 24 agencies, including DOE. Under the provisions of the CFO Act, the CFO reports directly to the Secretary and is responsible for overseeing financial management activities relating to the programs and operations of the agency, and developing and maintaining an integrated agency accounting and financial management system.

## Functions

- **Financial Management.** CFO oversees DOE financial management operations and serves as the principal advisor to the Secretary and other Departmental officials on matters relating to DOE financial resources. CFO also develops DOE financial management policies, manages consolidated financial and accounting operations, manages the annual financial statement audit, prepares financial statements, oversees annual internal control reviews, and serves as the liaison to the payroll service provider.
- **Budget.** CFO is responsible for and assures the financial integrity, formulation, execution, and analysis of the DOE budget. CFO serves as the liaison to the Office of Management and Budget (OMB) and to the Congressional Appropriations Committees for all matters related to the DOE budget. In addition, CFO budgets for and manages the DOE Working Capital Fund.
- **Corporate Business Systems.** CFO develops and maintains corporate business systems, including the integrated agency-wide financial accounting system.
- **Strategic Planning.** CFO leads development of the DOE strategic plan, priority goals, and performance measures and monitors progress.

## Recent Organization Accomplishments

CFO major accomplishments include:

- ***Mission Innovation Funding Initiatives.*** Developed FY17 Mission Innovation funding initiatives to achieve Administration priority of doubling investments in energy R&D over 5 years.
- ***Unmodified Audit Opinion.*** Maintained an unmodified audit opinion on DOE financial statements for the ninth consecutive year, and eliminated significant information technology deficiency that existed for 15 years.
- ***New Funds Distribution System.*** Implemented new Funds Distribution System 2.0 to replace three legacy systems.
- ***Consolidating Payment Functions.*** Consolidating corporate payment functions and systems in the CFO with the transfer of payment processing function and payment systems from the Office of Science site in Oak Ridge, Tennessee.

### **Leadership Challenges**

CFO leadership challenges include:

- ***Unfunded Mandates.*** Implementing or carrying out the increasing number of unfunded, external administrative mandates, including extensive reporting requirements. Recent examples:
  - Digital Accountability and Transparency (DATA) Act that requires expanded federal financial reporting by May 2017; and
  - Federal Information Technology Acquisition Reform Act (FITARA) that requires expanded information technology reporting.
- ***Replacing Business Systems.*** Ongoing replacement of legacy systems and implementation of new systems to increase DOE integrated financial management.
- ***Hire Qualified Candidates.*** Ability to attract and hire qualified candidates to fill vacancies.

### **Critical Events and Action Items**

#### **3-month events**

- DOE funding under a continuing resolution (CR); potential full-year funding or CR extension in Congressional lame duck session – November/December 2016
- Publish FY 2016 Agency Financial Report – November 15, 2016

#### **6-month events**

- Develop FY 2018 budget request based on Administration guidance – TBD

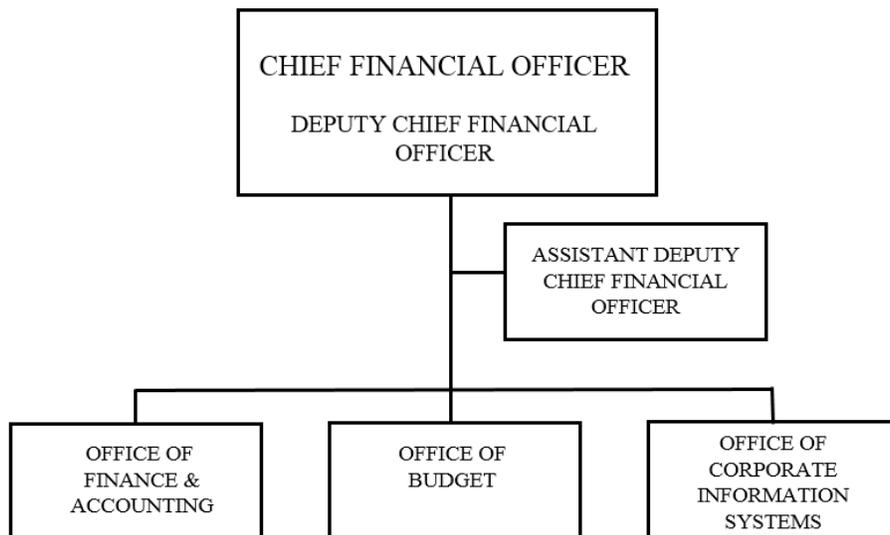
#### **12-month events**

- Implement DATA Act through transmission of required files to Treasury – May 2017
- Complete initial risk profiles as part of Enterprise Risk Management implementation for submission to OMB – June 2017
- Develop and submit to OMB FY 2019 budget request – expected September 2017

- Develop and submit updated DOE Strategic Plan – expected September 2017
- Complete GONE Act requirements to close out grants/cooperative agreements expired on or before September 30, 2015 and submit required reporting – October/November 2017
- Close out FY 2017 financial reporting and complete FY 2017 financial statements to support an independent audit

**Organizational Chart**

## OFFICE OF THE CHIEF FINANCIAL OFFICER



# Office of Congressional and Intergovernmental Affairs

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### **Organization Information**

**Name:**

Office of Congressional and Intergovernmental Affairs (CI)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-5450

**Website:**

<http://www.energy.gov/congressional/office-congressional-and-intergovernmental-affairs>

**Point-of-Contact E-mail Address:**

[shari.davenport@hq.doe.gov](mailto:shari.davenport@hq.doe.gov)

**Mission Statement**

To promote the Secretary's, Department's, and Administration's policies, legislative initiatives, and budget requests with the Congress, State, territorial, Tribal, and local government officials, and other Federal agencies. CI is also responsible for managing and overseeing the Department's liaison with Members of Congress, other levels of governments, and stakeholders, which includes consumer liaison and public interest groups.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$4.7 million
FY 2016 Enacted Budget	\$6.3 million
FY 2017 Budget Request	\$6.2 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalent (FTEs): 33.

## **Functions**

The CI functions are organized around the following major constituency groups: Congressional, Intergovernmental, Tribal, and External Affairs.

- ***Congressional Affairs.*** CI provides oversight, management, and direction of legislative strategies in connection with the Department's policy and program initiatives, and ensures that the Department's positions are properly communicated with the Congress. CI provides advice and guidance to the Secretary, Deputy Secretary, and Under Secretaries on policy issues and Members' interests and concerns, and facilitates accurate, timely information and responses to the Congress. Congressional interactions and hearings on National Nuclear Security Administration (NNSA) issues are handled by the NNSA Office of External Affairs. Issues involving appropriations and appearances before the appropriations committees are handled by the External Coordination Office in the Office of the Chief Financial Officer (CFO).
  - **Hearings.** CI prepares Departmental officials for congressional hearings, including confirmation, programmatic, and oversight hearings before authorizing committees. CI works in close coordination with the CFO, which leads preparations for budget hearings. The Department's primary authorizing committees are: Senate Energy and Natural Resources; Senate Armed Services; House Energy and Commerce; House Armed Services; and House Science and Technology.
  - **Budget.** CI works in partnership with the CFO and Public Affairs offices on an annual basis as the CFO leads coordination and preparation of Departmental officials for the roll-out of the President's Budget to Congress. This includes multiple meetings, briefings, and hearings before the congressional committees of jurisdiction.
  - **Congressional Communications.** CI, with the support of specific Program Offices, responds to congressional requests and inquires, and prepares all Departmental officials for meetings, briefings, site visits, and engagements with Members of Congress, Congressional staff, or committees. CI notifies Congressional members of DOE announcements, initiatives, proposals, and grants which may affect their respective states across DOE's energy, national security, environmental, and science and technology missions, and assures any appropriate follow-up is provided. The CFO manages and coordinates briefings for the Energy and Water Appropriations Subcommittee staff in the

House and Senate and provides all notifications to the appropriations committees, as needed.

- Legislation. CI provides counsel, advice, and support on all legislative and non-legislative initiatives of Congress and the legislative implications of major Departmental programs and policies. The CFO leads the engagement with the appropriations committees on DOE annual funding bills.
- Oversight and Investigations. CI coordinates with the Office of General Counsel in managing Congressional oversight and investigations requests, including the document production process.
- ***Intergovernmental and External Affairs (IGEA)***. CI maintains ongoing communications with governors, state legislators, tribal, and local officials across the country. CI proactively engages stakeholders to ensure that their views are considered as part of the Department's decision making process. CI also communicates routinely with all relevant stakeholders on DOE announcements, initiatives, proposals, and grants, and assures appropriate follow-up.

The Department has a physical presence in 28 states. Of those, much of CI's focus is on 12 states where multiple, ongoing DOE missions are executed (California, Colorado, Idaho, Illinois, Ohio, Kentucky, Nevada, New York, New Mexico, South Carolina, Tennessee, and Washington).

CI interacts on a regular basis with intergovernmental and tribal associations including but not limited to: the National Governors Association; regional governors associations; National Association of Attorneys General; National Congress of American Indians; National League of Cities; National Conference of State Legislatures; National Association of Counties; U.S. Conference of Mayors; Southern States Energy Board; and the National Association of State Energy Officials. The focus of CI's work with these organizations is to communicate the activities of DOE programs, policies, and initiatives and solicit these groups' views, comments, and concerns. These efforts extend to a broad group of constituencies, to include business/industry, civic groups, colleges, universities, foundations, trade associations, and energy-oriented organizations.

CI engages with the 566 federally-recognized tribes, and the tribes' more than 250 reservations. This includes: advising and informing DOE senior officials on the potential impacts of Departmental programs on tribal interests and culture; developing and enhancing working relationships with Tribal leaders and organizations and entities working with tribal governments; representing DOE with sovereign Tribal governments and at tribal meetings and conferences; and recommending policies and procedures for on-going collaboration between DOE and tribes.

### **Recent Organization Accomplishments**

CI's recent significant organizational accomplishments include:

- ***Departmental Policy Coordination with Congressional, State, and Local Stakeholders***. CI is working with Members of Congress, Governors and local stakeholders to ensure their concerns and interests are fully known by senior Departmental officials during policy deliberations. Examples of initiatives with recent stakeholder interest and CI engagement

include: the siting of liquefied natural gas facilities; off shore wind and carbon capture sequestration projects; the Consent Based Siting Initiative for nuclear waste; the ongoing operations to clean-up nuclear waste contamination at DOE sites; energy innovation; and the Joint Comprehensive Plan of Action with Iran.

- ***Roll-Out Campaigns on Departmental Priorities.*** CI managed approximately 150-200 roll-out campaigns on DOE priorities to Members of Congress and congressional staff and facilitated over 500 meetings and briefings. CI completed numerous requests from congressional offices and committee staff providing technical assistance on the recent energy bills in the House and Senate.

### **Leadership Challenges**

CI leadership challenges include:

- ***New Administration Confirmation.*** Manage the confirmation process for new Administration officials in a smooth and timely manner.
- ***Stakeholder Coordination.*** Coordinate a high volume of stakeholder inquiries in the new Administration's energy priorities and leadership.
- ***Staffing Resource Constraints.*** Manage constrained staff resources while Schedule-C positions are filled.

### **Critical Events and Action Items**

#### **3-month events**

- Prepare the incoming DOE Secretary nominee for confirmation hearings, including DOE program briefings and congressional courtesy visits.
- Develop issue-specific questions and answers, and briefings and background information on new Administration DOE and legislative issues.
- Manage confirmed DOE Secretary's initial round of congressional hearings.
- Advise on and schedule appropriate Secretarial participation in "Big Seven" Intergovernmental Groups' Annual Washington DC Meetings (occurring in February and March).

#### **6-month events**

- Manage the confirmation process for all DOE nominees (anticipate 2-4 nomination hearings to include waves of multiple nominees in each hearing).
- Finalize and begin implementing an outreach and communications strategy with Members of Congress and leaders of major constituent groups (e.g., industry, environmental, academic groups).
- Rollout the FY 2018 revised DOE Budget Request to Congress.
- Manage program oversight and issue hearings for Program Secretarial Offices.
- Coordinate the DOE Secretary and Deputy Secretary congressional, intergovernmental, and external affairs engagements during anticipated travel and tours of the DOE complex and

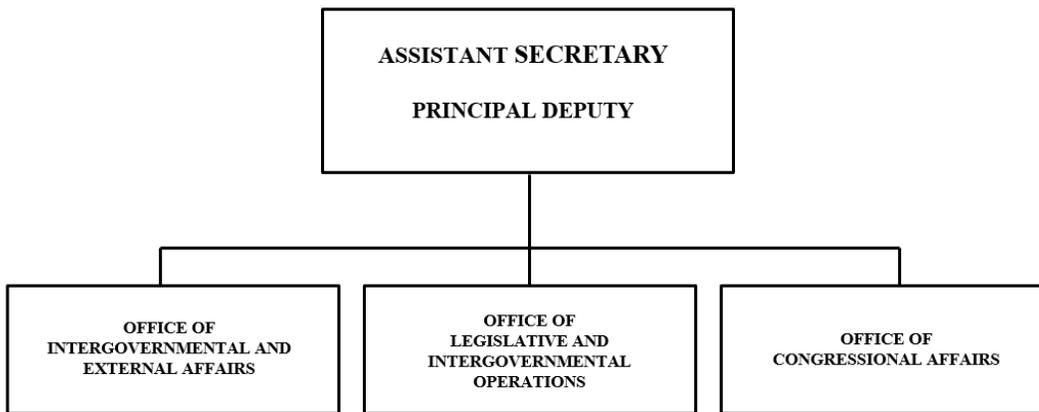
field sites.

**12-month events**

- Continue execution of the outreach and communications strategy with Members of Congress and leaders of major constituent groups (e.g., industry, environmental, academic groups).
- Continue engagement and outreach on annual legislative priorities.
- Develop and implement August congressional recess travel schedule for the DOE Secretary and Deputy Secretary.
- Assist the CFO with engagement on conference negotiations of appropriations legislation.

**Organizational Chart**

**ASSISTANT SECRETARY FOR CONGRESSIONAL AND INTERGOVERNMENTAL AFFAIRS**



# U.S. Energy Information Administration

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

### Organization Information

**Name:**

U.S. Energy Information Administration (EIA)

**Address:**

1000 Independence Avenue SW  
Washington, DC 20585

**Telephone Number:**

202-586-4361

**Website:**

[www.eia.gov](http://www.eia.gov)

**Point-of-Contact Email Address:**

[John.Conti@EIA.gov](mailto:John.Conti@EIA.gov)

[Patricia.Breed@EIA.gov](mailto:Patricia.Breed@EIA.gov)

**Supporting the DOE Mission**

EIA's programs directly support DOE by providing policy-neutral data and analyses on coal, petroleum, natural gas, electric, renewable, and nuclear energy, along with end-use energy consumption information for the residential, commercial, and manufacturing sectors. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States government.

**Mission Statement**

EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

**Budget:**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$117.0 million
FY 2016 Enacted Budget	\$122.0 million
FY 2017 Budget Request	\$131.1 million

**Human Resources:**

FY 2016 Authorized Full-Time Equivalentents (FTEs): 375

**History**

The Department of Energy Organization Act of 1977 established EIA as the primary federal government authority on energy statistics and analysis, building upon systems and organizations first established in 1974 following the oil market disruption of 1973.

**Functions**

The Department of Energy Organization Act of 1977 specifies that:

- EIA shall establish a National Energy Information System (System) to describe and facilitate analysis of energy supply and consumption to meet Federal, State, and Congressional needs. The System shall include information regarding production, distribution, ownership, consumption, transportation and marketing of energy resources. The System shall include information regarding various domestic and international sensitivities of energy resources and changes of patterns of energy supply and consumption.
- EIA shall maintain adequate resources to establish scientific, engineering, statistical and technological capabilities to perform analysis of energy information, including verifying its accuracy and independently evaluating it adequacy and comprehensiveness.
- The Administrator shall review energy information gathered by other agencies and make recommendations about the collection and reporting of such information.
- EIA shall provide periodic reports to Congress and the public to provide a comprehensive picture of energy resources, and shall make information available at the request of Congress.
- 15 U.S.C. § 796 grants authority to collect information and directs the Federal Energy Administration (FEA), and later, by incorporation EIA, to publish a quarterly report regarding imports of energy sources, domestic reserves, refinery activities, and petroleum inventories and to file quarterly reports with the President and Congress.

**Recent Organization Accomplishments**

EIA constantly monitors, assesses, and modifies its program to ensure that the agency provides its customers with comprehensive coverage of the evolving energy sector. The information

provided on EIA's website allows consumers, businesses, and policy makers to make better energy decisions and policies. EIA's products include:

- **Hourly Product:** Hourly and Daily Balancing Authority Operations Report (beta version)
- **Daily Products:** Today in Energy (for public use), Daily Energy Report (government use only)
- **Weekly Products:** Weekly Natural Gas Storage Report (a principal federal economic indicator), Weekly Petroleum Status Report, Gasoline and Diesel Fuel Update, Weekly Coal Production Report, This Week in Petroleum, Natural Gas Weekly Update
- **Monthly Products:** Monthly Energy Review, Short-Term Energy Outlook, Petroleum Supply Monthly, Petroleum Marketing Monthly, Monthly Biodiesel Production, Natural Gas Monthly, Drilling Productivity Report, Electric Power Monthly, Electricity Monthly Update
- **Quarterly Products:** Quarterly Coal Report, Quarterly Coal Distribution Report, Domestic Uranium Production Quarterly Report
- **Annual Products:** Annual Energy Outlook, International Energy Outlook, Natural Gas Annual, Annual Coal Report, U.S. Crude Oil and Natural Gas Proved Reserves, Electric Power Annual, U.S. Energy-Related Carbon Dioxide Emissions, Petroleum Supply Annual
- **Other Products, Tools, and Services:** State Energy Portal, Country Energy Portal, U.S. Energy Mapping System, Electricity Data Browser, Petroleum Imports Browser, Coal Data Browser, API (Application Programming Interface), Excel Add-In, Energy Explained, Energy Kids
- **Special Analyses (examples):** PADD 5 Transportation Fuels Markets, Effects of Removing Restrictions on U.S. Crude Oil Exports, U.S. Crude Oil Production to 2025, Analysis of the Impacts of the Clean Power Plan

### **Leadership Challenges**

- Transforming the energy survey program in National Energy Information System to a more modern, efficient, and maintainable platform that increases automation and standardizes processes.
- Enhancing EIA information and analysis tools to address the global energy markets, while automating processes to reduce resource requirements.
- Continuing to upgrade EIA's leadership and management skills by maintaining and expanding management development program.

## **Critical Events and Action Items**

### **Weekly events**

- Weekly Natural Gas Storage Report (principal Federal economic indicator)
- Weekly Petroleum Status Report
- Gasoline and Diesel Fuel Update

### **Monthly events**

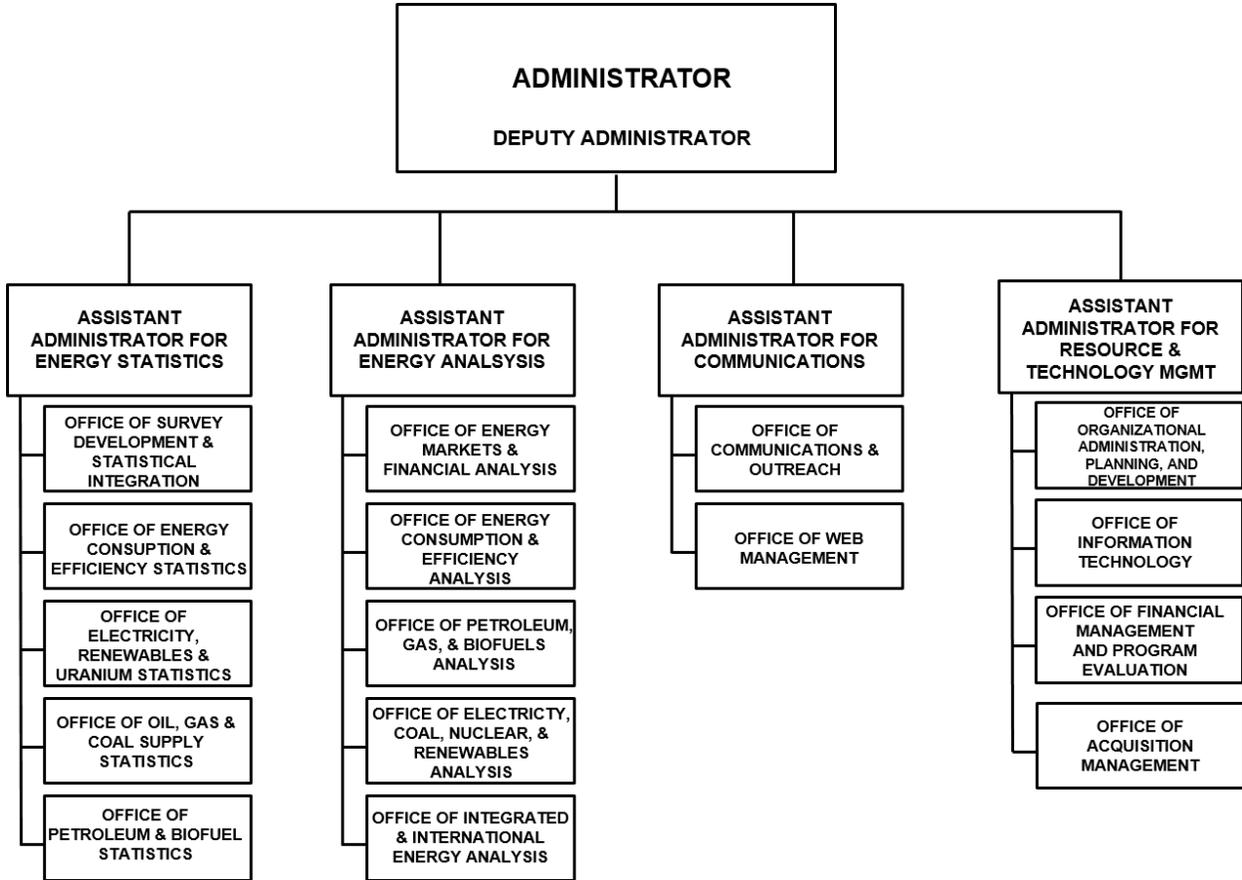
- Short-Term Energy Outlook
- Natural Gas Monthly
- Drilling Productivity Report
- Electric Power Monthly
- Petroleum Supply Monthly

### **Annual events**

- Annual Energy Outlook
- International Energy Outlook
- U.S. Crude Oil and Natural Gas Proved Reserves
- U.S. Energy-Related Carbon Dioxide Emissions

Organization Chart

# ENERGY INFORMATION ADMINISTRATION



# Office of Energy Policy and Systems Analysis

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

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

### Organization Information

**Name:**

Office of Energy Policy and Systems Analysis (EPSA)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-4800

**Website:**

<http://www.energy.gov/epsa/office-energy-policy-and-systems-analysis>

**Point-of-Contact E-mail Address:**

[ben.steinberg@hq.doe.gov](mailto:ben.steinberg@hq.doe.gov),  
[carol.battershell@hq.doe.gov](mailto:carol.battershell@hq.doe.gov)

### Supporting the DOE Mission

The Office of Energy Policy and Systems Analysis (EPSA) serves as the focal point for energy policy within the Department of Energy. EPSA delivers independent, objective analysis on existing and prospective energy-related policies, focusing in part on providing integrative analysis of energy systems to the Department's leadership. As the primary energy policy advisor to the Secretary and Deputy Secretary, the Director of EPSA manages the development and implementation of domestic energy policy, as well as DOE policy analysis and activities, and coordinates with the Office of International Affairs on international energy policy.

EPSA also supports the DOE Mission through its work to implement Strategic Objective 2 from the Department’s Strategic Plan for 2014-2018. In order to “support a more economically competitive, environmentally responsible, secure, and resilient U.S. energy infrastructure,” EPSA serves as the Secretariat for the Quadrennial Energy Review (QER), conducting analysis and coordination for this multiagency, White House-led effort.

**Mission Statement**

EPSA’s primary mission is to conduct independent, objective, strategic studies and policy analyses in addition to maintaining and coordinating a supporting set of analytical capabilities. By undertaking assessments of the strength and resiliency of anticipated challenges to domestic energy systems, EPSA identifies and prioritizes ways in which these systems can be strengthened to contribute to the economic well-being, environmental quality, and national security of North America and the United States.

EPSA also provides independent reviews and related analyses of DOE programmatic strategies and supporting budget priorities. EPSA advises, to the extent required by the QER and in conjunction with other agencies, on overall Federal strategies and budget priorities related to energy. Additionally, EPSA coordinates with states and local entities, helps to orchestrate technical assistance and advice for various energy policies and measures, and ensures adequate stakeholder input from industry, non-profit organizations, and other key stakeholders.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$31.2 million
FY 2016 Enacted Budget	\$31.3 million
FY 2017 Budget Request	\$31.0 million

**Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 70

**History**

- *Prior to 2001:* DOE had a dedicated policy office that served as the focal point for energy policy analysis within the Department.
- *2001-2013:* DOE combined the policy and international affairs functions, creating the Office of Policy and International Affairs, which largely focused on international energy engagements for the Department. During this period, policy development was more technology specific and decentralized, as policy development was conducted in multiple offices throughout the Department.
- *2013-2016:* DOE separated the policy and international affairs functions and created both the Office of Energy Policy and Systems Analysis (EPSA) and the Office of International Affairs (IA). EPSA ensures that policy analysis, formulation, coordination, and development is

conducted at an enterprise level, incorporates cross-cutting issues (i.e. security, environment, finance, etc.), and is not solely focused on specific energy technologies or sectors. EPSA maintains substantive knowledge of the activities, issues, and policies of the Department and other Federal agencies, Members of Congress, Congressional Committees, state/local governments, industry, and other key stakeholders.

## **Functions**

- EPSA facilitates the development and coordination of energy policy through the work of its divisions, including:
  - Office of Climate, Environment, and Efficiency: Develops, coordinates, and implements DOE-related aspects of environmental policy and strategies to address impacts and vulnerabilities, including those of technical programs and initiatives.
  - Office of Energy Security: Conducts policy analysis, analytic support, and policy advice relating to oil and gas markets and energy demand and supply. It provides analysis to support long-term strategies for energy security, including physical and cyber security, and in preparing for and responding to energy disruptions and emergencies.
  - Office of Energy Systems: Analyzes complex interactions within the energy system, as well as a variety of threats and risks to that system, which requires integrating overlapping policies, including those related to all aspects of energy supply and demand, energy-water nexus, supply chains and critical materials, North American energy integration, and the electricity system.
  - Office of Energy Finance, Incentives, and Program Review: Coordinates the development of policies and programs to accelerate research, development, and deployment of energy technologies, as well as energy finance and innovation policy across all energy sectors.
  - Office of State, Local, and Tribal Cooperation: Develops and carries out coordinated and coherent strategies for assisting state and local authorities in assessing and implementing energy policies, programs, and related activities suitable to their respective circumstances and areas of responsibility.
  - Office of the Secretariat for the Quadrennial Energy Review: Provides executive secretariat functions, including multiagency coordination and analytical support, for the development and implementation of the Administration's Quadrennial Energy Review.
- EPSA also maintains Department-wide roles, including:
  - Co-leading the Energy-Water Nexus Crosscut initiatives.
  - Serving on Grid Modernization Initiative Executive Committee.
  - Co-leading all North American energy integration initiatives.
  - Reviewing and providing concurrence on all Executive Secretariat, Legislative Referral Memoranda, and Questions for the Record information.

## **Organization Accomplishments:**

- *Quadrennial Energy Review (QER)*: EPSA worked with 22 Federal Agencies and the White House to publish the first installment of the QER (QER 1.1) in April of 2015. The QER identified threats, risks, and opportunities of the Nation's energy transmission, storage, and distribution infrastructure. It is a focused, actionable document designed to provide policymakers, industry, investors, and other stakeholders with unbiased data and analysis on energy challenges, needs, requirements, and barriers. EPSA has also developed a congressionally-mandated report on the implementation of all recommendations in QER 1.1. Lastly, EPSA in coordination with the White House and Federal interagency, is developing the second installment of the QER (QER 1.2), focused on the Nation's electricity system.
- *Energy Security Valuation*: EPSA is undertaking a congressionally-mandated study to (1) assess U.S. energy security in domestic and global energy markets; (2) identify metrics for evaluating energy-related actions with respect to their effects on energy security; and (3) include an implementation strategy for ensuring that metrics are applied consistently throughout the government.
- *Grid Security*: EPSA and DOE's Office of Electricity Delivery and Energy Reliability are developing a comprehensive grid security strategy with the White House, the Department of Homeland Security, and other federal partners. EPSA is also undertaking a study to examine the technical specifications of a potential federal strategic transformer reserve to provide critical spare parts in times of emergencies.
- *Energy-Water Nexus*: EPSA is an active participant in this major Department initiative, and led the drafting of a 2014 DOE report addressing the challenges and opportunities of the Energy-Water Nexus. EPSA has also co-led cross-DOE collaboration through the Energy-Water Nexus Crosscut Team and facilitated international collaboration with China through the energy and water track of the U.S. China Clean Energy Research Center (CERC).
- *Strategic Reserves*: Following the publication of the first installment of the QER, which recommended optimizing the Strategic Petroleum Reserve's (SPR) emergency response capability, EPSA provided extensive technical and policy support to secure a \$2 billion authorization from Congress to make needed improvements. In 2014, EPSA also played an essential role in the development of the Northeast Gasoline Supply Reserve, the first federal regional refined product reserve that serves as a one million barrel emergency reserve for the Northeast United States.
- *Mission Innovation*: EPSA is a leader within the Department in implementing the domestic component of Mission Innovation, which is an initiative to dramatically accelerate public global clean energy innovation. The U.S. recently committed to double funding for clean energy research and development over the next five years.
- *Natural Gas Infrastructure Modernization*: EPSA is leading the Department's efforts to help modernize the Nation's natural gas transmission and distribution systems and reduce

methane emissions through common-sense standards, smart investments, and innovative research to advance the state of the art natural gas system performance.

- *Climate Resilience*: EPSA founded the Department’s work on the Partnership for Energy Sector Climate Resilience, which began in April 2015 to enhance U.S. energy security by improving the resilience of electricity infrastructure to extreme weather and climate change impacts. Under the Partnership, DOE collaborates with 18 owners and operators of electricity assets to develop and pursue strategies to reduce climate- and weather-related vulnerabilities. EPSA released a report in October 2015 that reviews regional vulnerabilities and resilience solutions to climate change in the U.S. energy sector.
- *Critical Materials Strategy*: EPSA supports the Department’s proactive and comprehensive efforts to address the challenges associated with the use of rare earth elements and other critical materials in clean energy technologies.
- *Energy Investment Partnerships*: EPSA assisted in the development and publication of a December 2015 report that highlights Energy Investment Partnerships in eight states. The Partnerships, which are frequently referred to as Green Banks, are newly emerging public-private partnerships with the authority to raise capital and align clean energy finance initiatives and traditional development finance tools to maximize the impact of public funds in accelerating clean energy deployment and economic development.
- *Clean Energy Education & Empowerment (C3E)*: As part of the domestic component of C3E, an initiative launched by the 24-government Clean Energy Ministerial to close the gender gap in energy, EPSA collaborated with DOE’s Office of International Affairs to coordinate the 2016 Annual Symposium as part of the 7<sup>th</sup> Clean Energy Ministerial in June 2016. EPSA developed C3E’s fifth year commemorative anniversary book to highlight the accomplishments of C3E’s mid-career award winners and inspire leaders in clean energy.

### **Leadership Challenges**

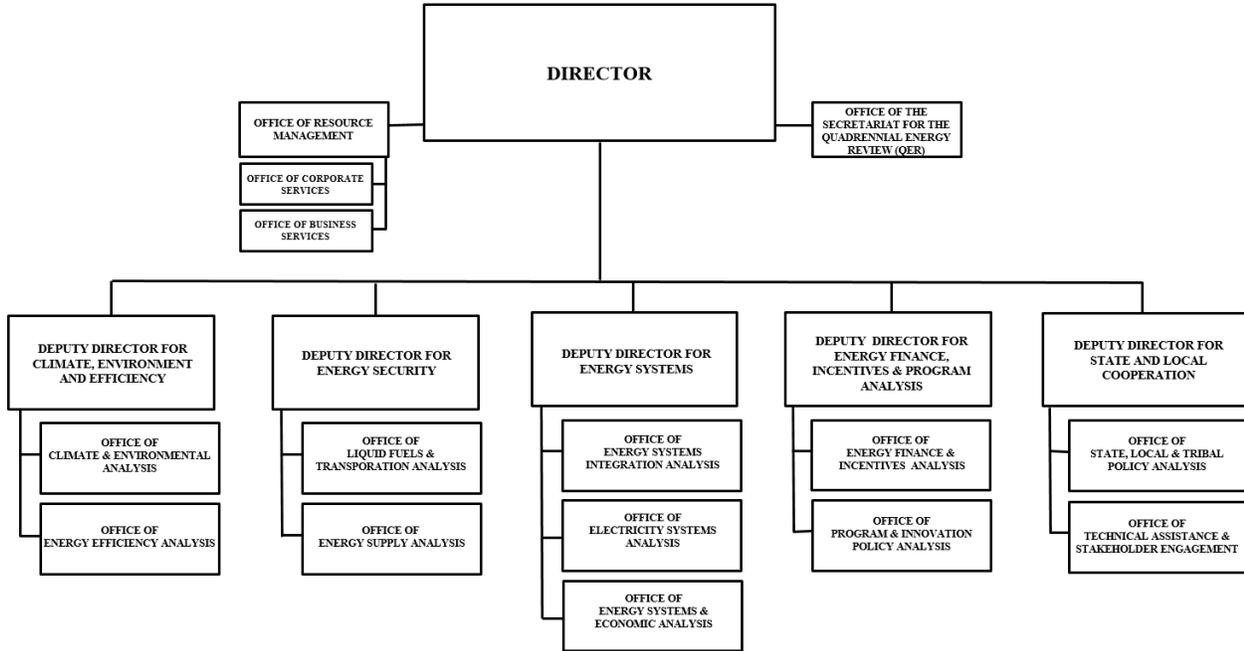
- Ensure the policy recommendations from QER 1.1 and 1.2 are tracked and executed. Define and execute the next installment of the QER (1.3).
- Maintain needed policy expertise and leadership in order to advise the Secretary on multiple cross department policy topics. This is challenging as EPSA is a new team and relied upon a number of contractor, term, and political employees. A key strategy is ensuring EPSA has the required number of staff with the necessary capabilities to perform the critical work.

### **Critical Events and Action Items**

- Publish the Energy Security Valuation Study – December 2016
- Publish of the second installment of the QER – by January 2017
- Release the Grid Security Strategy and Action Plan – before January 2017

**Organization Chart**

**ENERGY POLICY AND SYSTEMS ANALYSIS**



# Office of Enterprise Assessments

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 11:** Operate the DOE enterprise safely, securely, and efficiently.

### Organization Information

#### Name

Office of Enterprise Assessments (EA)

#### Address

1000 Independence Avenue SW,  
Washington, DC 20585

19901 Germantown Road  
Germantown, MD 20874

National Training Center  
Albuquerque, NM

#### Telephone Number

202-586-0271

#### Website

<http://www.energy.gov/ea/office-enterprise-assessments>

#### Point-of-Contact E-mail Address

[Glenn.Podonsky@hq.doe.gov](mailto:Glenn.Podonsky@hq.doe.gov)

#### Supporting the DOE Mission

EA, reporting directly to the Secretary of Energy, is organizationally independent of the DOE entities that develop and implement safety and security policy and programs, and can therefore objectively: 1) observe and report on the effectiveness of implementation of DOE policies and programs; 2) assess compliance with legally enforceable safety and security requirements; and 3) develop and deliver safety and security training programs that reflect best practices and lessons learned from EA assessments. EA activities complement, but do not replace, the responsibility of DOE line management - reporting through the Under Secretaries - to oversee compliance with safety and security requirements. In this way, EA activities serve as an important check-and-balance that assists the Department in meeting its responsibilities as a self-regulating entity.

## **Mission Statement**

EA is DOE’s autonomous organization responsible for performance of independent enterprise assessments, on behalf of the Secretary and Deputy Secretary, in the areas of nuclear and industrial safety; cyber and physical security; and other critical functions, as directed by the Secretary and his leadership team. The Office is responsible for implementing Congressionally-authorized enforcement functions in the areas of worker safety and health, nuclear safety, and classified information security. EA is also responsible for incorporating the lessons learned from inspections, reviews, and assessments into safety and security training courses through its management of the National Training Center (NTC).

## **Status**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$73.534 million
FY 2016 Enacted Budget	\$73.534 million
FY 2017 Budget Request	\$76.473 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 92

## **History**

In 2014, EA was established as an independent entity reporting directly to the Secretary. Previously, EA’s functions had been grouped in the organization that is also responsible for establishing safety and security policy. The functions performed by EA were separated from the policy-making organization to prevent any conflicts-of-interest, and to support the consolidation of mission support functions into the new Office of the Under Secretary for Management and Performance.

## **Functions**

EA’s primary functions include:

- Implementation of the Congressionally-authorized DOE enforcement program to promote overall improvement in the Department’s nuclear safety, worker safety and health, and classified information security programs.
- Managing the Independent Oversight Program, providing the Office of the Secretary, DOE and contractor managers, Congress, and other stakeholders with an independent enterprise evaluation of the adequacy of DOE policy and the effectiveness of line management performance in safeguards and security; cyber security; emergency management; environment, safety, and health; and other critical functions.
- Operation of the NTC, the Department’s designated Center of Excellence for Security and Safety Training and Professional Development, which establishes and provides training, education, and development activities for staff, management, and Departmental leadership in the areas of health, safety, and security, thereby strengthening the expertise available to meet the current and future mission needs of the Department.

## **Recent Organization Accomplishments**

- Performed approximately 20 announced and unannounced cyber security assessments of

DOE classified and unclassified information management systems to identify potential cyber security weaknesses which could lead to compromise of sensitive DOE information.

- Conducted approximately 20 comprehensive safeguards and security assessments, including force-on-force exercises and limited-notice safeguards and security performance tests, at DOE / NNSA sites with strategic levels of national security assets, and approximately 15 information security assessments of Special Access Programs and Sensitive Compartmented Information Facilities to provide assurances that national security assets entrusted to the Department were being protected from theft, sabotage, diversion, or loss.
- Conducted approximately 50 nuclear, worker safety and health, and emergency management assessments to identify weaknesses in DOE operations that could harm workers and the public. These activities included:
  - Assessments of high-hazard nuclear construction projects at the Hanford Site, Los Alamos National Laboratory, Savannah River Site, and Y-12 National Security Complex to ensure compliance with nuclear safety requirements as directed by Congress (Section 304);
  - Near-continuous oversight of the Waste Isolation Pilot Plant (WIPP) operations in support of resumption of operations;
  - Issuance of lessons learned reports regarding emergency management, activity level work planning and control, management of nuclear facility engineered safety systems, and delegations of authority for approval of nuclear facility safety basis authority; and
  - The completion of a Hanford Site Tank Farms Vapor Follow-Up Assessment to evaluate proposed technical solutions regarding vapor releases and worker exposures.
- Implemented DOE's nuclear safety, worker safety and health, and classified information security enforcement programs that provide a consistent and transparent method that held contractors accountable for compliance with DOE requirements and promote proactive improvements.
- Through the NTC:
  - Established the new DOE Training Institute in cooperation with the HAMMER Federal Training Center to provide DOE core occupational safety training and implement the reciprocity program.
  - Issued over 8,500 training completion certificates (equating to over 22,000 training hours) to DOE Federal and contractor employees through the NTC.
  - Certified over 27 courses from 15 DOE site / labor organizations under the reciprocity program, eliminating redundant training for over 50,000 employees.
  - Incorporated lessons learned and best practices identified in independent oversight assessments into existing NTC curricula.

### **Critical Events and Action Items**

#### **3 months**

- *WIPP Oversight* - EA will continue to conduct independent oversight activities as WIPP resumes operations.

**6 months**

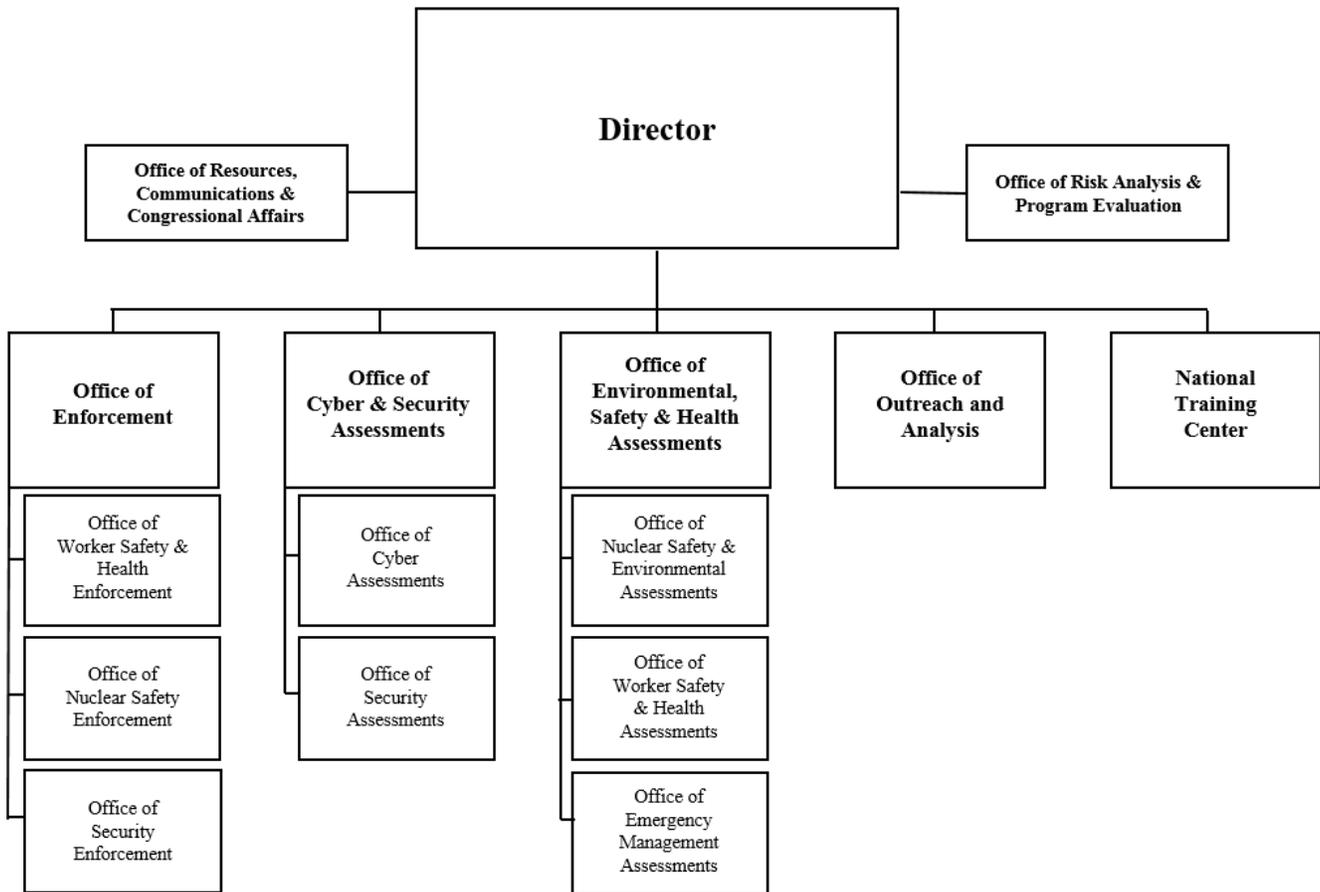
- *Hanford Site Tank Farms Vapor Follow-Up Assessment:* EA will issue an assessment report that evaluates the technical solutions that are proposed to address the vapor releases and worker exposures before the end of CY 2016.
- *WIPP Oversight* - EA will continue to conduct oversight activities as WIPP resumes operations.

**12 months**

- *WIPP Oversight* - EA will continue to conduct oversight activities as WIPP resumes operations.

**Organization Chart**

# Office of Enterprise Assessments



# Office of General Counsel

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### **Organization Information**

**Name:**

Office of the General Counsel (GC)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-5281

**Website:**

<http://www.energy.gov/gc/office-general-counsel>

**Point-of-Contact E-mail Address:**

[eric.fygi@hq.doe.gov](mailto:eric.fygi@hq.doe.gov)

### **Supporting the DOE Mission**

The Office of the General Counsel (GC) is responsible for providing comprehensive legal services to the Secretary, Deputy Secretary, and all Departmental elements, except the Federal Energy Regulatory Commission (FERC), and for effectively representing the Department as counsel before Federal, State, and other governmental agencies and courts. These services are intended to advance the missions and objectives of the Department through advice, negotiation, rulemaking, legislation, and, when necessary, litigation. GC is organized so as to provide each Departmental element (Fossil Energy, Science, etc.) with "program counsel" specifically skilled in its unique issues. Separate elements of GC provide specialized legal expertise for issues that affect many program offices, such as procurement, fiscal, regulatory, and environmental law.

## **Mission Statement**

GC is responsible for providing comprehensive legal services to the Secretary and the entire Department, except FERC. These services are intended to advance the missions and objectives of the Department through advice, negotiation, rulemaking, legislation, regulatory enforcement and, when necessary, litigation, and to ensure that the Department operates in compliance with all pertinent laws and regulations.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$31.0 million
FY 2016 Enacted Budget	\$33.0 million
FY 2017 Budget Request	\$33.0 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 145.

## **History**

The position of the General Counsel is established as a Senate-confirmed Presidential appointment in the Department of Energy Organization Act, Public Law 95-91, Section 202(e).

## **Functions**

### **Headquarters**

The Office of the General Counsel (Headquarters) is comprised of the Immediate Office of the General Counsel, four program area Deputy General Counsels supported by eleven Assistant General Counsels (AGCs), the Director of the Office of Standard Contract Management, the Director of the Office of NEPA Policy and Compliance, and their staff. The functions and responsibilities of these offices are summarized below. Greater detail on the responsibilities of each office described below is available from GC.

- ***Immediate Office of the General Counsel: General Counsel & Deputy General Counsel (GC-1).*** The General Counsel is ultimately responsible for stating what the law is for guidance of all Departmental elements and officials. To do so, he or she directs, manages, and supervises all DOE activities conducted by GC. In this connection, general functions and responsibilities undertaken by the General Counsel include establishing policies, issuing guidance, defining procedures, and rendering decisions pertaining to the General Counsel's areas of responsibility, including but not limited to providing counsel to the Secretary and to senior DOE officials; ensuring the provision of adequate legal support and services to DOE's program areas; representing DOE in legal matters, as required; and, overseeing the performance of legal services by the Chief Counsel and Chief Patent Counsel of each of the Field Offices.

- ***Deputy General Counsel for Litigation, Regulation and Enforcement (GC-30).*** The Deputy General Counsel for Litigation, Regulation, and Enforcement directs, manages, and supervises the Department's activities and functions assigned to the AGC for Litigation (GC-31), the AGC for Legislation, Regulation and Energy Efficiency (GC-33), and the AGC for Enforcement (GC-32). The AGC for Legislation, Regulation and Energy Efficiency (GC-33) serves as program counsel for the Office of Energy Efficiency and Renewable Energy (EERE) and the Office of Congressional and Intergovernmental Affairs (CI), and regulatory counsel for the Department.

Many of the major functions and responsibilities of these AGCs and their offices involve: directing the agency's participation in litigation in which the Department is a party (which is almost all conducted by the Department of Justice) as well as its activities and functions with respect to the Department's contractors' litigation (which is conducted by contractor-retained counsel); promoting compliance with and prosecuting violations of and promoting compliance with DOE regulations promulgated under the Energy Policy and Conservation Act; providing for internal DOE review of all DOE legislative proposals and obtaining Office of Management and Budget (OMB) clearance of these proposals; acting as the DOE contact point with OMB on all non-budget legislative matters; participating in the analysis and formulation of DOE positions and comments on enrolled bills and other agencies' proposed regulations, legislative matters, and testimony; and providing legal advice on administrative law and Executive Orders applicable to rulemaking, including legal review of draft regulations. A paper entitled, "GC's Role as Liaison with the Office of Management and Budget Concerning Executive Branch Testimony, Legislative Proposals, Significant Regulatory Actions and Significant Guidance Documents," is available from GC. This paper describes in detail GC's role as DOE's liaison with OMB for review of: (1) communications with Congress, including testimony and legislative proposals of other Executive Branch agencies (Congressional testimony to be given by DOE officials is handled by the Office of Congressional and Intergovernmental Affairs); and (2) Significant Regulatory Actions and Significant Guidance Documents under Executive Order 12866, Regulatory Planning and Review.

- ***Deputy General Counsel for Environment and Compliance (GC-50).*** The Deputy General Counsel for Environment and Compliance directs, manages, and supervises the activities and functions assigned to the AGC for Environment (GC-51), the AGC for International and National Security Programs (GC-53), the AGC for General Law (GC-56), and the Director of the Office of NEPA Policy and Compliance (GC-54). These offices serve as program counsel for the Offices of Environmental Management (EM); Legacy Management (LM); Environment, Health, Safety and Security (AU); Enterprise Assessments (EA); Intelligence and Counterintelligence (IN); Policy & International Affairs (PI); Management (MA) (on non-procurement matters); Economic Impact and Diversity (ED); the Energy Information Administration (EIA); Chief Financial Officer (CFO); Human Capital Management (HC); the Chief Information Officer (CIO); and Public Affairs (PA).

Many of the major functions and responsibilities of these AGCs and their offices involve providing legal advice regarding: environmental protection; compliance with the National Environmental Policy Act and other applicable environmental protection laws, regulations, federal facility agreements, and other requirements; interactions with the Defense Nuclear Facilities Safety Board; defense and nuclear nonproliferation programs, including negotiating

and drafting international agreements as appropriate; security, intelligence, and counterintelligence matters; international agreements relating to international science and technology cooperation, international trade, and investment activities, and other Departmental programs involving international cooperation; serving as DOE's Designated Agency Ethics Official (AGC for General Law) and managing the Department's ethics program for Federal employees; and providing legal services and review in connection with issues concerning the Freedom of Information Act (FOIA), the Privacy Act, records management, the Federal Advisory Committee Act (FACA), property, equal opportunity, personnel and appropriations law, and DOE's organizational structure.

- ***Deputy General Counsel for Transactions, Technology, and Contractor Human Resources (GC-60).*** The Deputy General Counsel for Transactions, Technology, and Contractor Human Resources directs, manages, and supervises the activities and functions assigned to the AGC for Procurement and Financial Assistance (GC-61), the AGC for Technology Transfer and Intellectual Property (GC-62), and the AGC for Contractor Human Resources (GC-63). The major functions and responsibilities of the GC-61 office include: providing legal advice regarding DOE programs and functions involving procurement, financial assistance, and other transactions law, regulations, policies, and activities; providing legal advice regarding source selection strategies and processes for major procurement actions throughout the DOE complex; managing and directing the defense of DOE procurement actions, including solicitations, competitive range decisions, and contract awards when such actions are protested to the Government Accountability Office; representing DOE in connection with contract disputes before the Civilian Board of Contract Appeals and providing assistance to the Department of Justice in connection with litigation relating to DOE contract cases; assisting in drafting, negotiating, and reviewing DOE solicitation documents and contracts including procurement contracts, interagency agreements, funding opportunity announcements, grants, cooperative agreements, and technology investment agreements; advising the Office of Project Management and Assessments, the Project Management Risk Committee, and the Energy Systems Acquisition Advisory Board on DOE project matters; and advising the Office of Small and Disadvantaged Business Utilization on issues related to the Department's small business achievement. The major functions and responsibilities of the GC-62 office include: providing legal advice regarding DOE programs involving intellectual property and technology transfer laws, regulations, policies, and issues, including the formulation of DOE's patent policy, and the representation of DOE's interests in intellectual property and technology transfer matters, including patents, trademarks, copyrights, trade secrets, and related matters. GC-62 also coordinates the activities of field patent counsel regarding intellectual property and technology transfer matters. The major functions and responsibilities of the GC-63 office include: providing legal advice pertaining to DOE contractor labor standards; labor relations; workforce restructuring; employee pensions and other benefits and compensation; and other related issues as necessary, as well as providing policy support on contractor labor standards, labor relations, and workforce restructuring issues. GC-63 reviews and provides advice regarding Congressional inquiries and proposed legislation and rulemakings to revise the Federal Acquisition Regulation, as well as rulemakings initiated by DOE to revise the Department of Energy Acquisition Regulation. GC-63 also assists and provides advice in the drafting and reviewing of DOE solicitation documents with respect to contractor human resource matters. GC-63 is the Department's primary point of contact with the Department of Labor and contested labor

standards determinations must be submitted to GC-63 before the Department of Labor will regard them as final. The AGC for GC-63 also serves as the Department's Labor Compliance Advisor for purposes of Executive Order (EO) 13673, "Fair Pay and Safe Workplaces," and is primarily responsible for implementation of the Order within the agency and for promoting awareness of and respect for the importance of labor law compliance through interactions with senior agency officials, contracting officers, and contractors.

- ***Deputy General Counsel for Energy Policy (GC-70).*** The Deputy General Counsel for Energy Policy directs, manages and supervises the activities and functions assigned to the AGC for Electricity and Fossil Energy (GC-76), the AGC for Civilian Nuclear Programs (GC-72), and the Director of the Office of Standard Contract Management (GC-73). These offices serve as program counsel to the Office of Fossil Energy, the Office of Electricity Delivery and Energy Reliability, the Office of Nuclear Energy, the Office of Indian Energy Policy and Programs, the Office of Energy Policy and Systems Analysis, and the Office of Science.

Many of the major functions and responsibilities of AGC offices GC-72 and GC-73 involve: DOE programs to manage, store, and dispose of nuclear waste and spent nuclear fuel, including matters relating to licensing and development of a repository at Yucca Mountain; DOE programs for nuclear energy fuel cycle activities; nuclear liability matters, including the Price-Anderson Act, indemnification under Public Law 85-804; DOE regulatory and NRC licensing authority under the Atomic Energy Act; agreements and initiatives relating to domestic science and technology cooperation; and the core functions established by the Nuclear Waste Policy Act of 1982 (NWPA), as amended, that pertain to the Nuclear Waste Fund and the management of the Standard Contracts for the Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR 961) with Government and nuclear utilities; review of annual settlement claims for damages due to the partial breach of the Standard Contracts; and support of the Department of Justice in the negotiations of new settlements, extensions of existing settlements, and as the primary factual witness for DOE in litigation related to the Standard Contracts.

The AGC for Electricity and Fossil Energy (GC-76) provides legal advice and counsel in connection with DOE's fossil energy programs, including the Strategic Petroleum Reserve; Naval Petroleum Reserves; Home Heating Oil Reserves; clean coal research and demonstration programs; and imports and exports of natural gas. GC-76 attorneys also work closely with the staff of the Office of Fossil Energy in drafting opinions and orders in response to applications for authorization under section 3 of the Natural Gas Act to import or export natural gas, including liquefied natural gas (LNG).

GC-76 also serves as program counsel for DOE's electricity and non-nuclear emergency preparedness programs, which are primarily handled by the Office of Electricity Delivery and Energy Reliability. The programs involve critical infrastructure protection and cyber security; energy emergency authorities; transmission planning, electricity exports and Presidential Permits; and advanced grid research and development. This office advised on the first use of the Energy Policy Act of 2005 section 1222 program for public-private transmission line development.

In addition to its roles as program counsel, GC-76 advises the General Counsel on Power Marketing Administration (PMA) legal matters, reviews PMA rate orders, and works with

PMA counsel; represents DOE facilities in electric and gas utility rate cases before state public utility commissions; and represents the Department in FERC proceedings when transmission, generation, or reliability matters affecting the PMAs or DOE facilities arise.

## Field

The Department employs a complement of lawyers who work in the field, including Chief Counsel, Chief Patent Counsel, Power Marketing Administration General Counsel, and their staffs.

- **Chief Counsel.** There is a Chief Counsel at the majority of DOE field offices. Where there is no legal staff at a field office, those offices are serviced by Chief Counsel at other field offices or at Headquarters. Chief Counsel at the following offices are employees of their respective offices but are supervised by a Headquarters Deputy General Counsel: Chicago, Environmental Management Consolidated Business Center, Golden, Idaho, National Energy Technology Laboratory, Oak Ridge, Richland, Savannah River, and Strategic Petroleum Reserve. This supervision includes preparation of performance evaluations with input from the respective offices. Chief Counsel also have day-to-day client relationships with the field managers and staff at the offices where they are located.

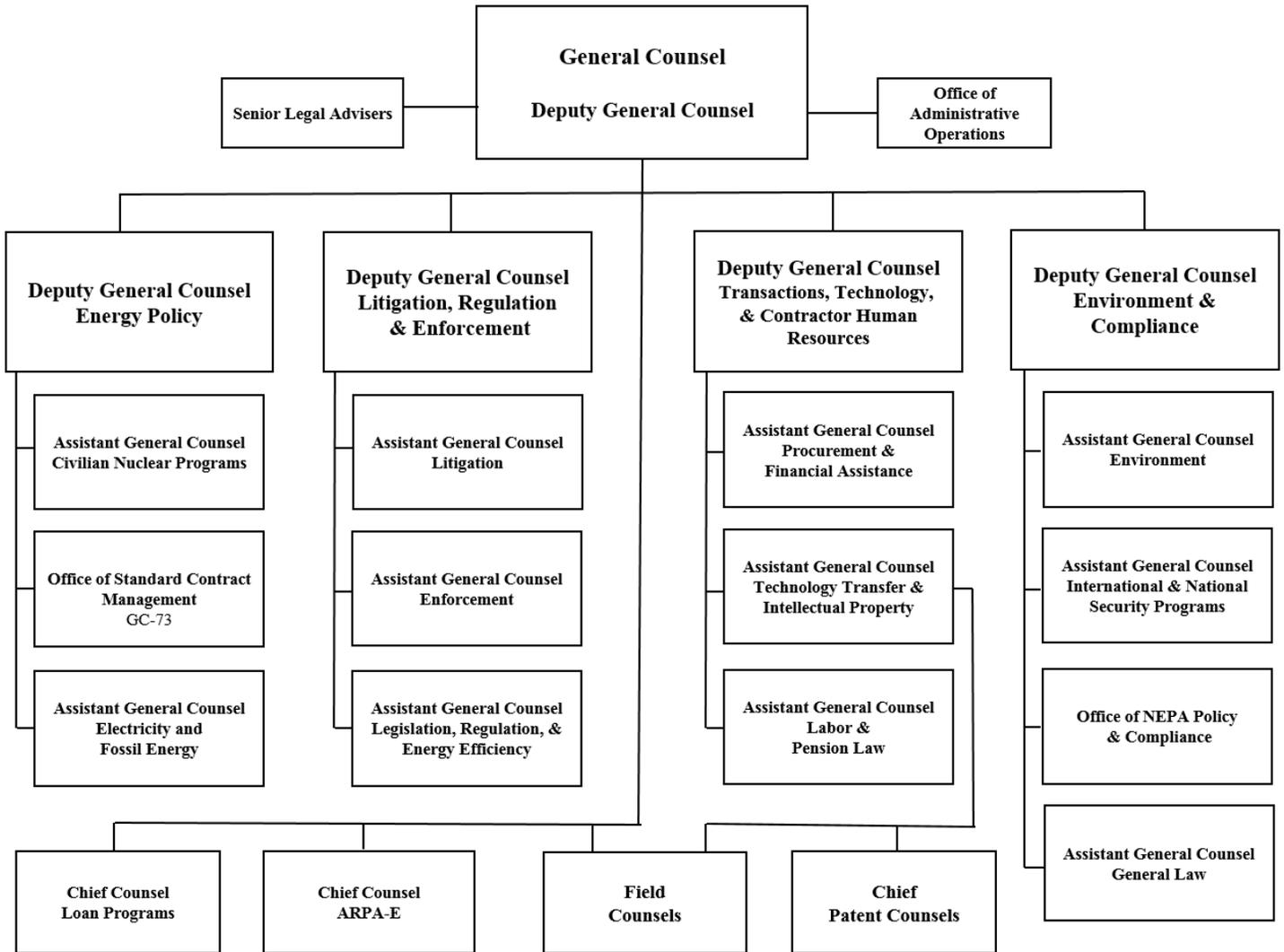
The Chief Counsel of ARPA-E and the Loan Program Office are employees of their respective offices, but are supervised by the Principal Deputy General Counsel. This supervision includes preparation of performance evaluations with input from the respective offices.

All of these Chief Counsel have access to the General Counsel whenever they require.

- **Chief Patent Counsel.** Chief Patent Counsel are responsible professionally to the AGC for Technology Transfer and Intellectual Property, pursuant to the guidance and direction of the General Counsel, but are supervised by a Chief Counsel. The AGC for Technology Transfer and Intellectual Property ensures that the necessary professional consultation occurs with the Chief Patent Counsel through a variety of means, including monthly conference calls with all the Chief Patent Counsel, and an annual Chief Patent Counsel meeting. Although not specified in Departmental guidance, both the AGC for Technical Transfer and Intellectual Property and the Chief Counsel have a role in the selection and evaluation of Chief Patent Counsel.
- **Power Marketing Administration General Counsel.** Each of the four Power Marketing Administrations (PMA) has a General Counsel. The Deputy General Counsel for Energy Policy ensures that appropriate GC offices interact as appropriate with PMA General Counsel to ensure that the PMAs, as components of the Department, receive adequate legal services where necessary, that appropriate professional consultation occurs, and that there is consistency in legal interpretations between GC HQ and the PMAs.
- **Critical Operating Procedures.** GC is the law department of a complex, nationwide enterprise and does not have written operating procedures that describe the substance of its general professional oversight. Operating procedures regarding approval of contractor litigation costs appear in the relevant contracts. Procedures regarding litigation and other cost exposures are specified by the Chief Financial Officer's independent auditors.

**Organizational Chart**

**GENERAL COUNSEL**



# Office of Inspector General

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

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

### **Organization Information**

#### **Name:**

Office of Inspector General (OIG)

#### **Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

#### **Telephone Number:**

202-586-1818

#### **Website:**

<http://www.energy.gov/ig/office-inspector-general>

#### **Point-of-Contact E-mail Address:**

[tara.porter@hq.doe.gov](mailto: tara.porter@hq.doe.gov)

### **Supporting the DOE Mission**

The *Inspector General Act of 1978*, as amended, established an independent statutory Inspector General (IG) at the Department of Energy that is responsible for:

- Conducting independent and objective audits, investigations, and other reviews of Department programs and operations;
- Promoting economy, efficiency, and effectiveness in the administration of Department programs;
- Preventing and detecting fraud, waste, abuse, and mismanagement related to Department programs and operations; and
- Informing the Secretary and Congress about problems and deficiencies in Department programs and operations and the need for corrective action.

As an independent reviewer of the activities of the Department, the Office of Inspector General (OIG) operates under its own strategic plan, goals, and measures. However, because the OIG issued a new strategic plan in fiscal year (FY) 2015, only 1 year of data is available for the following measures:

- **Goal 1** – Provide independent, accurate, timely, and balanced information to the Department, Congress and other key stakeholders in order to promote economy and efficiency in Department programs and operations.

Performance Measures	FY 2015	FY 2016	FY 2017
1.1 Percentage of reports issued with recommendations/suggestions.	Target: 40%	Target: 70%	Target: 70%
	Actual: 81%		
1.2 Percentage of recommendations accepted.	Target: 85%	Target: 85%	Target: 85%
	Actual: 96%		
1.3 Percentage of final reports issued within 60 days of receipt of management comments.	Target: 80%	Target: 80%	Target: 80%
	Actual: 98%		

- **Goal 2** – Work with the Department, prosecutors, and others to hold recipients and overseers of Department funds accountable for actions that result in fraud, waste and/or abuse.

Performance Measures	FY 2015	FY 2016	FY 2017
2.1 Number of fraud awareness briefings conducted to educate and inform Department employees, contractors, and fund recipients.	Target: 47	Target: 48	Target: 50
	Actual: 67		
2.2 Average number of days to issue an Investigative Report to Management.	Target: 44	Target: 43	Target: 43
	Actual: 32		
2.3 Percentage of cases presented for prosecutorial consideration that are accepted for further action.	Target: 76%	Target: 78%	Target: 77%
	Actual: 77%		
2.4 Average number of days by which hotline complaints are referred to responsible entities following a disposition decision.	Target: 16	Target: 15	Target: 15
	Actual: 7		

- **Goal 3** – Build and maintain an efficient and effective organization that fulfills its mission and maintains a highly qualified diverse workforce.

Performance Measures	FY 2015	FY 2016	FY 2017
3.1 Percentage of required employee performance management system actions conducted within prescribed timeframes.	Target: 91.0%	Target: 91.5%	Target: 92.0%
	Actual: 99.6%		
3.2 Percentage of Individual Development Plans established within prescribed timeframes.	Target: 93.0%	Target: 93.5%	Target: 94.0%
	Actual: 99.3%		
3.3 Percentage of employees completing mandatory training within prescribed timeframes.	Target: 98.0%	Target: 98.0%	Target: 98.0%
	Actual: 99.7%		
3.4 A positive return for each tax dollar invested in OIG activities.	Target: \$3.15	Target: \$3.75	Target: \$4.00
	Actual: \$8.29		

Historical information on our performance can be found in the OIG [Combined Annual Performance Results and Performance Plan](#) reports.

### **Mission Statement**

To strengthen the integrity, economy, and efficiency of the Department’s programs and operations.

### **Budget**

Fiscal Year	Budget
FY 2015 Enacted Budget	\$40.5 million
FY 2016 Enacted Budget	\$46.4 million
FY 2017 Budget Request	\$44.4 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 279

A significant number of OIG employees hold professional certifications (e.g., certified public accountant, certified fraud examiner, certified internal auditor, certified information systems auditor) and are required, under State and Federal rules, to receive developmental and refresher training in order to maintain their competencies and carry out their job-specific functions.

- **Facilities and FTE**
  - Washington, DC – 69
  - Germantown, MD – 15
  - Pittsburgh, PA – 22

- Oak Ridge, TN – 48
- Savannah River, SC – 15
- Chicago, IL – 9
- Denver, CO – 15
- Albuquerque, NM – 31
- Los Alamos, NM – 3
- Las Vegas, NV – 7
- Livermore, CA – 23
- Idaho Falls, ID – 8
- Richland, WA – 12

## **History**

Federal IGs are authorized to combat waste, fraud, and abuse within their affiliated Federal entities. As part of their mission, OIGs conduct and publish audits and investigations, among other duties. Two major enactments, the *Inspector General Act of 1978* and its amendments in 1988, established Federal OIGs as permanent, nonpartisan, and independent entities in more than 70 Federal agencies. OIGs serve to assist Congress in overseeing executive branch agencies and provide recommendations and findings to their affiliated agency head and to Congress. These recommendations have the potential to save the Government millions of dollars every year.

Congress is currently considering implementation of the *Inspector General Empowerment Act of 2016* (H.R. 2395 and S. 579), which the House of Representatives unanimously adopted on June 21, 2016. This act would amend the *Inspector General Act of 1978* by expanding the investigatory powers of Federal IGs.

## **Functions**

The OIG is responsible for conducting audits, inspections and investigations and for receiving and acting upon allegations received through the Office of Inspector General Hotline.

- **Audits** are conducted on Department programs and operations. Efforts are concentrated on providing reliable and credible financial and performance information to senior management, Congress and the U.S. taxpayer. A risk-based process is used to identify areas for audit coverage based on known or emerging risks and the greatest vulnerabilities. This process ensures comprehensive coverage over Department organizations, programs and operations while meeting the Department's evolving needs. Audit resources are also directed toward meeting statutory audit responsibilities in the financial and information technology areas.
- **Inspections** focus on allegations received from the OIG Hotline, special inquiries raised by Congress or senior Department officials, and performance issues. Efforts are concentrated on management reform within the Department by evaluating and providing recommendations to improve program performance. The Inspection function is designed to promptly address concerns and allegations received during the course of the year. Inspection priorities are based on the significance of the issue and the potential impact on Department programs and operations.

- **Investigations** address alleged violations of law that impact Department programs, operations, facilities and personnel. Priority is given to investigations of suspected violations of criminal and civil statutes, as well as serious administrative misconduct. Investigations are also used to identify opportunities for improving the economy and efficiency of Department programs and operations by identifying recommendations for positive change. Investigators work closely with Department of Justice prosecutors and other Federal, State, and local law enforcement organizations.
- **Allegations** are received through the OIG Hotline. The Hotline facilitates the reporting and resolution of allegations involving Department programs and activities. Allegations are received from Department employees, contractors and the general public. In addition, whistleblower disclosures made by employees and contractors help root out fraud, waste, and abuse, and protect public health and safety. The OIG Whistleblower Ombudsman educates Department employees about prohibitions on retaliation for whistle blowing, as well as employees' rights and remedies if anyone retaliates against them for making a whistleblower disclosure.

Congress has mandated specific functions be carried out by OIGs. The list of specific functions required under various statutes can be found in [Attachment 1](#) to this document.

### **Recent Organization Accomplishments**

The following reflects the 3-year average of the OIG's most significant quantifiable accomplishments:

- **Return on Investment** – \$13.06
- **Better Use of Funds**<sup>1</sup> – \$53.2M
- **Questioned Costs**<sup>2</sup> – \$435.73M
- **Unsupported Costs**<sup>3</sup> – \$12.1M
- **Fines/Settlements/Recoveries** – \$26.3M
- **Audit and Inspection Reports Issued** – 92
- **Criminal Convictions** – 20
- **Suspension and Debarments**<sup>4</sup> – 48
- **Civil/Administrative Actions** – 60
- **Hotline Complaints Received** – 3,506
- **Investigative Recommendations to Management** – 84
- **Recipients of OIG Fraud Awareness Briefings** – 2,614

In addition to quantifiable accomplishments, the OIG has significant non-monetary or non-quantifiable impacts in the areas of health and safety, employee concerns, and security. Some specific examples of recent work in this area include:

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<sup>1</sup> Funds that could be used more efficiently by implementing actions recommended by the OIG.

<sup>2</sup> A cost that is believed to be unnecessary, unreasonable, or an alleged violation of law, regulation, contract, etc.

<sup>3</sup> A cost that is not supported by adequate documentation.

<sup>4</sup> The suspension and debarment process protects the Federal Government from fraud, waste, and abuse by using a number of tools to avoid doing business with non-responsible entities.

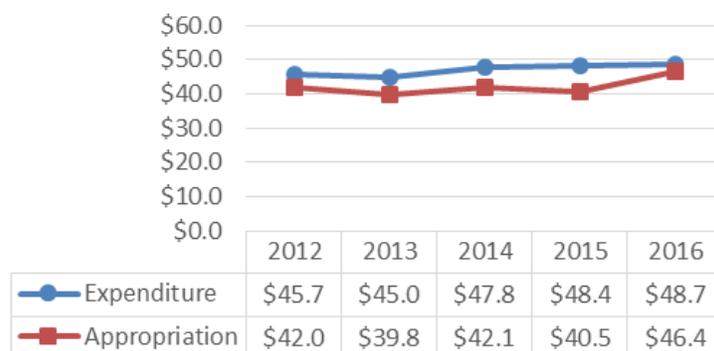
- [\*Issues Management at the Los Alamos National Laboratory \(DOE-OIG-16-07\)\*](#), which disclosed significant weaknesses in the Laboratory's corrective action program to address environmental, safety and health concerns.
- [\*Worker Safety and Health at the Y-12 National Security Complex \(OAI-L-16-06\)\*](#), which addressed allegations concerning safety and reprisal from management.
- [\*Security Improvements at the Y-12 National Security Complex \(DOE/IG-0944\)\*](#), which concluded that Y-12 had not developed a comprehensive method for managing and integrating the site's security and access control systems.
- *Former Management and Operating Contractor Investigation*, which identified a former contractor dumped waste contaminated with trichloroethylene into storage areas at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky hiding the activity from Department and environmental regulators.

Information on all of our work can be found in our [\*Semiannual Reports to Congress\*](#).

### **Leadership Challenges**

- **Permanent Inspector General** – In October 2015, the Department's IG retired after 17 years of service in that position. The President's nomination for a new Inspector General, Susan Beard of the Department's Office of the General Counsel, was submitted to the Senate Committee on Energy and Natural Resources in April 2016, and a hearing was held in May 2016. Once the nomination is approved by the Committee on Energy and Natural Resources, it will be referred to the Senate Committee and Homeland Security and Government Affairs. However, as of the issuance of this document, Senator Barrasso (R-WY) has opposed the nomination due to the Department's practice of bartering excess uranium and the nominee's involvement in some of the legal aspects of the issue. It is uncertain when the Committee on Energy and Natural Resources will hold a vote on the nomination, but given the expected departure of the Acting IG and both Deputy IGs by December 2016, the absence of a permanent IG is increasingly significant.
- **Funding** – The OIG, like many organizations within the Department, received no-year funds through FY 2013. No-year funds remain available until expended by the organization. However, beginning in FY 2014, the funds appropriated to the OIG were designated as 2-year funds, which are only available for 2 years. The prior existence of the no-year funds allowed the OIG to use these prior year funds to fund mission critical actions during each of the last 5 years. As a result, the OIG expended more funds to perform required reviews and oversight than it received from Congress in its annual appropriation. In order to continue operations at current levels, it is critical that the FY 2018 appropriation reflects the OIG's actual expenditure level rather than past appropriation levels.

## 5 Year Budget Trend



### Key Strategies

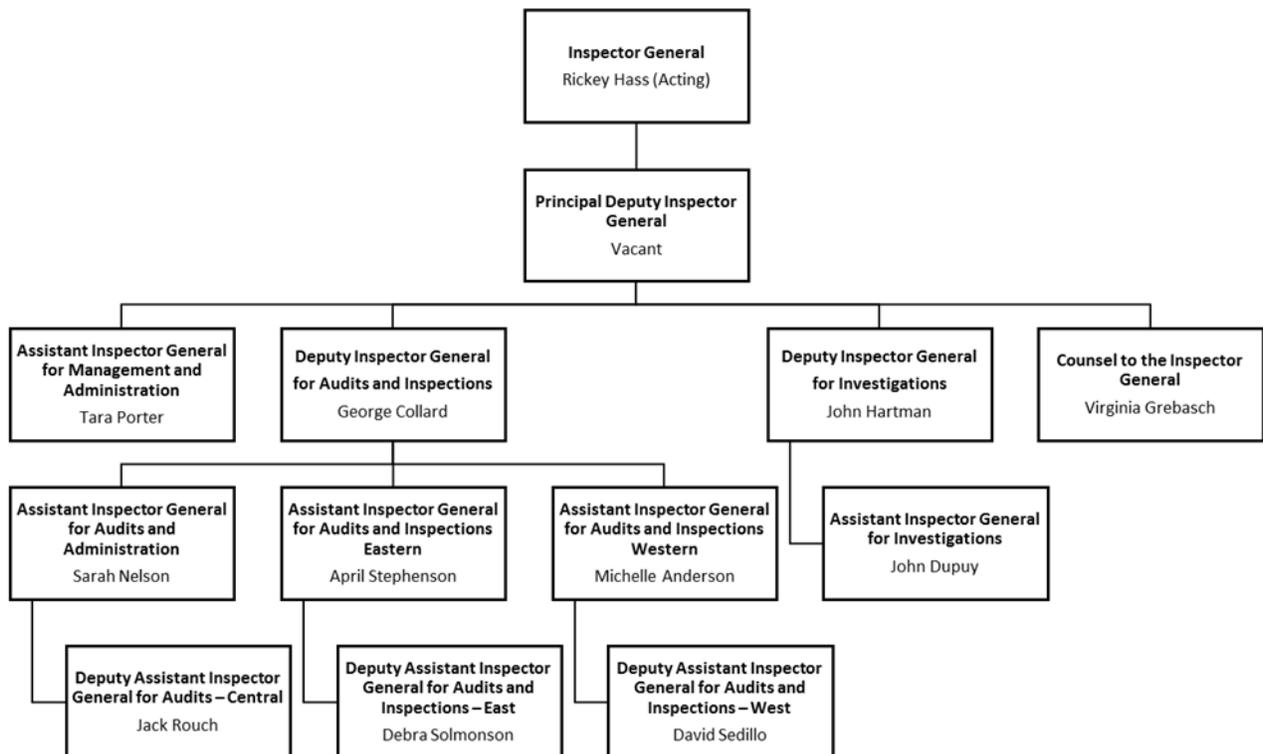
- Risk Management** – The Department’s mission to ensure security and prosperity by addressing energy, environmental, and nuclear challenges is one of the broadest in the Federal Government. The Department’s mission continues to expand as it takes on new guaranteed loan programs to promote renewable energy. In addition, the mission becomes more complex as the nation’s nuclear stockpile continues to age. As a result of duplicative functions that exist throughout the organization, the Department is currently facing significant operational challenges. These additional challenges create increased oversight responsibilities for the OIG. In order to meet the additional oversight responsibilities and maintain current operational levels, the OIG uses a risk-based approach to focus its finite resources on those areas within the Department that have the greatest impact on the security and prosperity of the country.
- Cooperative Audit Strategy** – The OIG, in consultation with the Chief Financial Officer, the Office of Acquisition and Project Management, and the Contractor Internal Audit Council, developed and implemented the Cooperative Audit Strategy in October 1992 to maximize the overall audit coverage at management and operating (M&O) contractors and to fulfill its responsibility for auditing the costs incurred by the Department’s major facilities contractors. The Cooperative Audit Strategy enhances the Department’s efficient use of available audit resources by allowing the Department to rely on the work of contractor internal audit activities. The Cooperative Audit Strategy has been implemented at most major contractor locations.
- Management Challenges** – The OIG annually identifies what it considers the Department’s most significant management challenges. The overall goal is to focus attention on significant issues in order to enhance the effectiveness of programs and operations. While the FY 2016 challenge areas remain largely consistent with those in previous years, the OIG has made a few notable changes in emphasis based on the results of its work over the last year. As a result, the FY 2016 management challenges include the following:

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

**Critical Events and Action Items**

- **Issue Opinion on Financial Statement Audit** – November 2016
- **Issue Federal Information Security Modernization Act Report** – November 2016
- **Issue Semiannual Report to Congress** – November 2016
- **Issue FY 2017 Management Challenges Report** – December 2016
- **Issue Semiannual Report to Congress** – May 2017

**Organization Chart**



**Attachment 1** - Congress has mandated that the following functions be performed by OIGs:

Date	Statute	Title	Requirements	Associated Public Reports
1994	Public Law 103-356	<i>Government Management Reform Act (GMRA) of 1994</i>	GMRA requires that all major Federal departments and agencies prepare a financial statement covering all accounts and associated activities of each office, bureau, and activity in the agency. The statement is audited by the agency's <i>Office of Inspector General</i> .	<ul style="list-style-type: none"> <li>• <a href="#">Department's FY 2015 Consolidated Financial Statements</a></li> <li>• <a href="#">Federal Energy Regulatory Commission's FY 2015 Financial Statement Audit</a></li> <li>• <a href="#">FY 2015 Financial Statements of the Nuclear Waste Fund</a></li> <li>• <a href="#">FY 2014 Combined Financial Statements of the Southwestern Federal Power System</a></li> <li>• <a href="#">FY 2015 Combined Financial Statements of the Western Area Power Administration</a></li> <li>• <a href="#">Management Letter on the Audit of the Department's Consolidated Financial Statements for FY 2015</a></li> </ul>
2000	Public Law 106-531	<i>Reports Consolidation Act of 2000</i>	Annually, the <i>Office of Inspector General</i> summarizes what it considers to be the most serious management and performance challenges facing the agency and briefly assesses the agency's progress in addressing those challenges.	<a href="#">Management Challenges at the Department - FY 2016</a>
2009	Public Law 111-5	<i>American Recovery &amp; Reinvestment Act (ARRA) of 2009</i>	Under Section 1553 of ARRA, the <i>Office of Inspector General</i> investigates complaints of whistleblower reprisal relating to ARRA disclosures made by non-Federal employees.	

Date	Statute	Title	Requirements	Associated Public Reports
2010	Public Law 111-204	<i>Improper Payments Elimination and Recovery Act of 2010</i>	The <b><i>Inspector General</i></b> of each agency must determine annually whether the agency is in compliance with the act and issues a report on that conclusion.	<a href="#">Audit of the Department's Improper Payment Reporting in the FY 2015 Agency Financial Report</a>
2010	Public Law 111-258	<i>Reducing Over-Classification Act</i>	By September 30, 2016, the <b><i>Inspector General</i></b> must conduct no less than two evaluations: (1) to assess whether applicable classification policies, procedures, rules, and regulations have been adopted, followed, and effectively administered within the department, agency, or component; and (2) to identify policies, procedures, rules, regulations, or management practices that may be contributing to persistent misclassification of material within the department, agency, or component.	<a href="#">Review of Controls Over Department's Classification of National Security Information</a>
2012	Public Law 112-194	<i>Government Charge Card Abuse Prevention Act of 2012</i>	The <b><i>Inspector General</i></b> of each executive agency that spends more than \$10 million in travel card disbursements must conduct periodic audits or reviews of travel card programs to analyze the risks of illegal, improper, or erroneous purchases and payments. The <b><i>Inspector General</i></b> must also submit to the Office of Management and Budget (OMB) a semiannual report, conducted jointly with the agency, describing any violations of the purchase card program and actions taken as a result of the violations.	Every January, the OIG completes an annual risk assessment and issues a memorandum to OMB covering the prior fiscal year. The memorandum will state whether the risk assessment resulted in the need to perform an audit during the following fiscal year.

Date	Statute	Title	Requirements	Associated Public Reports
2012	Public Law 112-199	<i>Whistleblower Protection Enhancement Act of 2012</i>	Each <i>Inspector General</i> must designate a Whistleblower Protection Ombudsman who is responsible for educating agency employees about prohibitions on retaliation for protected disclosures, and for educating agency employees who have made or are contemplating making a protected disclosure about the rights and remedies against retaliation for protected disclosures.	
2012		<i>Presidential Policy Directive (PPD) 19 Protecting Whistleblowers with Access to Classified Information</i>	PPD-19 prohibits (1) retaliation against employees serving in the Intelligence Community and (2) reprisal actions affecting an employee's security clearance. This directive requires the <i>Office of Inspector General</i> to conduct a review to determine if a personnel action violated PPD-19.	
2013	Public Law 112-239	<i>National Defense Authorization Act of 2013</i>	As of July 1, 2013, contractor, subcontractor, and grantee whistleblowers can file retaliation complaints with the relevant <i>Office of Inspector General</i> , which must then conduct an investigation and make recommendations to the respective agency head.	

Date	Statute	Title	Requirements	Associated Public Reports
2013	Public Law 113-6	<i>2014 Omnibus Appropriations Act</i>	The agency must submit annual reports to the <i>Inspector General</i> on the costs and contracting procedures for each conference held during a fiscal year in which the cost for conferences was more than \$100K.	The OIG performs an annual risk assessment of conference costs and, as a result of the risk assessment, decides whether to perform an audit in the following fiscal year. Work papers are prepared with the conclusion, but no report or memorandum on the results of the annual risk assessment is required.
2014	Public Law 113-101	<i>Digital Accountability and Transparency Act (DATA) of 2014</i>	The <i>Inspector General</i> must review a statistically valid sampling of the spending data submitted according to the act by the agency and issue a report every other year assessing the completeness, timeliness, quality, and accuracy of the data sampled, as well as the implementation and use of data standards by the agency.	The OIG will issue a report on the Department's implementation of the DATA. The required issue date for this report has been delayed until November 2017. The OIG plans to issue an interim report on the Department's DATA readiness in late 2016.
2014	Public Law 107-347	<i>Federal Information Security Modernization Act (FISMA) of 2014</i>	FISMA directs Federal agencies to conduct annual information technology security reviews. <i>Inspectors General</i> are required to perform annual independent evaluations of agency programs and systems and to report their findings to OMB and Congress.	<ul style="list-style-type: none"> <li>• <a href="#">The Department's Unclassified Cybersecurity Program - 2015</a></li> <li>• <a href="#">Federal Energy Regulatory Commission's Unclassified Cybersecurity Program - 2015</a></li> <li>• <a href="#">Information Technology Management Letter on the Audit of the Department's Consolidated Balance Sheet for FY 2015</a></li> </ul>

<b>Date</b>	<b>Statute</b>	<b>Title</b>	<b>Requirements</b>	<b>Associated Public Reports</b>
2016	Public Law 114-117	<i>Grants Oversight and New Efficiency Act of 2016</i>	The <b><i>Inspector General</i></b> of Federal agencies awarding more than \$500 million in annual grant funding is required to conduct a risk assessment of the agency's grant closeout process.	The risk assessment is due in 2020.
2016	Public Law 114-53	<i>Cybersecurity Act of 2015</i>	Within 240 days of the date of enactment of this act, the <b><i>Inspector General</i></b> must submit a report regarding the Federal computer systems of the covered agency.	The OIG is planning to issue the required report by August 2016.

# Office of Intelligence and Counterintelligence

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

Strategic Objective 6: Reduce global nuclear security threats.

### Organization Information

**Name:**

Office of Intelligence and Counterintelligence (IN)

**Address:**

1000 Independence Avenue SW  
Washington, DC 20585

Staff located throughout DOE field sites.

**Telephone Number:**

202-586-2610

**Website:**

<http://energy.gov/office-intelligence-and-counterintelligence>

**Point-of-Contact E-mail Address:**

(b)(3) [@doe.gov](mailto: @doe.gov)

*Note: This overview is entirely unclassified.*

### Supporting the DOE Mission

The Office of Intelligence and Counterintelligence (IN) contributes to multiple DOE missions and is a critical contributor to policy and national security decisions, despite its relatively small size (i.e., relative to other Intelligence Community [IC] agencies). While the most obvious contribution falls under the Department's Nuclear Security and Safety Goal through the provision of unique insights on foreign activities. IN also has a role in the Department's efforts to promote energy security, protect

critical infrastructure, and support interactions with DOE's National Laboratories. In addition, the Office provides counterintelligence and cyber intelligence to protect the people, facilities networks, and intellectual property throughout the DOE complex, as well as assist the Department in its mission to protect the energy sector, which is largely in private hands.

With roots in the Manhattan Project's intelligence effort to understand the progress of the German nuclear program, the Office is DOE's embedded intelligence element. IN is DOE's primary interlocutor with the IC, and it maintains strong connections to the Office of the Director of National Intelligence (ODNI), as well as the other 16 partner IC agencies. The Office's expert scientific and technical inputs to IC analytical products are supremely important contributions to national security, so much so that the creation of the ODNI in 2004 was in part due to the recognition that the IC had downplayed or ignored DOE intelligence analysis regarding Iraq's WMD activities in 2002.

On a day-to-day basis, IN draws on the resources of the entire IC to provide the Department's senior executives with intelligence support and analysis on the key foreign issues about which they must make decisions. The Office frequently addresses such issues as foreign nuclear programs and a diversity of energy security and science/technology (S&T) topics, as well as foreign intelligence targeting of DOE personnel, facilities and systems. Without these important contributions, decisions by DOE leaders would lack essential inputs regularly available to senior officials at other agencies. In addition, DOE brings to the national security policy making community several unparalleled capabilities other agencies and Departments cannot replicate. The Department also presents some unique cyber and counterintelligence vulnerabilities; IN plays an important role in emphasizing the Department's strengths and mitigating its cyber vulnerabilities.

- **Scientifically Informed Analysis**

Analysts at the National Laboratories and DOE headquarters specialize in employing scientific and technical expertise, including experimentally-verified analysis, to tackle the most difficult challenges facing our country's national security leaders. IN's scientific and technical intelligence expertise concentrates on a focused—but vitally important—range of issues to support customers within the Department and throughout the U.S. Government. Whether in support of the Department's senior leaders, other senior U.S. Government policymakers, or other agencies, IN analyses shape the Nation's understanding on key issues listed below. IN analysis is deeply rooted in National Laboratory expertise, draws from diverse fields of technical expertise, and provides important context and details on enduring and emerging threats in the following areas:

- Foreign nuclear weapons and fuel cycle programs
- Nuclear material security and nuclear terrorism
- Counterintelligence issues
- Energy security
- Cyber intelligence
- Strategic scientific and technological developments and trends

- ***The Counterintelligence Challenge***

In 2007, Russia posthumously awarded George Koval, an otherwise anonymous health physics officer in the Manhattan Project at Oak Ridge, the Hero of the Russian Federation decoration for actions he took during World War II. In the days following Koval's death, the story emerged of his espionage activities during the Manhattan Project era on behalf of Soviet military intelligence. The revelations reminded the DOE community of the enduring counterintelligence risks associated with managing the nation's nuclear stockpile and supporting technologies.

Operating from 15 field offices at DOE facilities nationwide, counterintelligence professionals work closely with experts and managers from across the Department to protect vital national security information and technologies, representing intellectual property of incalculable value. Our partnerships with the IC and law enforcement assist in fortifying the defense of the Department's laboratories, plants, sites, intellectual property, and technologies.

- ***Cyber Security's Evolving Role in Intelligence***

Cyber security and defense is a rapidly evolving and broad set of research, operations, and implementation activities. The Department and its laboratories are well recognized for their leadership and expertise in the cyber field. IN's cyber work benefits from a staff with expertise that ranges from basic research and cyber intelligence threat analysis to information technology support and tools development, including incomparable expertise in simulation and modeling and advanced supercomputing. These cyber experts cooperate with other agencies and programs to support the full spectrum of DOE missions:

- Nuclear Weapons Stewardship: Examination and mitigation of malware and supply chain issues.
- Critical Infrastructure: Cooperation with the electric utility industry and DOE partners to protect the grid.
- Cyber Threats: Partnerships with the Department's computing programs to support key technical and analytical intelligence missions.

The rapidly changing cyber threat landscape facing DOE and the nation inspire our cyber team to labor at the leading edge of technology development, even as they provide the best customer service to the Department and the laboratory complex.

- ***The National Laboratories and the Intelligence Community***

Central to this work is the enduring excellence in innovation present in the 12 IN Field Intelligence Elements (FIEs), located at the National Laboratories. The National Laboratories have been essential to accomplishing IN's decades-old missions and are crucial to anticipating and understanding new trends. DOE's National Laboratory-based expertise will continue to be at the heart of our distinctive mission capabilities. IN oversees all aspects of the Strategic Intelligence Partnership Program's reimbursable activities in support of the IC.

IN's FIEs develop advanced tools and technologies for IC sensors, carry out complex simulations and modeling, and provide other critical sensitive support. The Intelligence Reform and Terrorism Prevention Act of 2004 directed the Secretary of Energy to make these resources available to the Intelligence Community (IC); and these experts will continue to excel in providing unparalleled capabilities unavailable to the IC anywhere else. The governance model under which these experts operate requires that we continue to work with the IC to support sustainable, targeted investments in order to marshal the talent necessary to address strategic challenges.

### **Mission Statement**

Identify and mitigate threats to U.S. national security and the DOE Enterprise and inform national security decision-making through scientific and technical expertise.  
*(Office of Intelligence and Counterintelligence Strategy 2015-2019)*

### **Budget**

IN's budget is classified and will be provided in a classified briefing.

### **Human Resources**

IN's human resource allocation is classified and will be provided in a classified briefing.

### **History**

Intelligence and counterintelligence have been foundational activities of DOE and its predecessors dating back to its earliest days. In fact, the Office is older than the Central Intelligence Agency. Just as the Department traces its roots to the Manhattan Project, IN has its origins in a WWII program code-named ALSOS, established to deploy scientists and intelligence officers to Europe in order to discover the extent and nature of German progress on nuclear weapons. In addition, counterintelligence officers at Los Alamos and Oak Ridge uncovered some of the earliest incidents of nuclear espionage against the U.S. nuclear weapons program.

Throughout the various organizational transitions in the interceding years—from the Atomic Energy Commission (AEC) to the Energy Research and Development Administration (ERDA) to DOE—the Department has maintained intelligence and counterintelligence functions. These elements have combined, split and recombined several times over the years but have coalesced around an indivisible, overarching counterintelligence and intelligence mission to inform DOE policymakers and protect DOE personnel, facilities and systems. Since a final marriage of functions in 2006, IN has served as the exclusive DOE representative to the IC and is an active contributor to both the mission of the Department and the IC through the provision of experimentally-validated and technically-informed analysis and investigations. Today, the Director of IN serves as DOE's Senior Intelligence Officer and represents DOE at senior levels in the IC across all key intelligence disciplines, in addition to authorizing the intelligence activities at the DOE national laboratories and sites.

### **Functions**

IN performs a number of unique activities for the Department. In general, these actions fall into the categories below:

- Deconfliction, coordination, and integration of all intelligence activities involving the Department. No intelligence activities should take place in the Department outside of these authorized channels.
- Foreign intelligence analysis and collections support on issues affecting DOE equities.
- Counterintelligence analytic and investigative activities, to include cooperation and coordination with relevant law enforcement and IC partners.
- Cyber intelligence analysis in support of DOE OCIO's cyber defense efforts and the Office of Electricity Delivery and Energy Reliability's support to the private energy sector.
- Facilitation of IC access to the DOE Laboratories through the Strategic Intelligence Partnership Program, a complementary part of the Department's Strategic Partnership Program (non-intelligence).

In addition, IN performs several additional, specific functions:

- Routine/daily intelligence support to the Secretary (S1), the Deputy Secretary (S2), their staffs and several other senior leaders throughout the Department.
- Ad hoc intelligence analysis/expertise on specific subjects for travel and meeting support.
- Management and issuance of Sensitive Compartmented Information (SCI) access for DOE employees and contractors.
- Management of the DOE Intelligence Operations Center, which provides 24/7 TS/SCI-level communications across the U.S. Government, specifically with the White House.
- Accreditation of all of the approximately 75 Sensitive Compartmented Information Facilities (SCIFs) located across the DOE Complex.
- Partnership with S1 Scheduling on the management of the Secretary's Secure Conference Room.
- Intelligence inputs to the Committee on Foreign Investment in the United States (CFIUS) process.
- Provision of certain secure communications equipment.
- Support to specific aspects of the Foreign Visits and Assignments program.
- Reviews of all Memoranda of Understanding (MOUs) and Cooperative Research and Development Agreements (CRADAs) involving foreign entities prior to signature.
- Exclusive DOE representation on IC councils, groups, organizations, and other fora.

### **Recent Organization Accomplishments**

Highlights regarding recent accomplishments will be provided separately due to classification considerations.

### **Leadership Challenges**

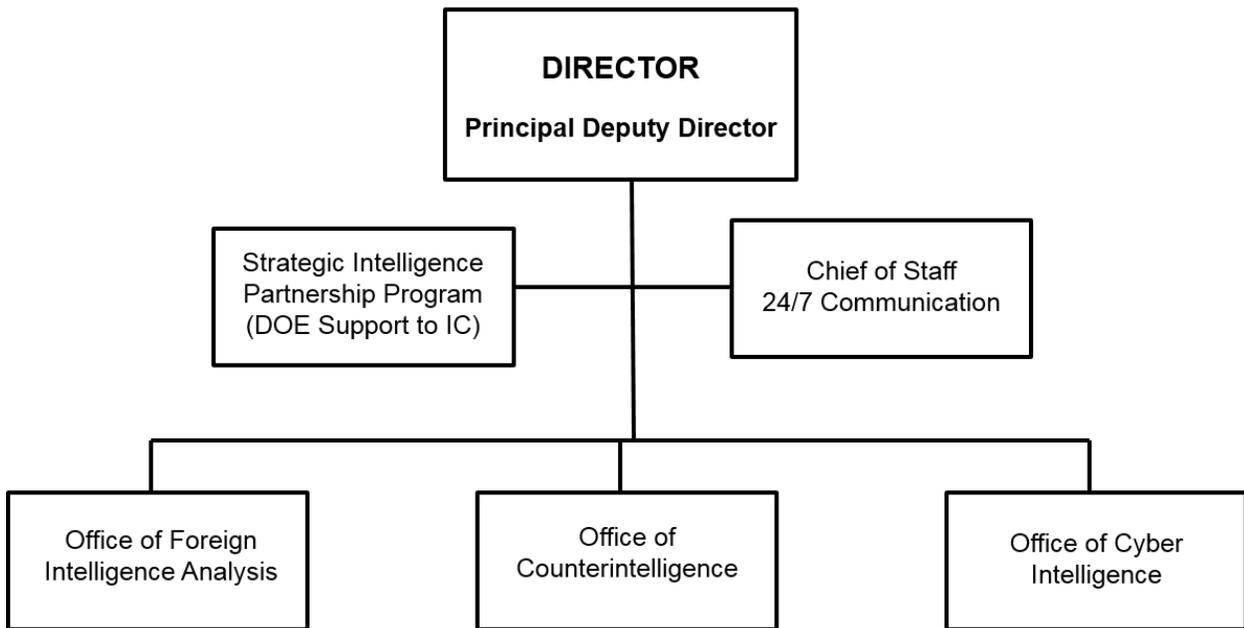
Descriptions of leadership challenges will be provided separately due to classification considerations.

**Critical Events and Action Items**

Critical events and actions will be discussed separately due to classification considerations.

**Organization Structure**

## OFFICE OF INTELLIGENCE AND COUNTERINTELLIGENCE



# Office of International Affairs

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

### Organization Information

**Name:**

Office of International Affairs (IA)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

(202) 586-8660

**Website:**

<http://energy.gov/ia/office-international-affairs>

**Point-of-Contact E-mail Address:**

[Paula.Gant@hq.doe.gov](mailto:Paula.Gant@hq.doe.gov)

[Andrea.Lockwood@hq.doe.gov](mailto:Andrea.Lockwood@hq.doe.gov)

### Supporting the DOE Mission

The Office of International Affairs (IA) performs strategy, coordination, and policy functions for the DOE's international engagements. IA integrates the institutional knowledge found across DOE's programs and the national laboratories – capacity in energy technologies, markets, and policies – to pursue U.S. energy and national security objectives.

IA has responsibility for international energy cooperation in energy, science, and technology; advises the Secretary, Deputy Secretary, and other DOE leadership on strategic implementation of the United States' international clean energy and national security policy; and represents the

Department in related interagency processes. IA also represents the U.S. government in intergovernmental forums and bilateral and multilateral proceedings that address the development and implementation of energy, economic, and security strategies. IA works closely with the State Department, the Department of Commerce, and the National Security Council in pursuit of Administration objectives.

### **Mission Statement**

IA brings to bear knowledge of energy technologies, markets, and policies to advance U.S. objectives in energy security, clean energy deployment, and national security. IA provides experienced counsel to DOE leadership on the execution of U.S. policy in bilateral and multilateral forums. IA is also responsible for overseeing international cooperation in energy, science, and technology.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$13.0 million
FY 2016 Enacted Budget	\$18.0 million
FY 2017 Budget Request	\$19.1 million

### **Human Resources**

FY 2016 Full-Time Equivalent (FTE): 72

### **Functions**

IA's functions include:

- ***International Energy Policy. Expertise with:***
  - Energy technologies, resources, policies, institutions, markets, and security concerns in Africa, the Americas, Asia, Europe, Eurasia, and the Middle East.
  - Bilateral and multilateral energy, trade, security, and climate treaties, agreements, and obligations.
  - International cooperation in science, technology, and energy security.
  - Global and regional energy resource, trade, and investment trends.
- ***Clean Energy Technology Development and Deployment. Knowledge of:***
  - Clean energy and climate research and development priorities, portfolios, policies, and budgets for DOE programs and international partners.
  - Energy end-use technologies and standards, including efficiency in buildings, transportation, and industry.
  - Energy supply technologies and standards, including fossil fuels, nuclear power, and renewable energy.
  - Barriers to technology commercialization and deployment.

### **Recent Organization Accomplishments**

IA's recent significant organization accomplishments include:

- ***Mission Innovation.*** Launched Mission Innovation, at COP 21, with 19 other countries and the EU committing to double governmental clean energy research and development investment over 5 years. Serves as interim Secretariat for the international collaborators under this forum.
- ***Clean Energy Ministerial.*** Hosted the seventh Clean Energy Ministerial in San Francisco in June 2016 and secured approval to transition the CEM Secretariat to the International Energy Agency.
- ***U.S. – China Clean Energy Research Center, New Research Consortium.*** As Secretariat of the U.S. – China Clean Energy Research Center (a bilateral initiative of joint research on advanced coal, buildings efficiency, vehicles, and water-energy nexus), launched new research consortium on medium and heavy-duty trucks.
- ***Key Bilateral and Multilateral Energy Dialogues.*** Convened key bilateral and multilateral senior official dialogues with critical international partners, including Angola, Canada, China, the EU, India, Israel, Mexico, Nigeria, Saudi Arabia, South Africa, and UAE.

### **Leadership Challenges**

IA's leadership challenges include:

- ***Budget Constraints.*** Persistent budget constraints exacerbated by an anomalously low FY2015 appropriation impede the ability to support and implement the increasing number of international initiatives and mandates, particularly as relates to international collaboration on the deployment of clean energy technologies and policies.
- ***Vacancies in Critical High-Level Leadership Positions.*** IA currently has vacancies in critical, high-level leadership positions, including Deputy Assistant Secretary for International Climate and Clean Energy (IA-40); Deputy Assistant Secretary for Asia and the Americas (IA-30); and Office Director for American Affairs (IA-32),
- ***Human Resource Constraints.*** Limited capacity in program offices, exacerbated by limited number of available FTEs.

### **Critical Events and Action Items**

#### **3-month events**

- Methane Emissions Reduction Workshop (October 2016).
- U.S. – UAE Strategic Energy Dialogue, Washington, DC (October 2016).
- Conference of the Parties 22, United Nations Framework Convention on Climate Change, Marrakech (November 2016).
- U.S. – Mexico Energy Business Council (November 2016).
- U.S. – Saudi Economic Dialogue, Riyadh (December 2016).
- Atlantic Council Global Energy Summit, Abu Dhabi (January 2017).
- International Renewable Energy Agency General Assembly, UAE (January 2017).

**6-month events**

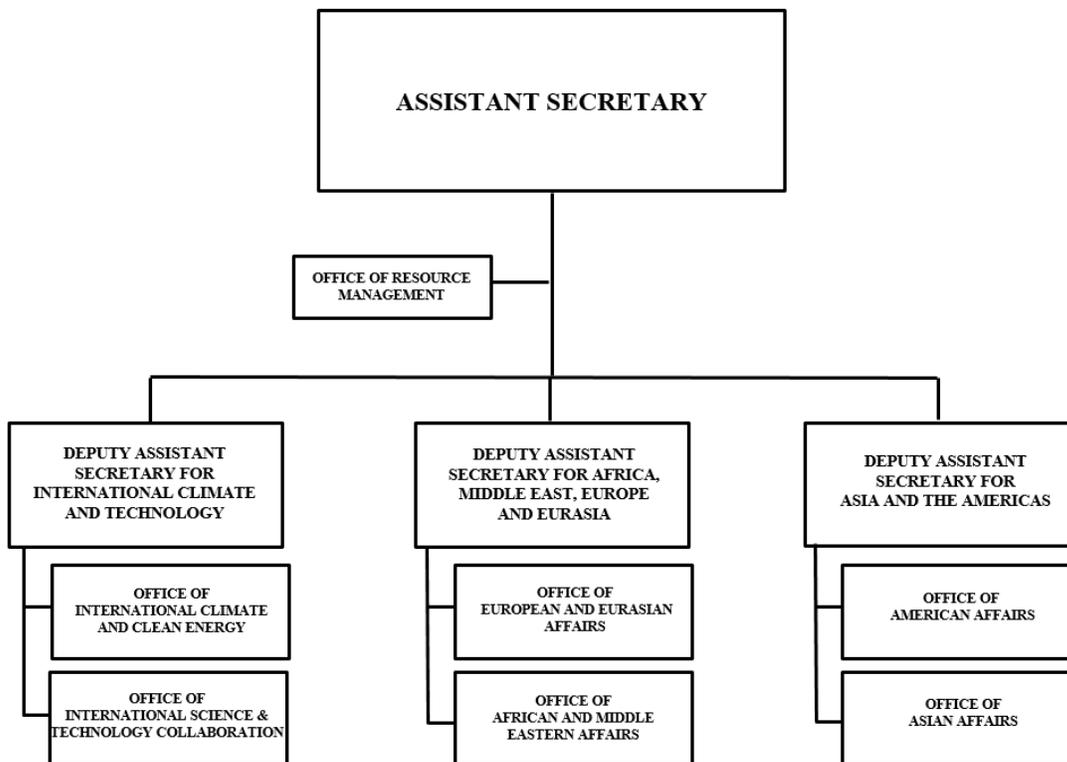
- Clean Energy Ministerial 8 Preparatory Meeting, European Union (TBD).

**12-month events**

- Mission Innovation Ministerial (May/June 2017).
- Clean Energy Ministerial 8 Meeting, China (May/June 2017).
- U.S. – China Strategic & Economic Dialogue- (Summer TBD).
- Group of Seven (G-7) Energy Ministerial (Summer 2017).
- Energy and Climate Partnership of the Americas (Fall 2017).
- Conference of the Parties 23, United Nations Framework Convention on Climate Change, (Winter 2017).
- International Energy Agency Ministerial (Winter 2017).

**Organization Chart**

## ASSISTANT SECRETARY FOR INTERNATIONAL AFFAIRS



# Loan Programs Office

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

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

### Organization Information

#### Name:

Loan Programs Office (LP)

#### Address:

1000 Independence Avenue SW  
Washington, DC 20585

#### Telephone Number:

202-586-5900

#### Website:

<http://energy.gov/lpo/loan-programs-office>

#### Points-of-Contact E-mail Address:

[dong.kim@hq.doe.gov](mailto:dong.kim@hq.doe.gov),  
[Sydney.schneir@hq.doe.gov](mailto:Sydney.schneir@hq.doe.gov)

### Mission Statement

The Loan Programs Office (LPO) aims to accelerate the domestic commercial deployment of innovative clean energy technologies and advanced vehicle and component manufacturing to help achieve our national clean energy objectives including: reduced pollution; greater job creation; reduced dependency on foreign oil; improving America's environmental legacy; and enhancing American competitiveness in the global economy of the 21st century. LPO executes this mission by guaranteeing loans to eligible innovative clean energy projects through the Title XVII Innovative Clean Energy (Title XVII) loan guarantee program, and by providing direct loans to eligible manufacturers of advanced technology

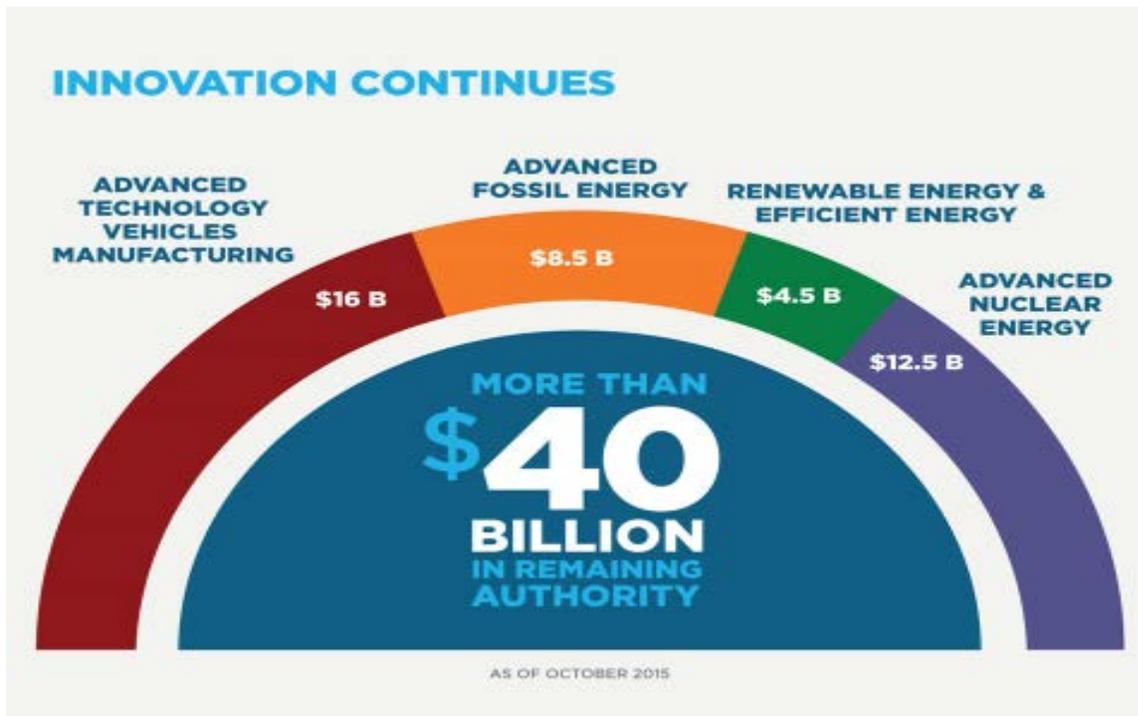
vehicles and components through the Advanced Technology Vehicles Manufacturing (ATVM) loan program.

**Budget**

Fiscal Year	Budget
FY 2015 Enacted Budget	\$42.0 million
FY 2016 Enacted Budget	\$48.0 million
FY 2017 Budget Request	\$42.0 million

*Note: The Title XVII funding levels are offset by loan guarantee collections of \$25 million in FY 2015 and 2016 and \$27 million in FY 2017.*

**Remaining Loan Authority**



**Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 125.

**History**

In June 2010, LPO was officially established as a new, independent organization. The LPO Executive Director (LP-1) reports directly to the Secretary and has responsibility for managing two organizations which formerly resided in the Department’s Office of the Chief Financial Officer (CFO). The two legacy organizations, the Loan Guarantee Program Office (LGPO) and the Advanced Technology Vehicles Manufacturing Loan Program Office, were absorbed by the LPO.

## **Functions**

LPO administers two loan programs: the Title XVII and ATVM programs. It also provides back office services to support the underwriting and execution of a third program, the Western Area Power Administration's (WAPA) Transmission Infrastructure loan program (TIP). In administering these programs, LPO:

- Encourages commercial- and utility-scale development and adoption of new or significantly improved energy technologies by bridging the “valley of death” for debt financing;
- Funds innovative technologies that reduce greenhouse gas emissions;
- Creates jobs by financing the growth of commercial clean energy technologies;
- Provides direct loans to eligible automobile manufacturers and component suppliers for projects that re-equip, expand, and establish manufacturing facilities in the U.S. to produce advanced technology vehicles, ultra-efficient vehicles, and components for such vehicles; and
- Protects U.S. taxpayers by ensuring the loans and loan guarantees LPO provides have a reasonable prospect of repayment.

LPO has more than \$40 billion in remaining loan guarantee and loan authority for the Title XVII and ATVM programs, respectively, to finance innovative clean energy projects and advanced technology vehicles and component manufacturing.

- **Title XVII**

The Title XVII loan guarantee program provides loan guarantees to accelerate the deployment of innovative clean energy technologies. Loan guarantees are made available to qualified projects and applicants who apply for funding in response to open, technology-specific solicitations.

The Title XVII program, established under the authority of Title XVII of the Energy Policy Act of 2005 (EPAct), provides loan guarantees for loans made to support certain types of clean energy projects under Section 1703 of the EPAct. The Title XVII program was modified in 2009 by the American Recovery and Reinvestment Act (ARRA), enacted in February 2009, which added Section 1705 to the EPAct. The addition of the Section 1705 program included an appropriation of funds that allowed DOE to pay the credit subsidy cost of certain loan guarantees. Prior to ARRA, under the Section 1703 program, the recipients of Title XVII loan guarantees were required to pay the credit subsidy cost, unless Congress appropriated funds for such costs, which it did not do until 2009. DOE issued a first set of regulations governing the Title XVII program in October 2007 (Part 609 under Chapter II of Title 10 of the Code of Federal Regulations), and released modifications to these regulations in 2009 and 2012.

- **Title XVII - 1703 Solicitations**

The Title XVII loan guarantee program applies to a wide range of energy technologies, including advanced fossil energy, advanced nuclear energy, renewable energy, and energy efficiency. Eligible projects must utilize a new or significantly improved technology; avoid, reduce or sequester greenhouse gases; be located in the United States; and have a reasonable

prospect of repayment. LPO is currently accepting applications in response to the following open Title XVII solicitations:

- Advanced Nuclear Energy Projects Solicitation - \$12.5 Billion
- Renewable Energy & Efficient Energy Projects Solicitation - \$4.5 Billion
- Advanced Fossil Energy Projects Solicitation - \$8.5 Billion

- **ATVM**

The Advanced Technology Vehicles Manufacturing loan program is used to originate, underwrite and service loans to eligible automotive and component manufacturers to finance the cost of reequipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles and qualifying components, and engineering integration performed in the United States of advanced technology vehicles and qualifying components. To date, the program has supported the production of more than 4 million advanced technology vehicles, and has over \$16 billion in remaining loan authority.

The ATVM program was established by Section 136 of the Energy Independence and Security Act of 2007 (EISA) and was enacted in January 2008. Section 136 authorized DOE to create the ATVM program and to make a total of up to \$25 billion in direct loans to manufacturers of advanced technology vehicles, which are vehicles meeting certain specified fuel economy standards, or their associated components, and have their manufacturing facilities sited in the U.S. The ATVM loan program requires compliance with its Interim Final Rule (10 CFR Part 611). In November 2014, Secretary Moniz announced updated guidance for participants clarifying the applicability of component manufacturing under the ATVM program.

The LPO portfolio currently includes 29 active loans supporting 22 projects with over \$29 billion in current obligations. Of those obligations, over \$25 billion is disbursed and over \$6 billion of principal is repaid. The portfolio currently has 3,852 megawatts (MW) of generation capacity and annual production of 2.4 million automobiles.

### **Recent Organization Accomplishments**

LPO has had a number of accomplishments, including, but not limited to:

- ***Launching new markets***

- LPO successfully helped launch the utility-scale solar photovoltaic (PV) market in the United States. Prior to 2010, there were no utility-scale PV projects larger than 100 MW in America. LPO financed the first five projects of this kind domestically, and then the private sector took over, financing at least another 45 utility-scale PV projects.
- This case study illustrates that the Title XVII Loan Program has served its mission by bridging the commercial deployment funding gap for utility-scale PV and helped this technology reach full commercial deployment.

- ***Deploying innovative or advanced technology at scale***

- LPO has invested more than \$29 billion in 30 diverse projects nationwide.
- Specifically, the ATVM program has supported three projects across 16 locations in eight states.

- **Prudently managed portfolio**
  - LPO manages a portfolio of over \$32 billion in loans, loan guarantees, and conditional commitments, with losses averaging only slightly over 2.3%.
- **Supporting U.S. jobs**
  - The Title XVII and ATVM programs have supported more than 56,000 good-paying U.S. jobs.
- **Reduced pollution or harmful greenhouse gas emissions-**
  - LPO projects have prevented more than 30 million metric tons of CO2 emissions, or the equivalent to removing 6.2 million cars from the road.
  - Once all projects are operating at capacity, the LPO portfolio is expected to avoid more than 19 million metric tons of CO2 emissions annually.

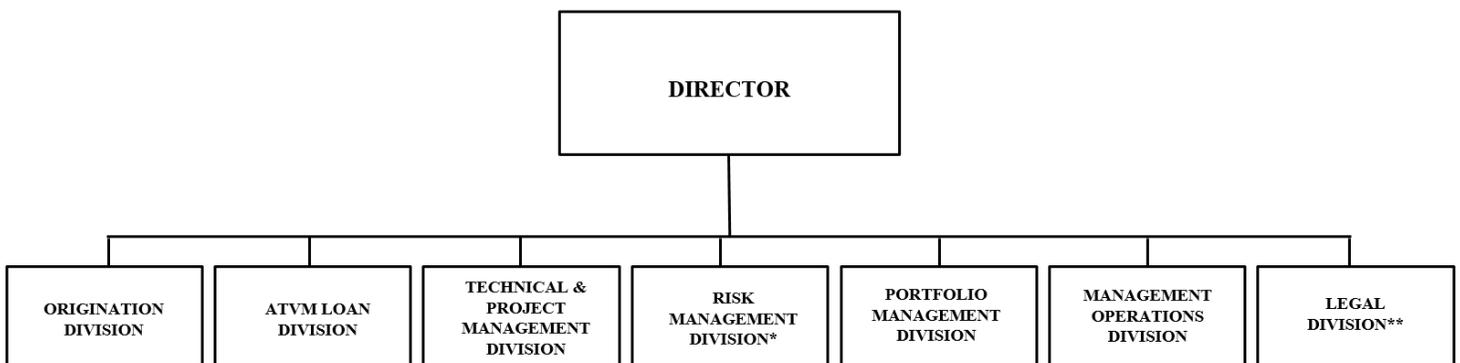
**Challenges**

LPO challenges include, but are not limited to:

- **Maintaining a strong and healthy portfolio:** LPO’s Portfolio Management Team vigorously manages the existing portfolio of loans and loan guarantees.
- **Expanding the existing LPO pipeline of project applications:** LPO currently has a robust pipeline of project applications for both Title XVII and ATVM, however the program needs to attract more applications to have “more shots on goal.”
- **Issuing conditional commitments to high-quality projects:** LPO must continue to diligence high-quality deals in the pipeline to advance worthy projects to conditional commitment.

**Organizational Structure**

**LOAN PROGRAMS OFFICE**



\*Risk Management Division was previously called the Credit Division.  
 \*\*Director, Legal Division, also reports to DOE General Counsel.

# Office of the Ombudsman

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

### Organization Information

**Name:**

Office of the Ombudsman

**Address:**

1000 Independence Avenue SW  
Washington, DC 20585

**Telephone Number:**

202-586-0500

**Website:**

<http://www.energy.gov/office-ombudsman>

**Point-of-Contact E-mail Address:**

[ombudsman@hq.doe.gov](mailto:ombudsman@hq.doe.gov)

### Supporting the DOE Mission

The Office of the Ombudsman provides DOE's federal workforce with a confidential, independent, informal, and neutral alternative to address any workplace issue.

The Office engages on many complex and high profile issues, and has successfully worked with employees at all levels to help remedy difficult situations that can otherwise distract from achieving the Department's mission. Employees may also use the Office to raise concerns and share innovative ways to change and sustain improvements to our core operations, business processes, and workplace culture.

The Ombudsman's services include:

- One-on-one coaching to best address issues/concerns.
- Serving as intermediaries between two or more individuals that are reluctant to hold direct discussions.

- Facilitating discussions with peers or supervisors.
- Organizational consulting, team building and group support.
- Elevating systemic issues to Senior Departmental Leadership.
- Referrals to other Departmental resources.

**Mission Statement**

The Office of the Ombudsman assists senior leaders, managers, supervisors, staff, and groups to:

- Prevent or recognize workplace distractions;
- Address and expeditiously resolve individual and organizational matters; and
- Increase employee engagement.

The Office acts in accordance with the International Ombudsman Association’s Code of Ethics and Standards of Practice, to the extent they conform to federal agency rules and regulations, and other federally mandated requirements. These govern the way in which the Office receives complaints, works to resolve issues, and assists with general improvement of the Department.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$850,000
FY 2016 Enacted Budget	\$850,000
FY 2017 Budget Request	\$1 million

Note: The Ombudsman reports directly to the Secretary, but is funded by the Office of Management.

**Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 4.

**History**

The Office of the Ombudsman was established on March 6, 2012. The Office was created to provide an alternative for federal headquarters and field employees who want to speak with a neutral, independent party about workplace issues in a confidential environment.

**Functions**

The Office of the Ombudsman promotes the early identification and resolution of issues in order to promote the morale and productivity of the federal DOE workforce, providing ombudsman services to employees, supervisors, and management personnel regarding work-related concerns. In cases where a process exists for addressing a concern, the Office will refer the employee accordingly. In cases where a process does not exist, the Office serves as an innovative resolution practitioner, utilizing generally accepted ombudsman techniques. The Office proactively identifies areas of concern or those of a systemic nature and makes recommendations on how they can be best addressed. Specific Office functions are as follows:

- Serves as a resource to identify and resolve matters affecting morale and productivity that do not fall within existing processes.
- Formulates strategic and performance plans; develops innovative programs; manages the human, financial and material resources of the Office; and benchmarks against other ombudsman programs.
- Promotes understanding of existing processes for resolving disputes; advocates for alternative dispute resolution; and identifies systemic problems and proposes strategies for improvement.
- Periodically briefs senior leadership on the Office's activities that include statistical information on contacts with the Office while maintaining confidentiality of the information; identifies systemic issues affecting productivity, morale and the workplace; and identifies strategies and options for improvement.
- Interfaces with the Office of Human Capital; the Office of the General Counsel; the Office of Environment, Health, Safety, and Security; and other offices.

The Office is a resource for informal dispute resolution only and does not participate in any internal or external formal process. The Office does not investigate, arbitrate or adjudicate. In addition, contact with the Office does not forestall established timeframes within DOE formal processes, nor does it constitute legal notice to DOE or official notice to initiate a formal process.

### **Recent Organization Accomplishments**

Since its inception in March 2012, the Office of the Ombudsman has serviced more than 1,900 individual employees and more than 4,000 individuals in group support, facilitations, training, and organizational consults. The average case closure is 12.53 days, significantly less time than formal complaint processes.

In April 2015, the Office received the Secretary's Achievement Award in recognition for its outstanding service to the DOE Office of Science over the preceding two years. The Office was recognized for driving results, to include:

- improved efficiencies and job performance;
- enhanced organizational learning;
- enhanced leadership potential;
- decreased fear of reprisal; and
- increased employee engagement

All of which have had a lasting positive impact throughout the Office of Science and the Department.

**Leadership Challenges** – The four members of the Office of the Ombudsman are responsible for servicing a population of approximately 14,000 federal employees spread across the United States and overseas. Present staffing levels do not permit the Office to fully realize its potential as an innovator for alternative dispute resolution within the Department.

Organizational Chart

**OFFICE OF  
THE OMBUDSMAN**



# Bonneville Power Administration

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic Objective 1:** Advance the goals and objectives in the President’s Climate Action Plan by support prudent development, deployment and efficient use of “all of the above” energy resources that also create new jobs and industries.

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

### Organization Information

**Name:**

Bonneville Power Administration (BPA)

**Address:**

P.O. Box 3621

Portland, OR 97208

**Telephone Number:**

503-230-3000

**Website:**

[www.bpa.gov](http://www.bpa.gov)

**Point-of-Contact E-Mail Address:**

[slbaskerville@bpa.gov](mailto:slbaskerville@bpa.gov)

### Mission Statement

The Bonneville Power Administration’s (BPA) mission as a public service organization is to create and deliver the best value for our customers and constituents as we act in concert with others to provide the Pacific Northwest:

- An adequate, efficient, economical and reliable power supply;
- A transmission system that is adequate to the task of integrating and transmitting power from Federal and non-Federal generating units; providing service to BPA’s customers; providing interregional interconnections; and maintaining electrical reliability and stability; and
- Mitigation of the Federal Columbia River Power System’s impacts on fish and wildlife.

BPA is committed to cost-based rates, and public and regional preference in its marketing of power. BPA will set its rates as low as possible, consistent with sound business

principles and the full recovery of all its costs, including timely repayment of the Federal investment in the system.

The Federal Columbia River Power System (FCRPS) includes BPA, the Pacific Northwest generating facilities of the U.S. Army Corps of Engineers (Corps), the Bureau of Reclamation (Reclamation), the non-Federal generation capability acquired by BPA under long-term arrangements, and the operation and maintenance performed by the U.S. Fish and Wildlife Service for the Lower Snake River Compensation Plan facilities. Each of the foregoing entities is separately managed, but the facilities are operated as an integrated power system.

### **Budget**

BPA is self-financing and does not receive annual appropriations. BPA's estimated budget for Fiscal Year 2016 is \$4,329,185,000.

### **Human Resources**

FY 2016 Full Time Equivalents (FTEs): 3,100.

### **Facilities**

BPA maintains and operates 15,156 circuit miles of high-voltage transmission lines, 259 substations, and associated power system control and communications facilities. BPA markets the electric power produced from 31 Federal hydroelectric projects, one non-Federal nuclear power plant, and several small non-Federal hydro and renewable generating plants.

### **History**

The Bonneville Project Act of 1937 provides the first statutory foundation for Bonneville's utility responsibilities and authorities. In 1974, passage of the Federal Columbia River Transmission System Act (Transmission System Act) applied provisions of the Government Corporation Control Act (31 U.S.C. §§ 9101-9110) to Bonneville. The Transmission System Act also provides Bonneville with self-financing authority; establishes the Bonneville Fund (a permanent, indefinite appropriation) allowing Bonneville to use its revenues from electric power and transmission ratepayers to fund all programs without further appropriation; and authorizes Bonneville to sell bonds to the U.S. Treasury to finance the region's high-voltage electric transmission system requirements.

In 1980, enactment of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) expanded Bonneville's authorities related to regional resources adequacy, and fish and wildlife mitigation. The Northwest Power Act also established the statutory framework for Bonneville's administrative rate-setting process and established judicial review of Bonneville's final decisions in the U.S. Court of Appeals for the Ninth Circuit.

As of 2016, Congress has provided Bonneville with revolving U.S. Treasury borrowing authority of \$7.7 billion.

## Functions

- Bonneville provides wholesale electric power, transmission, and energy efficiency throughout the Pacific Northwest. Bonneville serves a 300,000 square mile area including Oregon, Washington, Idaho, and western Montana, and parts of northern California, Nevada, Utah, and Wyoming, serving a population of about 12.9 million people.
- Bonneville markets the electric power produced from 31 Federal hydro projects in the Pacific Northwest owned by the Corps and the Reclamation.
- Bonneville also acquires non-Federal power, including the power from one nuclear power plant, the Columbia Generating Station (CGS), to meet the needs of its customer utilities.
- Bonneville maintains and operates 15,156 circuit miles of transmission lines, 259 substations, and associated power system control and communications facilities over which this electric power is delivered.
- Bonneville also supports the protection and enhancement of fish and wildlife, and promotes conservation and energy efficiency, as part of its efforts to preserve and balance the economic and environmental benefits of the FCRPS.

## Recent Organization Accomplishments

- ***Long Term Contracts:*** Public preference customers currently receive wholesale power under 20-year power sales contracts which were designed in 2007 when BPA signed its Regional Dialogue Record of Decision. The policy includes a tiered rate approach, with the Tier 1 rate based on the cost of the existing Federal system with limited and defined augmentation. If preference customers choose to buy more power from BPA beyond their Tier 1 designation, this power will be sold at a Tier 2 rate set to fully recover BPA's costs of securing the resources to serve this load growth. By defining the amount of power that will be available at the Tier 1 rate, BPA provided utilities and other resource developers clarity to make decisions about developing or acquiring new power resources. The low and stable Tier 1 rate contributes to BPA's financial stability and ability to make its annual payments to the U.S. Treasury.
- ***Transmission Construction:*** In November 2015, BPA completed nearly ten years of project planning and construction of two 500-kilovolt transmission lines: the 38-mile Central Ferry-Lower Monumental Transmission Line in southeastern Washington, and the 28-mile Big Eddy-Knight Transmission line running from The Dalles, OR, to near Goldendale, WA. These projects improve the Pacific Northwest's ability to meet a huge queue of transmission requests, including requests of renewable generating resources, and improve system reliability. BPA initiated the projects after confirming sound business cases and repayment for them. BPA also is nearing completion of modernizing the northern substation and transmission line for the 900-mile Pacific Direct Current Intertie, which electrically connects the Northwest to southern California. The Pacific Direct Current Intertie northern substation modernization was completed and energized in January 2016. In February 3, BPA released the Final Environmental Impact Statement for a potential I-5 Corridor Reinforcement Project which would be a 79-mile, 500-kilovolt transmission line in southwestern Washington. BPA is determining whether it can meet or delay the need for the proposed I-5 transmission line using non-wires alternatives (demand response, etc.).

- ***Fish and Wildlife Provisions for Operation of FCRPS:*** The United States District Court for Oregon ruled on May 4 on litigation challenging the NOAA Fisheries (NOAA) 2014 Biological Opinion (BiOp) for operations of the Federal Columbia River Power System (FCRPS). The Court ruled that the BiOp is based on an improper jeopardy standard under the Endangered Species Act (ESA), fails properly to consider impacts to species recovery from climate change, and relies on actions that are not reasonably certain to occur. The ruling also found that the Federal agencies did not comply with requirements of the National Environmental Policy Act (NEPA) in adopting the BiOp. Significantly, the Court wrote that NEPA review should give a “hard look” at all reasonable alternatives, including that “the option of breaching, bypassing, or even removing a dam may be considered more financially prudent and environmentally effective than spending hundreds of millions of dollars more on uncertain habitat restoration and other alternative actions.”

While not a litigant in the district court case, BPA is the primary funder of measures to implement the 2014 BiOp. The Court’s ruling directed that all current implementation actions should continue pending a new BiOp. The Court has since ruled in favor of the Federal agencies’ motion that the NEPA review be allowed to take five years to complete.

- ***The Columbia River Treaty:*** The U.S. Government reached consensus on a high level position for negotiations of the Columbia River Treaty in June 2015, based on the final regional recommendation delivered to State by Bonneville and the Corps (together the “U.S. Entity”). A lead negotiator has been managing the Columbia River Treaty interagency engagement and informal engagement with Canada since August 2015. The State Department approved the authority for formally negotiations with Canada in October 2016.
- ***BPA Engagement with Evolving Western Electricity Markets:*** Western wholesale electricity markets are evolving to respond to a developing sub-hourly Energy Imbalance Market (EIM) and consideration of a western independent system operator, both run by the California Independent System Operator (CAISO). BPA’s goal is not to join either current effort but rather to help shape the rules of both initiatives to preserve and enhance the value of the Federal Columbia River Power System.

The CAISO began operating an EIM in 2014 when PacifiCorp began operations as a member. Last year, PacifiCorp announced it will explore becoming a Participating Transmission Owner with the CAISO, possibly making CAISO a western independent operator. This would place PacifiCorp’s transmission operations and planning into coordination by the CAISO. This has prompted discussions among western states and utilities about the potential value, efficiencies, and challenges of a western independent system operator.

- ***Physical and Cyber Security:*** With more than 15,000 miles of high voltage electric transmission lines and 259 substations in seven western states, the BPA transmission system plays a vital role in the Western Interconnection. BPA’s system is subject to North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP) standards. BPA meets current national electrical system physical security standards and has programs in place for regular inspections, upgrades, and capital investments in its security assets.

## Critical Events and Action Items

### 3-month events

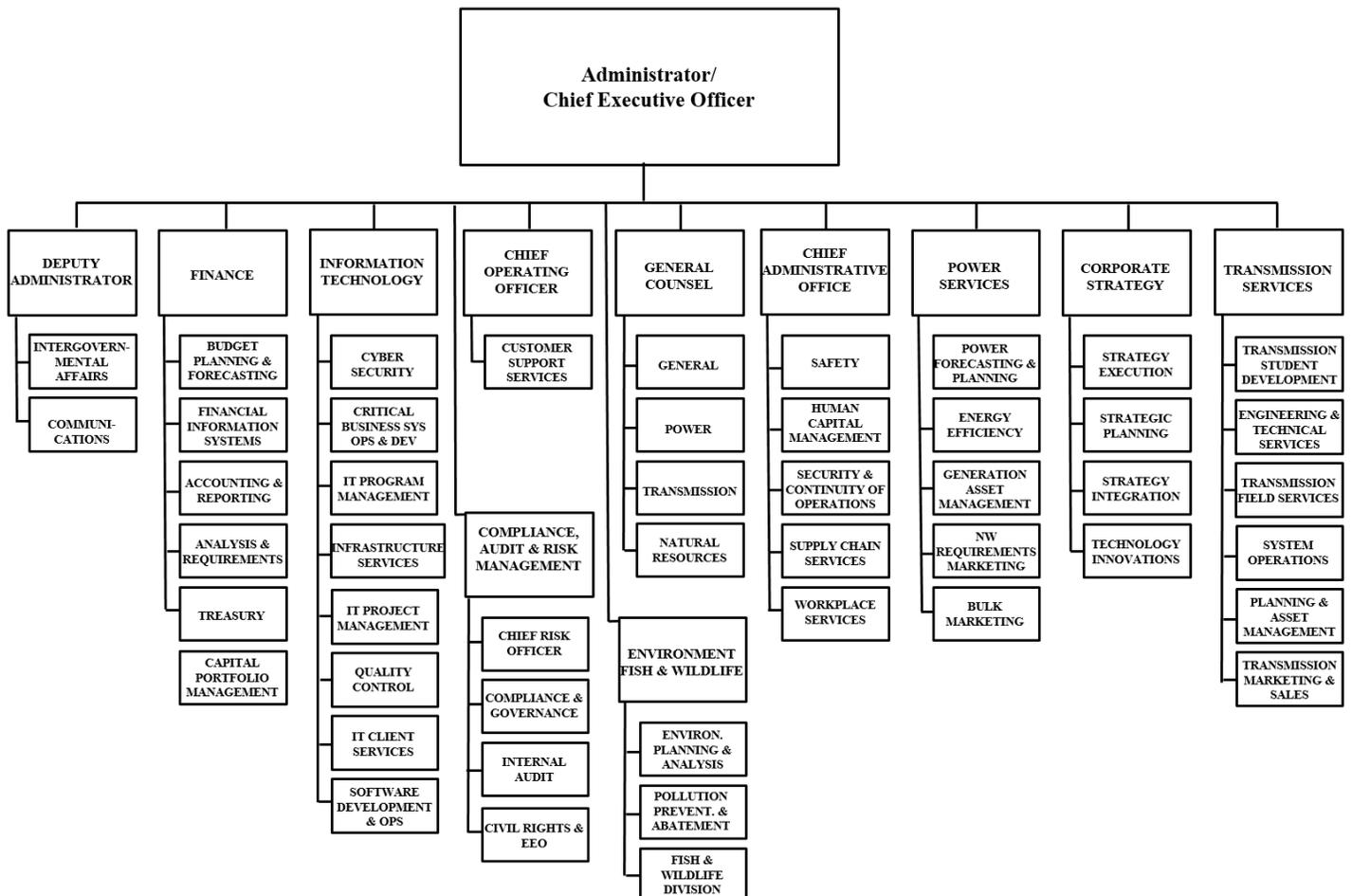
- In November 2016, BPA will publish its initial power and transmission rates proposal for fiscal years 2018-2019.
- By January 2017, BPA expects to make a decision on initiating constructing the I-5 Corridor Reinforcement Project. The proposed project is a 79-mile, 500-kilovolt transmission line in southwestern Washington.
- In February 2017, possible opening of an Integrated Program Review 2, a supplemental public review of certain BPA program and cost estimates for its Fiscal Years 2018 and 2019 rate cases.

### 12-month events

- BPA will complete the 2018-2019 Power and Transmission Rate Cases in July 2017.

## Organizational Chart

# BONNEVILLE POWER ADMINISTRATION



# Southeastern Power Administration

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

### Organization Information

#### Name:

Southeastern Power Administration  
(Southeastern or SEPA)

#### Address:

1166 Athens Tech Road  
Elberton, GA 30635-6711

#### Telephone Number:

706-213-3800

#### Website:

<http://energy.gov/sepa/southeastern-power-administration>

#### Point-of-Contact E-Mail:

Barbara Smith, Vice President, National Relations; [smith@wapa.gov](mailto:smith@wapa.gov)

### Supporting the DOE Mission

SEPA supports the DOE strategic plan by continuing its core mission to market and deliver clean, renewable, reliable, cost-based Federal hydroelectric power and related services. This ensures the reliability of its service delivery and contributes to the stability of the national electricity grid in the specific area of power and transmission service and energy infrastructure. SEPA, which is one of four Power Marketing Administrations (PMAs) managed by DOE, markets the electric power and energy generated by Federal reservoir projects to public bodies and cooperatives in the southeastern United States. SEPA provides 486 public power customers with 3,392 megawatts (MW) of hydroelectric capacity from 22

Federal multipurpose projects, operated by the U.S. Army Corps of Engineers (Corps) at cost based rates. SEPA recovers 100 percent of its costs through the rates charged to its customers.

SEPA has implemented memorandums of agreement with participating customers to fund maintenance, rehabilitations, and modernization of Corps hydroelectric facilities in SEPA's operating area. SEPA meets objectives relative to the North American Electric Reliability Corporation's (NERC) electrical reliability standards on compliance requirements. Finally, SEPA meets organizational cyber security standards through a risk management framework.

### **Mission Statement**

SEPA will market and deliver federal hydroelectric power, at the lowest possible cost, to public bodies and cooperatives in the Southeastern United States.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$96,930
FY 2016 Enacted Budget	\$90,500
FY 2017 Budget Request	\$84,929

*Note: Since FY 2010, SEPA's annual program direction and purchase power and wheeling expenses have been fully offset by receipts collected from the sale of Federal hydropower, which results in a net zero budget authority. This funding mechanism is sought every fiscal year via the Congressional Budget process.*

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 44.

### **History**

SEPA was established in 1950 by the Secretary of the Interior as a Federal agency that today operates within the Department of Energy, as authorized by Section 5 of the Flood Control Act of 1944. By statute, SEPA and the other PMAs must give preference to public utilities and rural electric cooperatives. Unlike the other PMAs, SEPA does not own or operate transmission assets. This is due to private utility opposition and the political climate of the 1950's.

### **Functions**

SEPA's primary functions include:

- Marketing 3,392 MW of hydroelectric capacity from 22 Federal multipurpose projects, operated by the Corps at cost based rates.
- Sells power to 486 public power customers in 11 states.
- Operates three plants on the Savannah River as an approved energy Balancing Authority in accordance with current NERC standards and criteria.
- Conducts annual repayment studies to determine if power rates being charged will

produce sufficient revenue.

- Renews rates in four regional electric systems for five year terms for Federal Energy Regulatory Commission (FERC) final approval.

### **Recent Organizational Accomplishments**

- SEPA is contributing to the Department's goal of securing America's clean energy future by generating clean hydroelectric power without carbon emissions. Annually, SEPA produces 7,772 gigawatt-hours of clean, renewable hydroelectric energy. This energy reduces emission of carbon dioxide by 6.4 million tons per year, sulfur dioxide by 19,400 tons per year, and nitrogen oxides by 8,100 tons per year. Without this SEPA power, 13 million barrels of fuel oil, 4 million tons of coal, or 66 billion cubic feet of natural gas would be depleted each year.
- SEPA consistently repays the federal investment in the hydropower facilities, as well as a significant portion of joint costs shared with flood control, navigation, recreation, and other project purposes
- SEPA consistently meets its system reliability targets for the NERC Control Performance Standards (CPS) to meet or exceed industry averages. CPS1 measures a generating system's performance to match supply to changing demand requirements and support desired system frequency. CPS2 measures a generating system's performance to limit the magnitude of generation and demand imbalances.
- SEPA has established Memoranda of Agreements with its preference customers and the Corps in four Districts to provide funding to rehabilitate hydroelectric generating equipment. This enhances reliability and lessens future budget impacts. Customers have committed to provide over \$1.7 billion over the next 20 years.
- SEPA's power system rates are approved on a final basis by the FERC for five-year terms. New rates were implemented on October 1, 2015, for Cumberland and Kerr-Philpott System customers. The Cumberland rate adjustment was an increase of about twelve percent (12%), or about \$4 million annually, and the Kerr-Philpott rate adjustment was an increase of about two percent (2%), or about \$487,000 annually. Annual adjustments, based on actual operational results and new investment placed in service, enable rates to respond accordingly within the term to assure proper repayment. Jim Woodruff System rates have been approved on an interim basis by the Deputy Secretary of Energy for implementation on October 1, 2016 and presented to FERC for final approval. The rate adjustment for this single project reflects a decrease of about 24% due to revised Corps O&M estimates. Georgia-Alabama-South Carolina rates will be revised in fiscal year 2017. SEPA will continue to work openly with customers to improve the rate development process.

### **Leadership Challenges**

The nation's electricity landscape is changing. Many utilities have excess power due to slow economic growth, behind the meter generation, and energy conservation efforts. Natural gas prices and price incentivized renewable options offer low cost alternatives to the Federal power products. In addition to changes in fuel and use profiles, the structured electricity markets are evolving and impacting conditions for generating, purchasing, selling, and transferring energy within those markets. Structured markets also direct transmission investment cost recovery and

reliability guidelines. While many structured market efforts intend to lower prices, the reality is higher prices for some customers of Federal power.

SEPA has difficulty in keeping skilled systems operators for SEPA's Operations Center. Pay restructuring is being pursued with assistance from DOE's Human Capital Office and DOE's Budget Office.

### **Critical Events and Action Items**

#### **6 months**

Anticipate Department of Defense guidance on Dam Safety by May 2017. SEPA expects the Department of Defense, through the Assistant Secretary of Army for Civil Works, to issue policy guidance in the spring of 2017 for how they plan to address recommendations made in a December 2015 General Accountability Office (GAO) report titled "Actions Needed to Improve Cost Sharing for Dam Safety Repairs." The report examined cost sharing for Corps dam safety repairs and determined the Corps did not apply one provision of its Dam Safety Assurance authority. GAO recommended that the Corps clarify policy guidance on (1) usage of the state-of-the-art provision and (2) recommended effective communication with sponsors to establish and implement cost sharing agreements for all dams, including the three named in the report.

The report relates to dam safety work at two projects in SEPA's Cumberland River System where the Corps did not apply a provision of the Dam Safety Act which specifies repayment criteria. The existing rate addressed disputed dam safety expenses, and was approved by FERC in 2016.

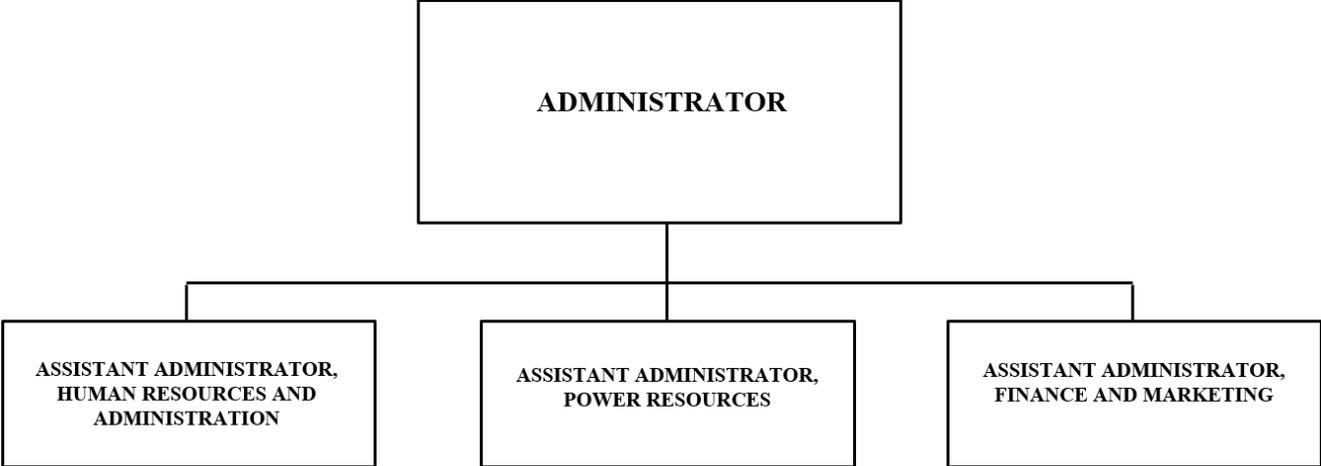
This has the potential to significantly impact power rates where future dam safety work is required.

#### **12 months**

Assuming the Corps issues a Proposed Rulemaking on Municipal and Industrial Water Supply in 2016 as anticipated, it is expected that the Corps will issue a Final Rulemaking on Municipal and Industrial Water Supply sometime in 2017. This rulemaking could increase water storage changes at Federal dams that could negatively impact Federal hydropower production through diminished storage availability, generation capability, and increased power rates.

Organizational Chart

**SOUTHEASTERN POWER ADMINISTRATION**



# Southwestern Power Administration

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

### Organization Information

#### Name:

Southwestern Power Administration (SWPA)

#### Address:

One West Third Street  
Tulsa, Oklahoma 74103-3502

#### Telephone Number:

918-595-6600

#### Website:

<https://www.swpa.gov>

#### Point-of-Contact E-Mail:

Barbara Smith, Vice President, National Relations; [smith@wapa.gov](mailto:smith@wapa.gov)

### Supporting the DOE Mission

Southwestern Power Administration (SWPA) supports the Department of Energy (DOE) strategic plan by marketing and delivering clean, renewable, reliable, cost-based Federal hydroelectric power and related services to ensure the reliability of its service delivery. SWPA contributes to the stability of the national electricity grid in the specific areas of power and transmission service and energy infrastructure. SWPA maintains and upgrades its energy infrastructure to ensure reliable and efficient delivery of Federal power, which is an integral part of the Nation's electric grid. SWPA modernizes its energy infrastructure by incrementally improving facilities, increasing transmission capacity where feasible, accommodating interconnection requests, and enhancing transmission grid reliability to support the rapidly changing

utility industry, evolving regional needs, and interest in renewable resources. Finally, SWPA partners with its customers and other stakeholders to develop new and innovative solutions to address industry issues.

**Mission Statement**

SWPA markets and reliably delivers Federal hydroelectric power with preference to public bodies and cooperatives. This is accomplished by maximizing the use of Federal assets to repay the Federal investment and participating with other water resource users in an effort to balance their diverse interests with power needs within broad parameters set by the U.S. Army Corps of Engineers (Corps), and implementing public policy.

**Budget:**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$122,666
FY 2016 Enacted Budget	\$136,223
FY 2017 Budget Request	\$140,898

*Note: Most of SWPA’s appropriations are offset by receipts collected from the sale of hydropower. As a result, the net appropriation for both FY 2015 and 2016 was \$11.4 million. In FY 2017, the expected net appropriation is \$11.057 million.*

**Human Resources:**

FY 2016 Authorized Full Time Equivalentents (FTEs): 194.

**History**

SWPA was established in 1943 by the Secretary of the Interior as a Federal agency that today operates within DOE, as authorized by Section 5 of the Flood Control Act of 1944. By law, SWPA markets and delivers Federal power primarily to public bodies and rural electric cooperatives. SWPA has over one hundred such preference customers; these entities ultimately serve nearly nine million end-use customers across SWPA’s marketing area of Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas.

**Functions**

SWPA’s primary functions include:

- Operates 17 hydroelectric facilities within SWPA’s marketing area, and operates 1,380 miles of transmission line located in Arkansas, Missouri, and Oklahoma. The hydroelectric facilities that produce the power and energy marketed by SWPA are owned by the U.S. Army Corps of Engineers, and are operated in accordance with a memorandum of understanding and accompanying operating arrangements between SWPA and the Corps.
- Operates transmission lines in accordance with North American Electric Reliability Corporation (NERC) and Southwest Power Pool (SPP) Regional Transmission Organization (RTO) standards and criteria.

- Conducts an annual repayment study to determine if current SWPA power and transmission rates produce sufficient revenue to provide for SWPA expenses, and to repay the Federal investment in the energy infrastructure marketed by SWPA.

### **Recent Organization Accomplishments**

- ***Clean Energy*** – On average, SWPA provides nearly 5.6 billion kilowatt hours (kWh) of clean renewable hydroelectric energy annually. This energy production reduces emissions of carbon dioxide by 4.6 million tons per year. The clean renewable hydropower marketed by SWPA replaces 9.7 million barrels of fuel oil, 3 million tons of coal, or 44.7 billion cubic feet of natural gas that would otherwise be depleted each year.
- ***Operational Performance*** – SWPA consistently outperforms its targets for the NERC Control Performance Standards. Since NERC began measuring a utility's ability to balance generating supply to electrical load and to limit the magnitude of generation and demand imbalances, SWPA has met or exceeded its targets. In March 2015, SWPA passed a NERC audit on cybersecurity with no findings of non-compliance. SWPA also passed a NERC Operations and Planning audit in August 2014, marking two consecutive NERC audits with no findings of non-compliance.
- ***Financial Performance*** – SWPA's financial performance is measured by SWPA's accomplishment in consistently repaying the Federal investment in the hydropower facilities, as well as a significant portion of the multi-purpose water resource projects' joint costs shared with flood control, navigation, recreation, and other project purposes.
- ***Spectrum Relocation*** – The “Enhance 911 Act of 2004” was passed to facilitate the reallocation of spectrum from governmental to commercial users to improve, enhance, and promote the Nation's homeland security, public safety, and emergency response through 911 services. In order to accomplish this in SWPA's region, SWPA received \$42.8 million in spectrum relocation funds, as approved by the Office of Management and Budget, and as reported to Congress. The tower installation for the project is 91 percent complete, with 78 percent project completion overall. SWPA will complete construction and obtain comparable communications capability by the end of FY 2017.
- ***Generation Reliability*** – Since 1999, SWPA's customers have approved approximately \$535 million to replace or refurbish failing and obsolete equipment at Corps-owned facilities. Two rehabilitations have been completed under the program, three are in the construction phase, and six are in the design and planning stage. The initiative contemplates major replacement work at all of the 24 hydroelectric plants in SWPA's marketing area over the next 30 years.
- ***Section 1222 of the Energy Policy Act of 2005*** – In March 2016, DOE announced it will participate in the development of the Plains & Eastern Clean Line Project (Project), a major clean energy infrastructure project in SWPA's marketing area, under Section 1222 of the Energy Policy Act of 2005. The Project includes an overhead +/- 600 kilovolt (kV) high voltage direct current electric transmission line and associated facilities, with the capacity to deliver approximately 4,000 megawatts (MW) – primarily from renewable energy generation facilities in the Oklahoma Panhandle region – to load-serving entities in the Mid-South and Southeast. SWPA is supporting DOE in its

participation in the Project, and a new field element is being implemented for staff to be hired for these efforts.

### **Leadership Challenges**

- **Increasing Demand for the Water Resource** – The Corps projects from which SWPA markets the hydroelectric power are all multi-purpose. As the demand for water for other uses in addition to hydropower increases, hydropower can be impacted by loss of water storage and availability, as well as required operational changes that will affect the amount of energy generation and the operating capacity of the generating units. Without associated financial credits or a reduction in the repayment obligation for the lost resource, such changes will increase SWPA’s power rates to its customers, and the Federal hydropower customers will inappropriately subsidize other project purposes. SWPA is also concerned with the Corps’ more recent interpretation of its discretionary authority to reallocate water storage to the water supply purpose under the Water Supply Act of 1958 (WSA). Previously, through its practice, the Corps had interpreted the WSA language of “serious affects” and “major change” by limiting water storage reallocations to the greater of 15% of storage or 50,000 acre-feet. Through more recent Corps legal opinion, the Corps has abandoned this set limit and is taking a project-by-project approach; the exact methodology will be unique to each reallocation request, and is currently being determined by the Corps for active studies in SWPA’s region. The loss of a set limit introduces a higher level of uncertainty of the water resource for the hydropower purpose.
- **Competitiveness of SWPA’s Power Rates** – The Federal hydropower product is becoming more expensive, less competitive in the marketplace, and less desirable to customers in the evolving electricity marketplace. In some instances, the PMA rates are over market and customers are considering power supply alternatives to Federal hydropower. SWPA’s integrated system composite firm energy rate is currently over estimated market rates; factoring in supplemental (non-firm) energy, SWPA’s integrated system composite energy rate is, on average, slightly below estimated market rates. This could threaten cost recovery of existing Federal investment and jeopardize future funding for the PMAs and the Corps, which is provided, in varying degrees, through existing customers. Ensuring that SWPA’s rates do not experience instability or upward pressure while increasing certainty and maximizing flexibility and benefits to SWPA’s customers is essential to the sustainability of the Federal power program in SWPA’s marketing area.

### **Critical Events and Action Items**

#### **3 months**

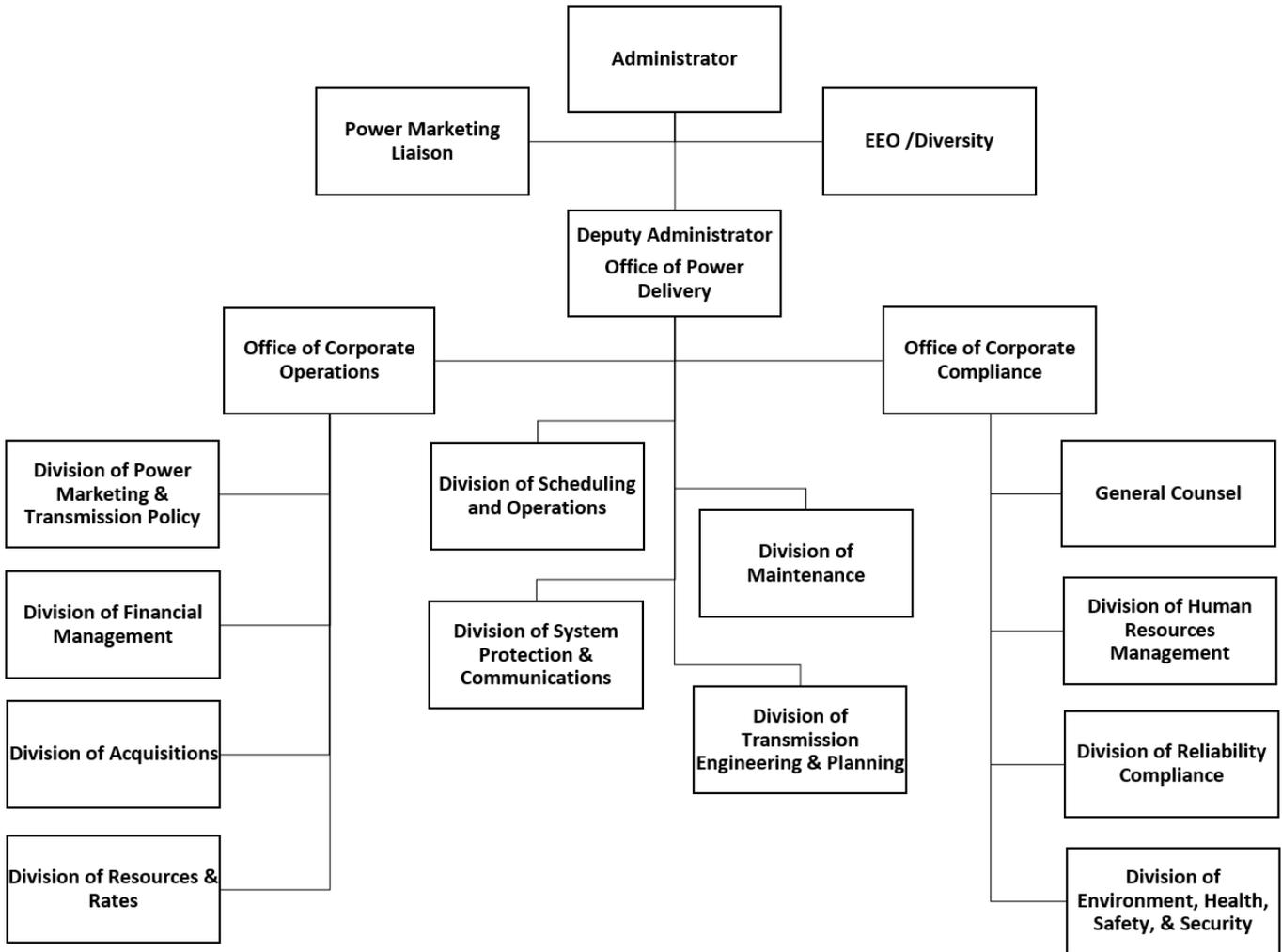
- Finalize the establishment of the Section 1222 Project Management Field Element.

#### **12 months**

- Complete new Alternate Control Center to meet NERC response time.
- Complete SWPA’s portion of the Spectrum Relocation Project.

Organization Chart

# SOUTHWESTERN POWER ADMINISTRATION



# Western Area Power Administration

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

### Organization Information

**Name:**

Western Area Power Administration (WAPA)

**Address:**

12155 W. Alameda Parkway  
Lakewood, CO 80228

**Telephone Number:**

720-962-7000

**Website:**

<https://www.wapa.gov>

**Point-of-Contact E-mail Address:**

Mark Gabriel, Administrator; [gabriel@wapa.gov](mailto:gabriel@wapa.gov)

Michael McElhany, Senior VP, Washington  
Liaison Office; [mcelhany@wapa.gov](mailto:mcelhany@wapa.gov)

### Supporting the DOE Mission

Western Area Power Administration (WAPA), contributes to a more economically competitive, environmentally responsive, secure, and resilient U.S. energy infrastructure. A critical leader in the energy industry, WAPA is an integral asset to the Department's mission and future vision of a vibrant, reliable, and responsible energy economy through a vast interconnected power system, expert staff, and strong relationships with utility customers, and federal and industry partners.

WAPA operates and maintains one of the 10 largest high-voltage electric transmission systems. Mission activities include marketing power, controlling several balancing areas, and maintaining 17,000-plus miles of high-voltage transmission lines across 1.5 million square miles in 15 central and western states.

Specifically, by managing its assets in a sustainable manner and by maintaining and modernizing its facilities, WAPA ensures flexible and reliable operations to accommodate industry change and requested interconnections. WAPA engages increasing interest in renewable resources, while partnering with industry to expand infrastructure to deliver renewable energy sources. WAPA performs its mission in a manner that promotes development of higher capacity U.S. energy infrastructure to ensure flexible, reliable operations and efficient energy markets.

**Mission Statement**

WAPA’s mission is to market and deliver reliable clean, renewal, reliable, cost-based Federal hydroelectric power and related services within a 15-state region of the central and western states, delivering electricity generated from 14 multi-use water projects.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$91,740
FY 2016 Enacted Budget	\$93,372
FY 2017 Budget Request	\$95,581

**Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 1469.

**History**

In 1977, upon the creation of the DOE, WAPA was formed from functions previously carried out by the Department of the Interior, the Bureau of Reclamation (BOR), and the International Boundary Water Commission (IBWC). WAPA markets and delivers clean hydroelectric power from hydropower plants owned and operated by the U.S. Army Corps of Engineers (Corps), BOR, and IBWC. The primary authorization for BOR and Corps dams was to provide flood control, irrigation, and navigation; however, any power produced in excess of project pumping needs is sold to repay the government’s investment in the projects (for example Hoover Dam). WAPA markets this power to customers in a manner that encourages the most widespread use at the lowest possible rates consistent with sound business principles. (Flood Control Act of 1944)

One of WAPA’s greatest accomplishments occurred in 2009 when it was authorized by Congress, via the American Recovery and Reinvestment Act, to borrow up to \$3.25 billion from the U.S. Department of Treasury to support the development of projects that facilitate and optimize the delivery of reliable, affordable power generated by renewable energy resources. WAPA established the Transmission Infrastructure Program (TIP) to carry out and manage this authority, and has already seen two projects successfully built. WAPA’s headquarters office is located in Lakewood, CO, which is within its service territory, and its Administrator reports to the Deputy Secretary of Energy.

**Functions**

Mandated functions performed by WAPA include:

- Providing power marketing;
- Providing transmission and ancillary services;
- Building transmission lines;

- Operating and maintaining transmission infrastructure; and
- Providing energy system balance and delivery services.

### **Recent Organization Accomplishments**

WAPA’s recent significant organization accomplishments include:

- **WAPA’s Low Cost Philosophy.** WAPA executes its mission within a philosophy of reducing or avoiding costs wherever appropriate. This includes strategic and aligned procurements of IT software and equipment; consolidating redundant functions or services; reevaluating office space needs; embracing technology and innovation; and integrating Lean Six Sigma and Continuous Process Improvement into our structure. WAPA Lean Six Sigma/Continuous Process Improvement efforts have created \$9.37 million in cost savings/avoidance in 3 years.
- **Strategic Roadmap 2024.** The creation of the Strategic Roadmap 2024 applies WAPA’s historic mission to the dynamics of an evolving energy industry environment that includes a myriad of new regulations; a growing presence of interruptible and intermittent generation resources; and constraints on WAPA hydro resources. The Roadmap ties together WAPA’s strategy, initiatives, capital budgets, and annual targets to enable the agency to continue to meet customer needs and provide the best value as an organization. It consists of four overarching goals (“Critical Pathways”) all aimed toward promoting WAPA’s mission. These Critical Pathways are:
  - Business, Technology, and Organizational Excellence;
  - Mutually Beneficial Partnerships;
  - Evolution of Services; and
  - Powering and Energy Frontier.
- **Asset Management.** The establishment of an asset management program allowed WAPA to identify how it operates, the current state of its assets, individual asset longevity into the future, and how best to invest for asset maintenance and replacement. The Asset Management program is a systematic process for managing WAPA’s most important transmission system assets to optimize functionality, operational performance, and return on investment, while identifying and managing associated risk. This program is improving overall health of transmission line segments, breakers, and power transformers.
- **Safety Record.** WAPA has a long and proactive safety record. Incident, injury, and lost-time rates are below the industry average of 1.2 recordable incident rate (RIR) and 0.5 days away, restrictions and transfers (DART) rate. WAPA continues to enhance and build upon its safety record.
- **Pioneering Efforts on Fall Protection.** WAPA’s Fall Protection Committee is focused on ensuring WAPA maintenance staff is safe on the job by putting Operation Safety and Health Administration (OSHA) standards for fall protection into action. The committee is now a leader in the energy industry for implementing training and techniques in fall protection. The Fall Protection Committee has provided guidance to other utilities; hosted a variety of fall protection events including two symposiums that brought over participants from the fall protection industry; and have produced highly acclaimed fall protection videos.

- ***Joined the Spare Transformer Equipment Program.*** On December 5, 2014, WAPA joined the Spare Transformer Equipment Program (STEP), an industry program that strengthens the electric sector's ability to restore the nation's transmission system more quickly in the event of a terrorist attack. Joining the program demonstrates the cooperation required throughout the industry to ensure the resiliency and reliability of the transmission system. The agreement is an important step toward enhancing the country's ability to restore the electrical transmission system following emergencies.
- ***Regional Transmission Organization (RTO) Membership.*** WAPA is the first federal agency to join a RTO. The Energy Policy Act of 2005, section 1232 gave the Power Marketing Administrations (PMAs) the authority to participate in a RTO. On July 9, 2014, WAPA's Administrator approved and directed WAPA's Upper Great Plains Region (UGP) to take action necessary to become a full member of the Southwest Power Pool (SPP). WAPA completed a comprehensive and rigorous Alternative Operations Study, which showed joining SPP supports WAPA's mission and related services yielding significant economic benefits under the unique circumstances in UGP. Implementation began on a concurrent track, with full membership effective on October 1, 2015.
- ***Human Resources Service Delivery Initiative.*** On October 20, 2014, the Secretary of Energy approved WAPA's Human Resources Office (HR) to be one of five shared service centers. WAPA's HR Shared Service Center will provide human resources services for Southeastern, Southwestern and Western Area Power Administrations (SEPA, SWPA and WAPA) which went into effect October 1, 2016. The goal is to reduce business redundancies, improve the efficiency and effectiveness of service delivery, and refocus the HR line of business on supporting the DOE's mission and its people.
- ***Transmission and Infrastructure Program (TIP).*** WAPA's Transmission Infrastructure Program (TIP) leverages WAPA's depth of transmission project development experience and expertise, along with its statutory borrowing authority, to advance projects aimed at expanding and modernizing the electric grid. TIP accomplishments:
  - The Montana Alberta Tie Ltd. (MATL), which was the first TIP project, was developed to deliver wind generation into the Alberta market. The project's \$161 million loan financing was repaid in August 2012.
  - TIP currently has two transmission projects approved for federal borrowing authority: Electrical District No. 5 to Palo Verde Hub (ED5-PVH), which was energized in January 2015; and TransWest Express (TWE), which released its final EIS in May 2015. The Record of Decision (ROD) for TWE should be released by the end of 2016.
  - To date, WAPA had advanced funding arrangements (AFAs) with project developers to cover all costs associated with TIP-led technical and other development assistance for the following projects: Centennial West Transmission Line, Southline Transmission, and TWE.
  - Additionally, WAPA has Memorandum of Understandings (MOUs) in place for the following projects: Harry Allen to Eldorado Transmission; Westlands Solar/Tie-Line and Upgrade Transmission; Mead to Adelanto Upgrade and Expansion Transmission; SunZia Transmission; and Colorado River to Delaney Transmission.

- **Physical Security.** In 2013, WAPA created a consolidated physical security program working toward best-in-class measuring, planning, and monitoring of physical assets. WAPA's Office of Security and Emergency Management has undertaken a program of annual substation and facility assessments, and thus far has completed more than 140 work plans for its 319 substations. These assessments employ a risk-based approach focusing on cost effectively managing physical security improvements and works to incorporate upgrades into its 10-year capital planning processes.
- **Cybersecurity.** WAPA operates a large business information network that traverses most of the Western United States and serves its widespread constellation of control centers, administrative facilities, maintenance yards, and in some cases, substations. This network provides administrative services such as email and internet connectivity, as well as providing the connection vehicle to asset management and financial management systems.

In addition, WAPA operates Supervisory Control and Data Acquisition (SCADA) systems in our control centers at Watertown, SD; Phoenix, AZ; Loveland, CO; and Folsom, CA. These systems provide critical grid monitoring and control functions, are connected via private networks to the substations in their respective regions, and to neighboring utilities and business partners, as appropriate.

- **Engineering Pay Scale.** WAPA was invited to participate in an Office of Personnel Management (OPM) special rate request for specific positions in and around western North Dakota including work across the Bakken oil field region. The rate requests originated with the Departments of Defense (DoD) and the Interior, where many federal employees work. The purpose of the rate increase request is to provide federal employees the support they need to keep pace with rising costs of living in western North Dakota. Wage increase request rates range from 35 to 40 percent across the Department and were effective on May 3, 2015.
- **Ten-Year Capital Plan.** The WAPA-wide ten-year capital investment plan is developed via analysis conducted in the Asset Management, maintenance, and regional financial programs. WAPA headquarters financial programs are revised annually. The FY 2017 capital investment is estimated to be approximately \$204 million.

### **Leadership Challenges**

WAPA's leadership challenges include:

- **Systems Operations.** The changing nature of the grid, the influx of different types of generation, and increased intermittency. This requires all utility operators to change the way systems are managed and operated. WAPA continues to evolve its operations to match the changing needs created by new generation resources.
- **Varying Hydro Conditions.** WAPA markets and delivers power generated from 57 hydropower plants and one coal-fired power plant across 10 project systems, and continually monitors and manages through the changes in hydrology. Each of the major river systems (Colorado, Missouri, etc.) is different and water conditions vary widely. In high water years, WAPA markets excess generation; in low water years WAPA must purchase power on the market to meet its contractual commitments to customers.
- **Regulatory Environment.** WAPA is impacted by a number of regulatory activities. These include ever-tightening utility reliability standards; the Environmental Protection Agency's

regulations; land use restrictions; tribal and cultural regulations and protocol; fish and wildlife regulations and a host of related requirements. WAPA maintains a significant environmental team to manage its territory.

### **Critical Events and Action Items**

#### **3-month events**

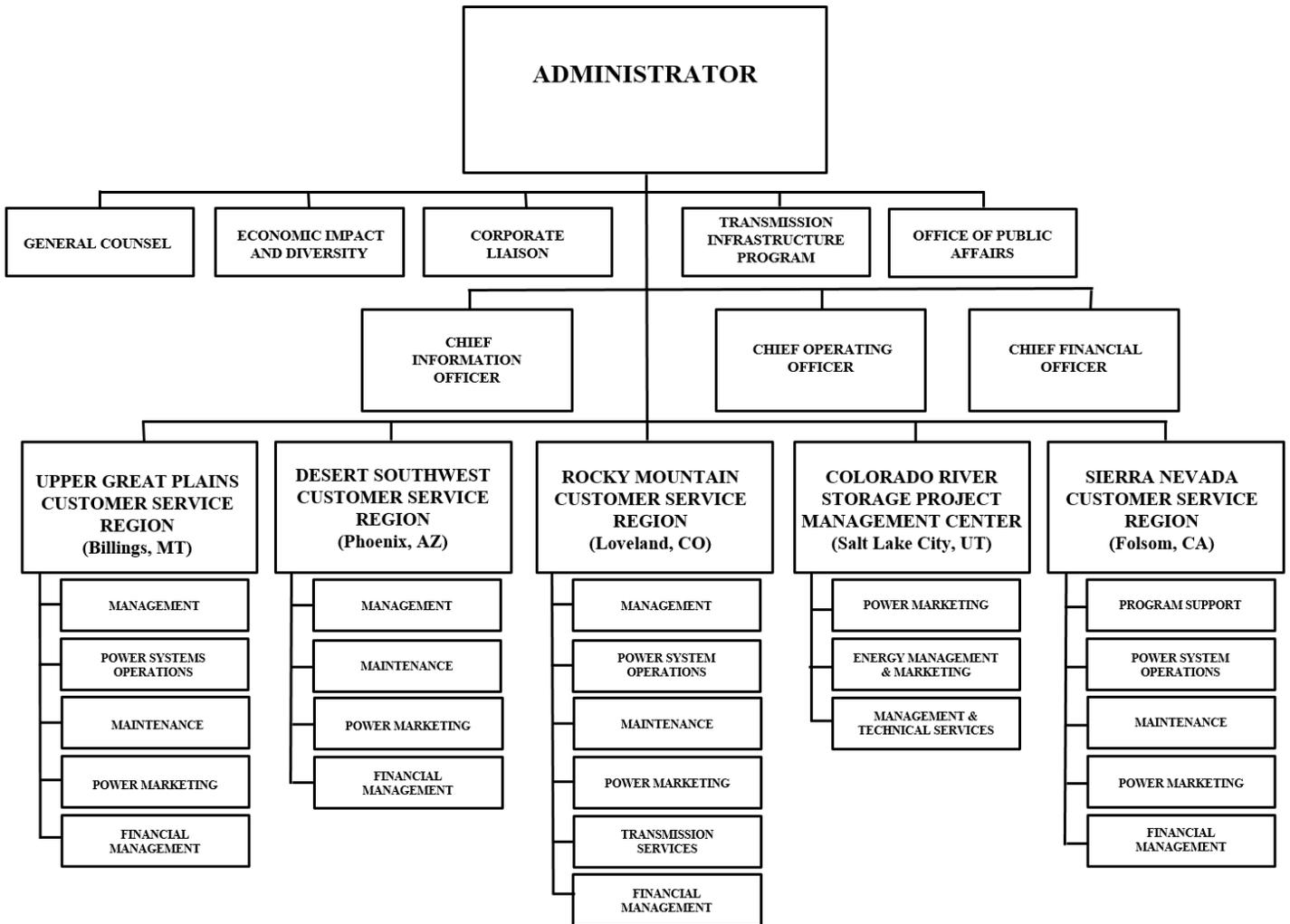
- ***Glen Canyon Dam Long Term Experimental and Management Plan EIS***. The Glen Canyon Dam (GCD) first began hydropower production in 1964. In 1997, the operation of the dam was significantly restricted through a ROD in response to a variety of environmental and downstream resource concerns. WAPA estimates the economic impact of the 1997 changes at approximately \$50 million per year (expressed in current year dollars). To put the restrictions in perspective, GCD is capable of producing 1320 megawatts (MW) of electricity at full power and capacity when Lake Powell is full. Under current operations, the dam rarely produces more than 700 MW of electricity at any given time, and averages closer to 500 MW/hour at any given time. WAPA and the co-lead agencies have worked well on resolving a number of issues.

#### **12-month events**

- ***Central Valley Project Improvement Act (CVPIA)***. Drought and environmentally imposed operating restrictions have reduced water deliveries and hydropower generation available from the Central Valley Project (CVP). In addition, BOR's failure to impose a limit on power contributions to CVPIA Restoration Fund (RF) has caused the federal hydropower product to exceed market cost four out of the last eight years. WAPA is currently conducting a formal process through the Administrative Procedures Act to develop the CVP 2025 Marketing Plan and subsequent power contracts.
- ***Boulder Canyon Project (Hoover)***. Current Hoover contracts are set to expire September 30, 2017. In December 2011, the Hoover Power Allocation Act of 2011 (HPPA) was enacted. HPPA provides for 50-year contract terms and guidance on marketing Hoover Power post-2017. WAPA established final allocations of Hoover power in December 2014 pursuant to a public process and in accordance with all applicable laws. Power deliveries under new contracts commence October 1, 2017.

**Organizational Chart**

**WESTERN AREA POWER ADMINISTRATION**



# Office of Public Affairs

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

#### Name:

Office of Public Affairs (PA)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-4940

#### Website:

<http://www.energy.gov/news-blog>

#### Point-of-Contact E-mail Address:

[DOENews@hq.doe.gov](mailto:DOENews@hq.doe.gov)

### Supporting the DOE Mission

The Office of Public Affairs (PA) is the principal point of contact for the Department of Energy with the news media and the general public. The Office is responsible for ensuring that the public is informed about the Department's activities, as well as the policies and priorities of the Energy Secretary and the President with regard to energy policy, nuclear security, and scientific discovery.

PA also manages and maintains all technical and editorial aspects of Energy.gov, the Department of Energy's primary public-facing website, and produces original written and multimedia content for publication online and across DOE's enterprise social media accounts, which PA administers.

PA advises the Secretary and other senior Department officials on all aspects of media relations, digital communications, public speaking engagements, and other

communications opportunities. PA also helps guide and produce remarks, public statements, and talking points for the Secretary and Deputy Secretary.

### **Mission Statement**

The Office of Public Affairs communicates information about DOE’s work in a timely, accurate, and accessible way to the news media and the general public.

PA performs critical functions which directly support the mission of the Department and the Secretary of Energy. These functions include: communicating the Departmental message, policies, initiatives and information to the news media and the general public; managing and coordinating public affairs activities for Headquarters, field offices and sites, and DOE laboratories; serving as primary spokesperson for the Department; responding to requests for information from the public and the news media; arranging interviews with the news media; providing speechwriting services to the Secretary and Deputy Secretary; preparing written press releases about Departmental activities and sharing Departmental highlights with the news media and the general public; managing the Department’s public-facing digital presence on Energy.gov and social media; and producing multimedia content that tells the story of DOE to a general public audience.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$3.4 million
FY 2016 Enacted Budget	\$3.4 million
FY 2017 Budget Request	\$3.4 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 24

### **Functions**

PA has three primary functions: media relations, digital communications, and speechwriting.

- **Media Relations.** The Director of Public Affairs – with support from the Deputy Director, Press Secretary, and other communications staffers – issues media advisories and press releases, as well as coordinates interviews with Department officials for trade and national media outlets. PA has initiated several broad communications strategies on behalf of the Department, as well as between several agencies, the White House, and DOE field/laboratory public affairs offices on current news topics.

PA maintains positive relationships and ongoing dialogues with key media personnel. This allows PA to provide the Secretary and other senior Department officials with factual information and insight into key media/public occurrences, as well as public views and preferences.

PA also collaborates with the program offices across the Department to ensure messages are coordinated and consistent with the overall DOE narrative. PA works with the 17 national laboratories to tell those stories and showcase the innovative work of the laboratories, including groundbreaking scientific discoveries and major scientific tools that transform our

understanding of nature and strengthen the connection between advances in fundamental science to technology innovation.

- **Digital Communications.** PA's Director of Digital Strategy and Communications manages the technical and editorial aspects of Energy.gov, DOE's primary public-facing website, working closely with other PA leadership to advise and coordinate on press outreach and public events.

Technical functions are managed by a multidisciplinary team of developers, hosting engineers, user experience designers, customer support specialists, and cybersecurity experts who report to the Director of Digital Strategy and Communications. On the editorial side, PA's team of digital content producers are responsible for creating written, audio, and visual content for Energy.gov and DOE's social media accounts.

- **Speechwriting.** PA provides speechwriting services for the DOE Secretary and Deputy Secretary.

### **Recent Organization Accomplishments**

PA's recent significant organization accomplishments include:

- **News Releases and Media Advisories.** PA prepares and issues more than 300 news releases and media advisories each year to highlight the Department's work and activities. PA also serves as the primary liaison between the news media and DOE officials and experts by responding to the incoming press inquiries, arranging interviews, and conducting press conferences/media availabilities as needed.
- **Digital and Social Media Communication.** As discussed above, PA also maintains a digital team that manages both the technical and editorial aspects of Department's public facing web platform – [Energy.gov](http://Energy.gov) – and administers all top-level DOE social media accounts. This team also advises Department leadership on digital communications strategies and best practices. Accomplishments of note include:
  - GovLoop named Energy.gov #1 on its list of "Best Government Websites" shortly after the site relaunched under PA management in 2011.
  - The Digital Reform project consolidated nearly two-dozen standalone websites onto the Energy.gov platform between 2011 and 2016, eliminating duplicative and wasteful information technology spending. Today, Energy.gov hosts websites for DOE's staff and program offices, and gets 4-6 million visits per month.
  - @ErnestMoniz was the first Twitter account for a U.S. Secretary of Energy. Today, it has nearly 100,000 followers.
  - PA launched "Direct Current: An Energy.gov Podcast" in May 2016. It debuted on iTunes at #1 in the Government & Nonprofits category.
- **Speechwriting.** PA works closely with the Secretary, Deputy Secretary, and senior staff to craft speeches and op-eds for the Secretary and Deputy Secretary that further the communication and policy goals of the Department. The speechwriting team wrote 122 speeches for Secretary Moniz in 2015, and nearly 500 speeches over the course of his tenure

with the Department.

### **Leadership Challenges**

PA's leadership challenges include:

- ***Establish and Communicate New Administration Energy Goals and Priorities.*** After the new Administration begins in January 2017, PA will need to reevaluate its main message points for alignment with the new Administration's goals and priorities.
- ***Digital Communication.*** PA will need to establish strong relationships with incoming Office of Chief Information Officer leadership to ensure continuity of several mission-critical functions of Energy.gov.

### **Critical Events and Action Items**

#### **3-month events**

- ***DOE Budget Rollout.*** PA will be responsible for coordinating the public rollout of the Department's proposed budget. The public rollout typically includes a news release, a press briefing with the Secretary and senior leadership, and a blog post. PA will also coordinate with the Office of Congressional and Intragovernmental Affairs (CI) on upcoming congressional testimonies and budget briefings.
- ARPA-E Energy Innovation Summit (February 27-March 1).

#### **6-month events**

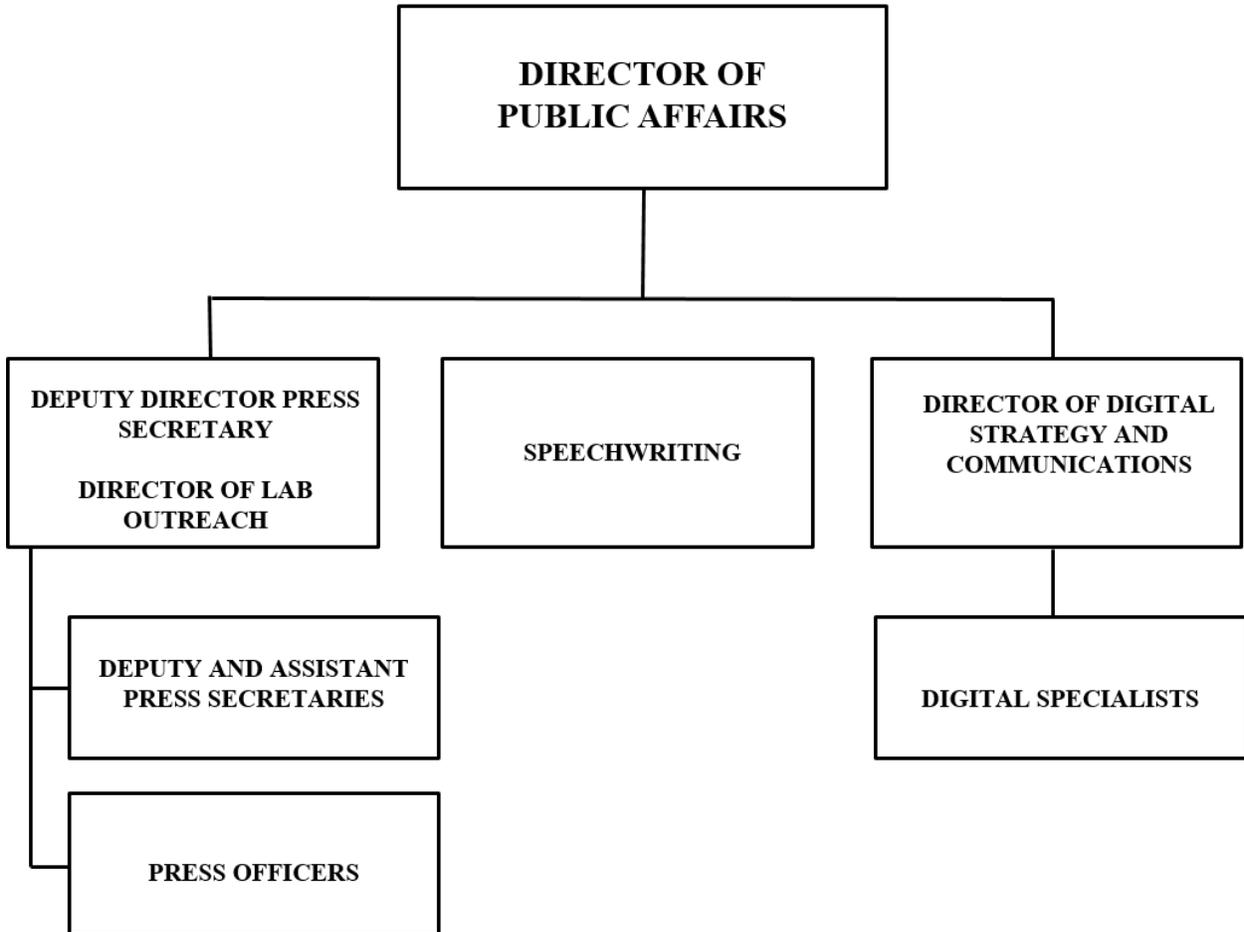
- Lab Day on the Hill (March 2017).

#### **12-month events**

- National Science Bowl
- 43<sup>rd</sup> G7 Summit in Italy
- 2017 G20 Summit in Germany
- Clean Energy Ministerial
- Lab Day on the Hill (3<sup>rd</sup> Quarter, FY 2017)
- Solar Decathlon

Organization Chart

# OFFICE OF PUBLIC AFFAIRS



# Secretary of Energy Advisory Board

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

### STRATEGIC PLAN 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.

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

## Organization Information

### Name:

Secretary of Energy Advisory Board (SEAB)

### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

### Telephone Number:

202-586-3787

### Website:

<http://energy.gov/seab>

### Point of Contact Email Address:

[karen.gibson@hq.doe.gov](mailto:karen.gibson@hq.doe.gov)

## Supporting the DOE Mission

The Secretary of Energy Advisory Board (SEAB or Board) is a Federal Advisory Committee that provides the Secretary with timely, balanced, external advice on issues concerning the Department of Energy (DOE). In September 2013, the Secretary restructured SEAB with four standing sub-committees to address each of the major Departmental mission areas: science, energy, nuclear security, and environmental management. The Board conducts much of its work through ad-hoc task forces, comprised of SEAB members and outside experts, charged by the Secretary with a specific task. The Secretary also created a standing task force focused on the DOE National Laboratories. SEAB has provided key advice to Secretary Moniz during his tenure, in the form of 10 reports and eight memoranda or letters. SEAB membership, task force charges, and reports are publicly available on the SEAB website.

SEAB was created in 1989 to provide the Secretary of Energy with independent advice on the research, development, energy, and national defense responsibilities, activities, and operations of DOE. The Board has served almost continuously since it was established. The Board is subject to the Federal Advisory Committee Act and the recommendations of the Board are advisory.

### **Mission Statement**

SEAB provides advice and recommendations to the Secretary of Energy on the Department's basic and applied research and development activities, economic and national security policy, educational issues, operational issues and any other activities and operations of the Department of Energy as the Secretary may direct.

### **Budget and Human Resources**

According to its charter, the estimated annual operating cost of direct support to the Board and its subcommittees is \$600,000 and requires approximately 2.0 Full-Time Equivalent (FTEs). A full-time or permanent part-time DOE employee serves as the Designated Federal Officer.

### **Board Members**

The Board is made up of approximately 20 individuals - technologists, business executives, academics, NGO representatives, and former government officials. Members are appointed by the Secretary and serve either as special Government employees, who are experts in their respective fields and appointed based on their knowledge and expertise, or representatives of the viewpoints in fields of importance to DOE. Appointments may be made for up to two years and members may be appointed for additional terms. The Secretary appoints the Chair of the Board, and may also appoint a Co-Chair or Vice-Chair. Members of the Board serve without compensation, but may be reimbursed for authorized per diem and travel expenses incurred while attending Board meetings.

### **Operations**

The Designated Federal Officer (DFO) is responsible for management of the Board and keeping the records. The Board meets quarterly, or as frequently as needed, and all public meetings must be noticed in the Federal Register. *The quarterly meeting for FY2017 will be December 12-13, 2016 (Washington, DC).* Subcommittees and/or task forces meet more often. Following approval and transmittal of a SEAB report to the Secretary, the DFO initiates and coordinates with the Program Offices development of a Departmental response to SEAB.

The Board terminates two years from the charter filing date and may not meet if the charter is not renewed biennially. *If not renewed, the current charter will expire on August 28, 2018.*

### **Accomplishments**

Since September 2013, the Board has met quarterly, alternating venues between DOE Headquarters in Washington, DC and National Laboratories. To date, SEAB has steered 12 task forces and developed 10 reports outlining their findings and recommendations to the Secretary; and has offered advice at the request of the Secretary in the form of letters or memoranda on a

number of other issues of importance to the Department. SEAB's advice on, for example, what future technology landscapes might look like, new research directions, research frameworks for DOE programs, and DOE's stewardship of the National Labs, has been shared throughout the Department with the relevant Program Offices and each report has had a Departmental response. All materials are available on the SEAB website.

Below are specific examples of SEAB advice:

- ***The Secretary created a standing task force focused on issues related to the health and management of the DOE National Laboratories.*** In addition to specific topics, the Secretary asked the task force to remain informed of other external studies of the DOE labs, such as the *Commission to Review the Effectiveness of the National Energy Laboratories*; to provide him with an assessment of their findings; and to support the Department in its implementation of the recommendations. Recommendations from SEAB have resulted in a Secretarial Memorandum that clarifies, at a high level, roles and responsibilities relating to the National Labs; DOE progress in streamlining administrative oversight of the M&O contracts; more emphasis on the value the labs provide through technology transfer; and enhancement of the Laboratory Directed Research and Development programs. Much of the progress made has been through pilots implemented at the Labs.
- ***The Future of Nuclear Power Task Force*** described a nuclear power initiative in the period 2030 to 2050 where one or many nuclear technologies have reached technical and commercial maturity. The task force did not address whether or not such an initiative is practical or necessary, but identified the major barriers that need to be overcome for such an initiative to be successful and described a program for the initiative.
- ***The Task Force on Next Generation High Performance Computing*** provided a rationale for investment in the next generation of high performance computing and encouraged the Department to pursue next generation computing both for exascale and for generation technologies that will be required. In response, DOE has started efforts to develop technologies for the post Moore's Law period that comes after exascale, such as quantum, neuromorphic, and deep machine learning. DOE is also collaborating with the National Institutes of Health (NIH) and Veterans Affairs (VA) to exploit exascale and next-generation machine learning efforts to accelerate the search for cures for cancer and improving veteran's health, respectively.
- ***The Task Force on Technology Development for Environmental Management*** identified opportunities and barriers for science and technology development for environmental cleanup. The report provided a foundation for a technology management framework, and for increasing the budget for the Office of Environmental Management's (EM) technology portfolio in order to make scientific and technological advances toward more efficiently completing the remaining cleanup work, much of which is technically complex and high risk.
- ***The Task Force on Methane Hydrates*** provided a framework for DOE's pre-commercial methane hydrate research effort and encouraged strengthening industry engagement through its advisory committee.

- ***The Task Force on Nuclear Nonproliferation*** made recommendations related to the Department’s nuclear nonproliferation activities. Among a number of actions in response to the report, the Department established a Nuclear Policy Council for Department-wide consideration of crosscutting nuclear issues. And, the National Nuclear Security Administration (NNSA) prepared and issued its first report to Congress on its current and planned efforts to address the threats of nuclear nonproliferation and terrorism, titled “Prevent-Counter-Respond: A Strategic Plan to Reduce Global Nuclear Threats”. Congress later mandated that this report be submitted annually, in concert with the President’s fiscal year budget request.
- ***The Task Force on Biomedical Sciences*** identified new areas for research by DOE investigators that could advance the pace of progress in biomedical sciences, and new mechanisms for conducting research in coordination with scientists from other organizations. The study emphasized the need to harness the mission-driven capabilities at the DOE labs to advance progress in the biomedical sciences, with interagency collaboration, and notably in support of the Vice President’s Cancer Moonshot Initiative.
- ***The Task Force on Federal Energy Management*** described ten federal energy management challenges and identified opportunities to improve performance. Based on the task force findings, SEAB believes that further work is justified on federal energy management programs to ensure clarity and prioritization among goals, and establish metrics to judge program progress in improving cost-effective federal energy management. The report is aimed at providing the current and next administrations, Congress, and the public with a detailed review of a set of high priority opportunities and concrete actions.
- ***The Task Force on FracFocus 2.0*** reviewed the national on-line registry for the public disclosure of the chemical constituents in hydraulic fracturing fluids used in unconventional oil and natural gas operations. The report informed the development of FracFocus 3.0, including new features for improved data accuracy and accessibility.
- ***The Task Force to Support the Evaluation of the New Funding Constructs*** evaluated the management and early progress of the new management and funding mechanisms in the Department - Energy Frontier Research Centers (EFRCs), Energy Innovation Hubs (Hubs), Bioenergy Research Centers (BRCs), and the Advanced Research Projects Agency-Energy (ARPA-E). The Board’s recommendations prompted further refinement of the definitions of each modality and their roles, and have resulted in better management and sharing of best practices.
- ***The Task Force on the Quadrennial Energy Review*** (QER) served as a group of experts with experience in energy policy and planning who contributed to the early shaping of the scope of the first phase of the review through their individual help in identifying supply and demand energy indicators and best models and analytical tools and methods for evaluating priority energy needs.
- ***The Task Force on CO<sub>2</sub> Utilization and Negative Emissions Technologies*** will describe a framework for a Department of Energy Research, Development, and Demonstration program on CO<sub>2</sub> utilization technologies that have the potential to reduce CO<sub>2</sub> emissions and/or introduce negative emissions at the gigatonne scale.

# Office of Small and Disadvantaged Business Utilization

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 10:** Effectively manage projects, financial assistance agreements, contracts, and contractor performance.

### Organization Information

#### Name:

Office of Small and Disadvantaged Business Utilization (OSDBU)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-7377

#### Website:

<http://www.energy.gov/osdbu/office-small-and-disadvantaged-business-utilization>

#### Point-of-Contact E-mail Address:

[john.hale@hq.doe.gov](mailto:john.hale@hq.doe.gov)

### Supporting the DOE Mission

The Office of Small and Disadvantaged Business Utilization (OSDBU) is responsible for maximizing prime contracting and subcontracting opportunities for small businesses interested in working with DOE. OSDBU operates in partnership with program offices and the Office of Acquisition Management to achieve Departmental prime and subcontracting small business goals set forth by the U.S. Small Business Administration (SBA). OSDBU is tasked with implementing a wide range of initiatives that increase small and disadvantaged business participation at the Department.

## **Mission Statement**

Building sustainable small businesses to enable the Department to achieve its mission through innovation and creativity.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$2.3 million
FY 2016 Enacted Budget	\$3.0 million
FY 2017 Budget Request	\$3.3 million

## **Human Resources**

FY 2016 Authorized Full-Time Equivalent (FTE): 12.

## **History**

The Small Business Act and the Small Business Investment Act prescribe that the U.S. Government shall provide the maximum practical amount of opportunities to small businesses, small disadvantaged businesses, and women-owned businesses. This policy also applies to small business subcontractors which operate under contracts awarded by all executive agencies. Each agency is responsible for effectively implementing its small business programs, including setting and achieving yearly procurement opportunity goals for small and small disadvantaged business contractors. OSDBU is a separate organization within the DOE, reporting to the Office of the Secretary, as required by the National Defense Authorization Act of 2013.

## **Functions**

- Administers DOE's efforts to provide contracting opportunities for small, small disadvantaged, historically underutilized business zone, service-disabled veteran-owned, and woman-owned small business programs.
- Oversees DOE's small business forecasting. Departmental success is defined as follows: exceeding prime, sub, and socioeconomic small business goals; using best practices, such as the Mentor-Protégé Program; effectively publicizing financial assistance opportunities to the small business community; collaborating with and educating small businesses through outreach events and training opportunities; ensuring compliance with Federal Acquisition Regulations and other applicable small business laws and regulations; issuing new small business policies; and updating the Department's small business policies.

OSDBU's major programmatic activities include:

- ***Annual Small Business Forums and Expositions.*** OSDBU maximizes contracting opportunities for small businesses by working with DOE offices and programs through ongoing outreach events to advance DOE's mission, with over 55 events in FY16 alone. OSDBU helps small businesses navigate through the DOE procurement process. DOE is the

U.S. Government's civilian agency with the largest annual procurement obligations. OSDBU also sponsors an annual national DOE Small Business Forum and Exposition. This event includes exhibits, and breakout and matchmaking sessions. The Department's program offices, Power Marketing Administrations, and National Laboratories attend this event and interact with large and small businesses.

- ***Mentor-Protégé Program.*** OSDBU oversees the DOE Mentor-Protégé Program, encouraging DOE prime contractors to work with, educate, and mentor small disadvantaged businesses certified under Section 8(a) of the Small Business Act; other small disadvantaged businesses; women-owned small businesses; Historically Black Colleges and Universities; other minority institutions of higher learning; and small business concerns owned and controlled by service disabled veterans. The goal of this program is to increase and enhance small business capabilities and competencies when performing DOE and other federal agency contracts and subcontracts. The program fosters long-term business relationships between small businesses and DOE prime contractors, and increases the overall number of small businesses that receive DOE prime and subcontracts.

### **Recent Organization Accomplishments**

OSDBU's recent significant accomplishments include:

- ***Small Business Administration Scorecard.*** DOE's prime small business goal was for at least 6.0% of funds awarded to go to small businesses; DOE surpassed this goal and achieved 8.9%. The DOE prime small business achievement consists of two parts: prime small business awards of \$1.2 billion (5.4%), and Management and Operating (M&O) contractor first tier small business awards of \$800 million (3.5%).
- ***Management and Operating Subcontract Reporting Capability.*** OSDBU designed a system that collects information on first tier subcontracts awarded by the Department's M&O contractors to small businesses; OSDBU plans to fully implement this system by the end of calendar year 2016. In accordance with the Consolidated Appropriations of 2014 (Title III, Section 318), these subcontract awards count towards achievement of the Department's annual prime small business contracting goal.
- ***OSDBU's Office of the National Ombudsman's FY 2015 Small Business Regulatory Enforcement Fairness Act Report.*** In FY 2015, DOE improved its grade from a "D" to an "A" and is now compliant in all areas, including the Small Business Non-Retaliation Policy. DOE's OSDBU website now includes this information for the small business community.
- ***15<sup>th</sup> Annual DOE Small Business Forum and Exposition in Atlanta, GA May 23-26, 2016.*** Departmental program offices promoted and discussed contract opportunities with small businesses. Total attendance was 965, of which 674 were small business representatives.
- ***DOE Annual Small Business Awards Program.*** DOE established the Annual Small Business Awards Program in FY 2015 to recognize the outstanding performance of the people and organizations responsible for promoting and expanding the Department's use of small businesses. Most importantly, the majority of the awards recognize small businesses that have positively supported the Department, including National Laboratories and facilities.

### **Critical Events and Action Items**

#### **6-month events**

- Request approval for the 17<sup>th</sup> Annual FY18 Small Business Forum and Exposition conference package
- Small Business Corrective Action Report
- 16<sup>th</sup> Annual DOE Small Business Forum and Exposition and the Annual Small Business Awards Program will take place May 16-19, 2017, in Kansas City, MO.

**Organizational Chart**

**OFFICE OF SMALL &  
DISADVANTAGED  
BUSINESS UTILIZATION**

**DIRECTOR**

# National Nuclear Security Administration Office of the Administrator

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of the Administrator (NA-1)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-5555

#### Website:

[www.nnsa.energy.gov](http://www.nnsa.energy.gov)

#### Point-of-Contact E-mail Address:

[frank.klotz@nnsa.doe.gov](mailto:frank.klotz@nnsa.doe.gov)

### Supporting the DOE Mission

DOE's National Nuclear Security Administration (NNSA) has three core missions: to maintain a safe, secure, and effective nuclear deterrent; prevent, counter, and respond to nuclear proliferation and nuclear terrorism; and to provide naval nuclear propulsion. The science, technology, engineering, computational, experimental, and manufacturing capabilities resident in NNSA's nuclear security enterprise support each of these mission pillars and underpin a range of activities performed by NNSA labs, plants, and facilities in support of the DOE, other government agencies, and the private sector.

## Mission Statement

NNSA ensures nuclear security by maintaining the nuclear weapons stockpile, preventing, countering, and responding to global nuclear dangers, and providing for naval nuclear propulsion.

## Budget

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$11,399.0 million
FY 2016 Enacted Budget	\$12,526.5 million
FY 2017 Budget Request	\$12,884.0 million

## Human Resources

FY 2016 Authorized Staffing Level: 2,489 (including Naval Reactors and the Office of Secure Transportation).

## History

The NNSA Act (Title XXXII of the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65) established the NNSA as a separately organized agency within DOE and specified its national security missions as:

- Enhancing U.S. national security through the military application of nuclear energy;
- Maintaining and enhancing the safety, reliability, and performance of the U.S. nuclear weapons stockpile (including the ability to design, produce, and test) in order to meet national security requirements;
- Providing the U.S. Navy with safe, militarily-effective nuclear propulsion plants and ensuring the safe and reliable operation of these plants;
- Promoting international nuclear safety and nonproliferation;
- Reducing global danger from weapons of mass destruction; and,
- Supporting U.S. leadership in science and technology.

## Functions

NNSA's core missions and the capabilities and resources are represented as mission pillars and crosscuts. Each pillar and crosscut is integrated through the application of science and technology to national security challenges.

The Office of the Administrator oversees all programs within NNSA and is responsible for: policy and guidance; strategic and program management; program direction; budgeting; resource allocation; safeguards and security; emergency management; environment; contracts; intelligence; counterintelligence; and personnel.

- ***Nuclear Weapons Stockpile (Pillar 1)***. NNSA supports the Nation's strategic deterrent in accordance with policy guidance to not produce new nuclear weapons, support new military missions, provide for new military capabilities, or conduct underground nuclear explosive tests. Sustaining the nuclear weapons currently in the stockpile while extending the life of a

reduced number of weapons anticipated for the future demands a carefully balanced and executed Stockpile Stewardship and Management Program (SSMP). This program consists of research and development, surveillance and assessment activities; maintenance; sustainment efforts, such as life extension programs (LEPs), alterations (Alts), and modifications (Mods); dismantlement and disposition; enabling and improving base capabilities; and materials development, all without nuclear explosive testing.

- ***Nuclear Threat Reduction (Pillar 2)***. NNSA plays a central role in reducing global dangers by engaging countries and advancing capabilities to prevent, counter, and respond to nuclear and radiological proliferation and nuclear terrorism threats and incidents worldwide. NNSA applies its nuclear nonproliferation, counterterrorism, counterproliferation, and emergency response capabilities across the entire nuclear threat spectrum, from intent through crisis response.
- ***Naval Reactors (Pillar 3)***. NNSA provides the design and development support required to equip U.S. Navy vessels (aircraft carriers and submarines) with militarily effective nuclear propulsion plants and to ensure their safe, reliable, and long-lived operation. NNSA is responsible for designing the reactor plant and developing the next-generation of ballistic missile submarines, attack submarines, and aircraft carriers; providing constant operational support to resolve any problems that arise with the nuclear-powered fleet while at sea; and providing the infrastructure needed to train nuclear-qualified sailors.
- ***Science, Technology, and Engineering (Crosscut 1)***. NNSA conducts world-class specialized research, development, testing, and evaluation activities using unique diagnostic tools, experimental platforms, and modeling and simulation architectures. From some of the world's fastest supercomputers to high-energy-density lasers and experimental test beds, the nuclear security enterprise delivers innovative and transformative scientific and technical solutions to the global challenges of the 21<sup>st</sup> century. NNSA works in partnership across the U.S. Government, academia, and industry to advance its platforms and capabilities and to be better prepared for future technological surprise.
- ***People and Physical Infrastructure (Crosscut 2)***. Success in the nuclear security enterprise depends on a highly capable workforce with specialized skills in a broad array of technical fields. Recruiting, retaining, and training today's and tomorrow's workforce with the necessary expertise is critical to mission delivery. NNSA, with its Management and Operating (M&O) partners and non-M&O contracting partners, devotes extensive effort toward developing its Federal and contractor workforce to support the mission.

DOE is also modernizing and rightsizing its infrastructure by maintaining, replacing, and repurposing existing facilities; dispositioning excess facilities in a timely manner; and building new facilities when necessary. Specialized facilities and equipment for commodities (such as uranium, plutonium, tritium, lithium, high explosives, and microelectronics) and general-purpose infrastructure to enable safe, secure, and reliable operations are required to meet the mission. NNSA is deploying new enterprise-wide risk management tools to prioritize efforts to arrest the declining state of its infrastructure.

- ***Management and Operations (Crosscut 3)***. NNSA deploys layers of physical security, safeguards and safety personnel, and sophisticated cyber security systems to protect the workforce, materials, infrastructure, and sensitive information essential to ensuring mission success. NNSA ensures a robust Defense Nuclear Security Program with clear and

consistent lines of responsibility and accountability. Safety operations include supporting safe and efficient material operations, as well as packaging and transporting sensitive materials. These include compliance with environmental, safety, health, and quality requirements and improving the physical infrastructure. NNSA works continuously to improve its project management across the enterprise in partnership with the leadership at its laboratories and other contractor-operated sites. NNSA is focused on building a culture of pride and accountability delivering results to meet its mission goals and providing the best value to the taxpayer. NNSA has systematically strengthened its project management cost estimating capabilities and acquisition systems. NNSA ensures that contract structures and incentives are cost-effective and will hold its contractors accountable to the terms and conditions of its contracts.

### **NNSA National Laboratories, Plants and Sites**

The NNSA nuclear security enterprise, also called the nuclear weapons complex, is composed of NNSA Headquarters, the NNSA field offices, nuclear weapons production facilities, national security laboratories, and the Nevada National Security Site. At these locations, a highly trained workforce — consisting of Federal employees, M&O contractors, and assigned members of the military — works to ensure the success of the NNSA mission. NNSA Headquarters develops the strategy and oversees and coordinates activities to ensure they are accomplished in an efficient and fiscally responsible manner. NNSA stewards its laboratories, plants and site through field offices that provide day-to-day oversight and contract administration. The Field Office Managers report directly to the NNSA Administrator. The Field Offices serve as the local representatives of NNSA; integrating and balancing contract requirements and risk, approving regulatory controls for onsite high hazard work; and managing NNSA interfaces at the tribal, state and local level.

- **National Security Laboratories.** The national security laboratories are Lawrence Livermore National Laboratory (LLNL) in Livermore, California; Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico; and Sandia National Laboratories (SNL) in Albuquerque, New Mexico and Livermore, California. Their primary mission is to develop and sustain nuclear weapons design, simulation, modeling, and experimental capabilities and competencies to ensure confidence in the stockpile without nuclear explosive testing. Additional core missions include plutonium research and development (R&D); tritium R&D; high explosives (HE) and energetic materials R&D; special nuclear material (SNM) accountability, storage, protection, handling, and disposition; pits, detonators, neutron generators, and other non-nuclear component production; research, development, test, and evaluation (RDT&E) efforts for stockpile stewardship; engineering, design, and technical systems integration for Secure Transportation Asset; and nonproliferation, counterterrorism and counterproliferation technologies and capabilities. In addition to the national security laboratories, NNSA also has ongoing work performed by other DOE national laboratories, supporting both Weapons Activity and the Defense Nuclear Nonproliferation programs. The laboratories also perform essential work for the broader national security enterprise, including the Departments of Defense, State, and Homeland Security, and the Intelligence community.
- **Nuclear Weapons Production Facilities.** The nuclear weapons production facilities include the Kansas City National Security Campus (KCNSC) in Kansas City, Missouri; Pantex Plant

(Pantex) in Amarillo, Texas; Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee; and Savannah River Site (SRS) in Aiken, South Carolina. These facilities conduct a range of activities that include assembling, disassembling, rebuilding, repairing, maintaining and surveilling stockpile weapons and weapon components; fabricating joint test assemblies; assembling and disassembling test beds; conducting interim staging and storing of nuclear components from dismantled weapons; performing pit requalification, surveillance, and packaging; producing and procuring non-nuclear weapons components; extracting and recycling tritium; loading tritium and deuterium into gas transfer system (GTS) reservoirs of nuclear weapons; performing surveillance of GTSs to support certification of the stockpile; manufacturing uranium components for nuclear weapons, cases, and other weapons components; evaluating and performing tests of these components for surveillance purposes; storing Category I/II quantities of highly enriched uranium (HEU); conducting dismantlement, storage, and disposition of HEU; and supplying HEU for use in naval reactors. In addition, the nuclear weapons production facilities process uranium and plutonium to meet DOE/NNSA's nonproliferation goals and counterterrorism activities.

- **National Security Site.** The Nevada National Security Site in Nye County, Nevada, outside of Las Vegas, provides facilities, infrastructure, and personnel to the national security laboratories and other organizations to conduct nuclear and nonnuclear experiments. It is the primary location where experiments using radiological and other high hazard materials are conducted and the primary location where HE-driven plutonium experiments can be conducted.

### **Recent Organization Accomplishments**

- ***Effective Stewardship of the Nuclear Deterrent.***
  - Celebrated 20 years of science-based stockpile stewardship, certifying to the President once again that the stockpile remains safe, secure, and reliable without underground nuclear explosive testing.
  - Exceeded the cumulative production goal of 70 percent for the W76-1 LEP, surpassing the original FY 2016 production requirement by 22 percent and recording its highest production quantity for any fiscal year to date.
  - Formally authorized the production engineering phase of the B61-12 LEP. This approval comes after four years of work in the development-engineering phase of the program. This is the final development phase prior to production. The first production unit (FPU) of this weapon is planned for Fiscal Year 2020, and full-scale production will follow the FPU.
  - Completed the fourth successful qualification flight test for the W88 Alt 370 program. This launch, along with the Critical Radar Arming and Fuzing Test, demonstrated that the weapon system alteration is functional and in line with NNSA's commitment to complete development on schedule.
  - Used dedicated experimental facilities to obtain critical data for Stockpile Stewardship and Sustainment. Experiments were performed at LLNL's National Ignition Facility and SNL's Z-Machine to obtain data on the atomic structure and strength of plutonium at high pressures that simulate weapon environments. Additionally, the Dual-Axis

Radiographic Hydrodynamic Test (DARHT) Facility at LANL, the Jasper gas gun, and subcritical experiments at the NNS, provided information on weapon component behavior during the implosion process. The data from these three facilities was used to improve nuclear weapons simulation codes to more accurately predict weapon behavior.

- Installed the Advanced Simulation and Computing (ASC) Trinity-Haswell high performance computing system at LANL; the ASC is now in classified computing mode to support of the annual assessment of the stockpile.
- ***Preventing, Countering and Responding to Proliferation and Terrorist Threats.***
  - Supported the 2016 Nuclear Security Summit, including design and execution of the Apex Gold ministerial level exercise involving 37 countries and 4 international organizations.
  - Provided technical and scientific expertise in support of the U.S. delegation during Joint Comprehensive Plan of Action (JCPOA) negotiations.
  - Provided the International Atomic Energy Agency (IAEA) with technologies, training, and expertise to meet its safeguards and monitoring missions.
  - Since January 2009,
    - Converted to low enriched uranium (LEU) or verified the shutdown of 34 research reactors and isotope production facilities.
    - Concluded and brought into force six new or renewed Agreements for Civil Nuclear Cooperation (123 Agreements) with China, the Republic of Korea, Vietnam, Taiwan, the IAEA, and the Russian Federation.
    - Completed removal or confirmed disposition of 169 kilograms of fissile nuclear material, bringing the number of countries free of all highly enriched uranium (HEU) to 28, plus Taiwan.
    - Down-blended additional HEU to achieve a cumulative total of 45.9 metric tons of U.S. excess, weapons-usable HEU.
    - Secured approximately 1,574 domestic and international buildings containing radiological material.
    - Helped prevent illicit trafficking of nuclear and radiological materials by deploying radiation detection equipment to 367 strategic locations and providing 117 mobile detection systems.
    - Delivered on schedule all 15 planned space-based nuclear detonation detection sensor payloads to the USAF to maintain the United States' Nuclear Detonation Detection Systems (USNDS) as required by public law.
    - Delivered emergency radiation detection capabilities to more than 46 countries since 1999; assisted with and supported major public events, such as the Olympics, Presidential Inauguration, the Super Bowl, the World Series, and the Pope's visit.
  - Trained and exercised over 13,000 domestic and foreign officials on radiological and nuclear incident preparedness and response.

- ***Advancing Navy Nuclear Propulsion.***
  - Provided technical support and 24/7 reach back for the Navy’s nuclear fleet of 73 submarines and 10 aircraft carriers.
  - Achieved criticality in the first reactor of the new *Gerald R. Ford*-class aircraft carrier.
  - Continued reactor plant design for the *Ohio*-class submarine replacement.
  - Continued advanced technology development for the refueling of S8G land-based prototype reactors, including insertion of new materials and technology for *Ohio*-class submarine replacement.
  - Operated Modifications and Additions to a Reactor Facility (MARF) and S8G land-based prototype reactors, delivering 2,832 trained nuclear operators to the fleet (17 percent increase over FY 2014).
- ***Building an Effective and Efficient Workforce.***
  - Implemented revised hiring strategy, including use of Excepted Service authorities (for FY 2016: 192 new employees, 29 entry level, and 59 mid to senior level excepted service).
  - Initiated comprehensive staffing analysis to determine long term staffing needs in support of program management for LEP and major construction projects, and to mitigate the pending retirement wave.
  - Increased Federal Employee Viewpoint Survey (FEVS) participation from 44.2 percent in 2014 to 68.8 percent in 2016 and showed a 9.4 percent increase in employee satisfaction (overall 65.3 percent). These results move NNSA to above the government average.
  - Doubled the funding devoted to employee development and training from FY 2014 levels.
- ***Modernizing the Infrastructure***
  - Halted the growth, in FY 2016, of NNSA’s deferred maintenance, which had grown over \$250 million from FY 2012 to FY 2014.
  - Enabled new infrastructure opportunities, such as the Kansas City National Security Campus and the Pantex Administrative Support Complex, by using alternative approaches to modernizing the aging infrastructure, including consideration of alternative financing where appropriate.
  - Invested in critical capabilities, such as the Uranium Strategy, including the Uranium Processing Facility (UPF), the UPF Site Readiness Subproject delivered \$20 million under budget, and the Plutonium Strategy, including the Chemistry and Metallurgy Research Replacement (CMRR) Project.

### **Leadership Challenges**

- ***Future Year Nuclear Security Plan (FYNSP) Challenges.*** The NNSA portion of the President’s FY 2017 Budget Request to OMB outlined current priorities. NNSA continues to

conduct further analysis of the requirements and resources needed to meet commitments in the FYNSP and beyond.

- ***Infrastructure and Operations.*** NNSA's ability to achieve its programmatic goals is dependent upon a safe and reliable infrastructure. More than 50 percent of NNSA's facilities are over 40 years old, and almost 30 percent date to the Manhattan Project. Current requirements to support the life extension programs, the SSP, nuclear threat reduction and nuclear propulsion are challenging this aging NNSA infrastructure. During the course of the Senate deliberation on the New START Treaty, the Administration committed to certain modernization milestones for the nuclear weapons infrastructure. Years of underinvestment in NNSA's infrastructure have resulted in increasing failures due to age and condition. NNSA cannot accomplish its mission to sustain the nuclear deterrent, reduce nuclear threats and support the Nuclear Navy over the long-term without reliable and modern programmatic, security, and general purpose infrastructure that provides necessary capabilities for today, allows for the opportunity to expand future capacities, and minimizes risks. In a statement given to the Subcommittee on Strategic Forces of the House Committee on Armed Services, the NNSA Administrator noted that there is "no greater risk to NNSA's multiple and vital missions than the current state of our aging infrastructure."
- ***Governance and Management Reform.*** The Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise report, among others, determined that significant and wide-reaching reform was needed in order to correct systemic problems in NNSA's management practices and culture. NNSA has prepared a Governance and Management Implementation Plan that identifies 41 specific initiatives to improve governance and management of NNSA's nuclear security enterprise. Although the majority of these initiatives will be fully implemented in early calendar year 2017, many have already brought considerable improvement to the enterprise. These initiatives should be assessed to ensure they are having the desired effect in the future.
- ***Nuclear Counterterrorism and Incident Response.*** NNSA manages, sustains, and deploys the Department's incident response assets that support nuclear counterterrorism, counterproliferation, crisis response, and consequence management events worldwide. Much of the expert scientific/technical cadre are part-time, and drawn from across DOE to support incident response training, drills, and exercises. Increasingly, these experts are unavailable due to conflicts with day-to-day programmatic requirements. Additionally, although regularly maintained, equipment supporting these missions has exceeded planned service life, degrading the ability to perform these critical National missions. NNSA also operates the Emergency Operations Center (EOC) and emergency management framework for the Department as a whole.
- ***Information Technology Cybersecurity.*** NNSA must manage new and emerging threats such as increasing and more sophisticated cyber-attacks that will require ongoing vigilance and state-of-the-art systems.
- ***Global Material Security.*** In the context of unprecedented challenges to global security from non-state actors, NNSA must continue to enhance security, protection, control, and accounting for all nuclear and radiological materials worldwide (in accordance with internationally accepted recommendations), and prevent the illicit trafficking of nuclear weapons and nuclear and radiological materials. NNSA, working with its interagency and

international partners, needs to leverage the success of the recently concluded Nuclear Security Summit process to maintain momentum, especially as most of the United States' cooperation with Russia on physical and nuclear material security has come to an end.

- ***Nuclear Nonproliferation Research and Development.*** NNSA is responsible for a wide ranging set of nonproliferation capabilities, including much of the basic detection work supporting the U.S. Government. NNSA is responsible for building and delivering long-term host satellite strategies for nuclear detection sensors to maintain the USNDS, as required by law. NNSA must meet this requirement in accordance with U.S. Air Force timelines, but the unresolved DOD acquisition strategy puts the NNSA program at risk.
- ***Material Management and Minimization.*** NNSA is working worldwide to minimize and, when possible, eliminate excess weapons-usable nuclear material. As part of the minimization effort, NNSA is leading development of a new class of LEU reactor fuel to convert high performance research reactors in the United States and Europe. The fuel development and qualification effort, expected to last into the mid-2020s, is technically challenging and will require sustained financial and political support from the next Administration to maintain schedule and be successful. Permanently disposing of excess nuclear material includes overcoming technical, political, and regulatory challenges that currently complicate NNSA's ability to remove vulnerable weapon-usable nuclear material from foreign countries.
- ***Plutonium Disposition.*** NNSA is working to establish an affordable and executable plutonium disposition pathway that will enable NNSA to move material out of the state of South Carolina; meet commitments under the Plutonium Management and Disposition Agreement; and achieve permanent threat reduction. The Administration proposed terminating the mixed oxide fuel (MOX) Project in the FY 2017 President's Budget Request, but awaits congressional approval of this proposal. DOE/NNSA is pursuing Dilute and Disposal as an alternative approach to satisfy the mission of plutonium disposition. NNSA must also continue to work and address the ongoing litigation with the State of South Carolina over the MOX Fuel Fabrication Facility (MFFF) and related legal issues.

## **Critical Events and Action Items**

### **3-Month Events**

- **Support the 2017 Presidential Inauguration.** In conjunction with U.S. Secret Service and the FBI, support radiological/nuclear security during the 2017 Presidential Inauguration. (January 2017)
- **Molybdenum-99 (Mo-99).** One of NNSA's commercial partners (NorthStar) expects to receive approval from the U.S. Food and Drug Administration (FDA) to produce Mo-99 for medical use in the United States. This will be the first commercial Mo-99 production in the United States for over three decades and will likely receive press coverage. If the FDA application is unsuccessful and the project is delayed, NNSA will likely receive inquiries from the Hill and press, and letters from other commercial entities asking for additional funding. (January 2017)

- **Bannister Federal Complex (BFC).** NNSA is requesting \$200 million no later than January 2017 to transfer the BFC to a private developer for disposition. If unable to complete the transfer, NNSA will have the responsibility for site remediation and disposition of the BFC. The most recent cost estimate for Federal demolition and remediation is roughly an additional \$1 billion and would take a minimum of 10 years of additional site characterization and evaluation of additional remediation options under the Superfund evaluation process.
- **Report to Congress on the Plan for the Nuclear Weapons Stockpile, Nuclear Weapons Complex, Nuclear Weapons Delivery Systems, and Nuclear Weapons Command and Control System (1043 Report).** This congressionally required report lays out the 10 year road map for the nuclear weapons infrastructure, the nuclear weapons complex, the delivery vehicles and nuclear command and control, and includes the ten year budget for both agencies. (Due February 1, 2017)
- **Report to the President on the Status of the Nuclear Weapons Stockpile (ROSA).** This congressionally required report provides the President with confirmation from the Secretaries of Energy and Defense that the nuclear weapons stockpile is safe, secure, reliable, and militarily effective, without the need for nuclear testing. (Due to the President by February 1, 2017 although the Secretaries of Defense and Energy have agreed to accelerate this timeline to December 31, 2016. The President forwards the ROSA to Congress by March 15, 2017)
- **Report to Congress on the Stockpile Stewardship and Management Plan (SSMP) and the Report to Congress on Nuclear Nonproliferation, Prevent, Counter and Respond (NPCR).** These companion reports inform the planning and programmatic activities of two of NNSA's three mission pillars. (Due March 15, 2017)
- **Joint Surety Report to the President.** Provides an assessment by the Secretary of Energy and the Secretary of Defense on the Nation's nuclear weapons safety, security, control, emergency response, and inspection and evaluation programs. This report is completed in response to a Presidential Directive. (Due March 31, 2017)

#### 6-Month Events

- **Counterterrorism Exercise.** Support counterterrorism, forensics, and consequence management activities during the National Level Exercise "Vital Archer 17/Gotham Shield." This exercise will involve senior level decision makers at the White House and within the interagency. (April 2017)
- **Nuclear Nonproliferation Treaty (NPT) Preparatory Committee Meeting.** The first NPT Preparatory Committee meeting to the 2020 Review Conference will take place at a time of heightened scrutiny of nuclear disarmament efforts by the Nuclear Weapon States, and the United States in particular. Many Non-Nuclear Weapon States have criticized previous U.S. disarmament efforts and have been successful in generating support for a United Nations mandate to commence negotiations on a treaty banning the use or possession of nuclear weapons. The next Administration will need to develop arguments that counter such efforts while at the same time consider whether further steps may be undertaken in the areas of nuclear disarmament and nuclear disarmament verification. (April 24 – May 5, 2017)

- **Secretarial Determination Required to Continue Uranium Barter.** A new Secretarial Determination of no adverse impact on the uranium market must be signed before May 1, 2017, to enable NNSA and the Office of Environmental Management (EM) to continue uninterrupted uranium transfers that partially fund their programs. If a determination is not issued by May 1, 2017, uranium transfers would cease. If so, NNSA would default on its uranium down-blending contract, resulting in not only tens of millions of dollars in fees and layoffs at the commercial down-blending facility, but most importantly, NNSA would lose the Department's only option for unobligated uranium supply needed to support tritium production until the Department's domestic uranium enrichment capabilities are operational. The Department would need to spend billions of dollars sooner than currently planned in order to stand up domestic uranium enrichment capability sooner and produce unobligated uranium to fabricate nuclear power reactor fuel for tritium production. (May 2017)
- **Emerging Threats Mock Deployment in Panama.** The Emerging Threats Program develops and maintains the capability to rapidly respond, if asked, to support the removal of weapons usable nuclear material from countries of concern. The scope of work includes in-country stabilization, packaging, and removal of nuclear materials through the deployment of self-sufficient, trained rapid response teams and mobile facilities. The program conducts mock deployments to test its capability to address emerging threats every few years in a variety of climates to ensure short-term readiness. (May 2017)

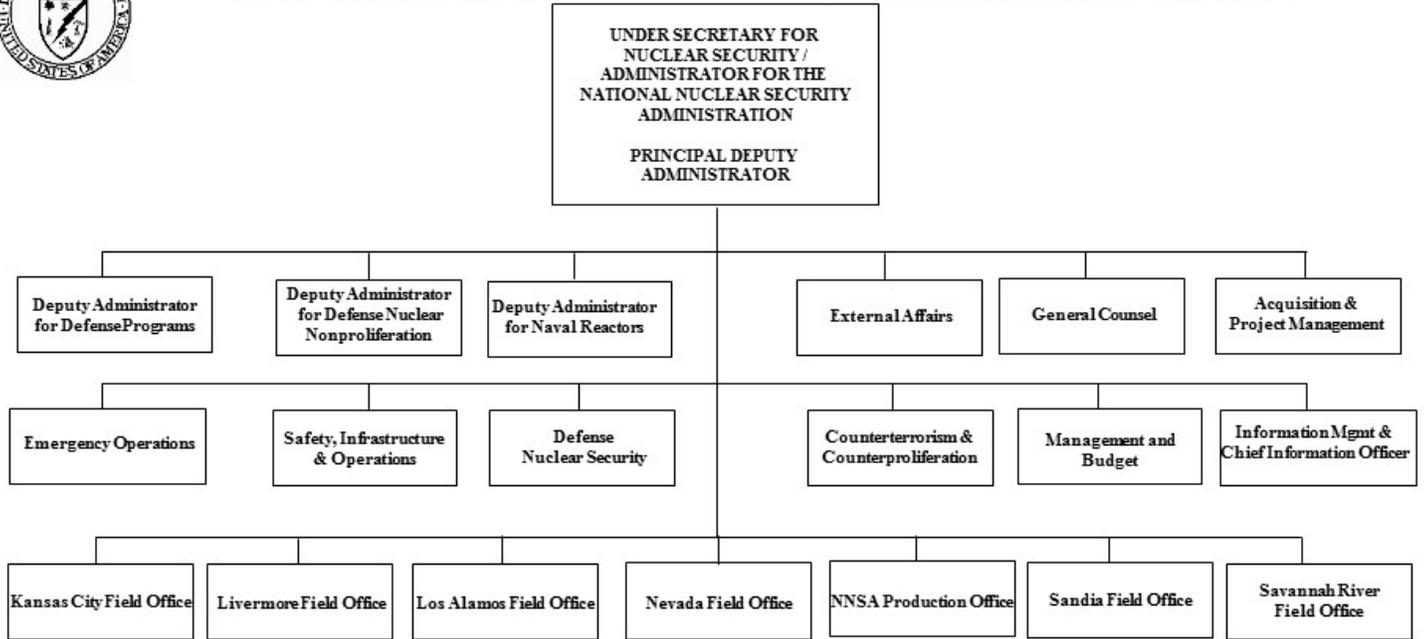
## 12-Month Events

- **Design Basis Threat (DBT)/Graded Security Protection (GSP) Implementation Strategy.** From the strong foundation provided by the 2003 and 2008 DBT upgrades, NNSA is continuing to invest in physical security upgrades improvements designed to keep NNSA sites among the best-defended and most secure facilities in the world. Analysis will occur over the next 6-9 months to determine site-specific implementation strategies for a new DBT.
- **Convert the Miniature Neutron Source Reactor (MNSR) in Nigeria from HEU Fuel to LEU Fuel.** NNSA is working with China and the IAEA to convert Chinese-origin MNSRs from HEU to LEU fuel. There are seven MNSRs around the world: two in China, one each in Ghana, Nigeria, Iran, Pakistan, and Syria. The Chinese converted one of their two MNSRs ahead of the 2016 Nuclear Security Summit, and Ghana's MNSR conversion is expected in December 2016. (August 2017)

# Organizational Chart



## NATIONAL NUCLEAR SECURITY ADMINISTRATION



## Appendix 1

<b>Field Office</b>	<b>Facility</b>
<p><b>Kansas City Field Office (KCFO)</b> 14520 Botts Road, Kansas City MO 64147 <a href="http://nnsa.energy.gov/fieldoffices/kansascity">http://nnsa.energy.gov/fieldoffices/kansascity</a></p> <p><b>Field Office Manager:</b> Mark Holecek</p> <p><b>Phone:</b> 816-488-3342</p> <p><b>E-mail:</b> mark.holecek@nnsa.doe.gov</p>	<p>The Kansas City National Security Campus (KCNSC), located near Kansas City, Missouri, is responsible for manufacturing and procuring non-nuclear weapon components for nuclear weapons, including electronic, mechanical and engineered material components. It supports national laboratories, universities, and U.S. Industry.</p>
<p><b>Livermore Field Office (LFO)</b> B311, 700 East Avenue, Livermore, CA 94550 <a href="http://nnsa.energy.gov/fieldoffices/livermore">http://nnsa.energy.gov/fieldoffices/livermore</a></p> <p><b>Field Office Manager:</b> Nicole Nelson-Jean</p> <p><b>Phone:</b> 925-422-6265</p> <p><b>Email:</b> Nicole.nelson-jean@nnsa.doe.gov</p>	<p>The Lawrence Livermore National Laboratory (LLNL), located in Livermore, California, is a design laboratory that is responsible for the safety and reliability of the nuclear explosives package in nuclear weapons. It supports surveillance, assessment, and refurbishment of the nuclear weapons stockpile. LLNL also possesses unique high-energy-density physics capabilities and scientific computing assets.</p>
<p><b>The Los Alamos Field Office (LAFO)</b> 3747 West Jemez Rd, Los Alamos, NM 87544 <a href="http://nnsa.energy.gov/fieldoffices/losalamos">http://nnsa.energy.gov/fieldoffices/losalamos</a></p> <p><b>Field Office Manager:</b> Kim Davis Lebak</p> <p><b>Phone:</b> 505-667-5491</p> <p><b>E-mail:</b> kimdavis.lebak@nnsa.doe.gov</p>	<p>The Los Alamos National Laboratory (LANL), located in Los Alamos, New Mexico, is a design laboratory responsible for the safety and reliability of the nuclear explosives package in nuclear weapons. This lab possesses unique capabilities in neutron scattering, enhanced surveillance, radiography, and plutonium science and engineering.</p>
<p><b>Nevada Field Office (NFO)</b> 232 Energy Way, North Las Vegas, NV 89030 <a href="http://www.nnss.gov">http://www.nnss.gov</a></p> <p><b>Field Office Manager:</b> Steve Lawrence</p> <p><b>Phone:</b> 702-295-3211</p> <p><b>Email:</b> steven.lawrence@nnsa.doe.gov</p>	<p>The Nevada National Security Site (NNSS), located in Las Vegas, Nevada, safely conducts high-hazard operations, testing, and training in support of NNSA, the U.S. Department of Defense, and other agencies.</p>
<p><b>NNSA Production Office (NPO)</b> 301 Bear Creek Road, Oak Ridge, TN 37831 Highway 60 @ FM 2373, Amarillo, TX 79120 <a href="http://nnsa.energy.gov/fieldoffices/npo">http://nnsa.energy.gov/fieldoffices/npo</a></p> <p><b>Field Office Manager:</b> Geoffrey Beausoleil</p> <p><b>Phone:</b> 865-576-0752</p> <p><b>Email:</b> Geoffrey.beausoleil@npo.doe.gov</p>	<p>NPO includes the Pantex Plant in Amarillo, Texas, and the Y-12 National Security Complex in Oak Ridge, Tennessee. The Pantex Plant includes support of the nuclear weapons life extension programs; nuclear weapons dismantlement; the development, testing, and fabrication of high explosive components; and interim storage and surveillance of plutonium pits. The Y-12 National Security Complex manufactures, evaluates, and tests uranium and</p>

	lithium for nuclear weapons components; dismantles, stores, dispositions, and down-blends highly enriched uranium (HEU); supports nonproliferation and counterterrorism activities; and provides enriched uranium for the United States Navy and research reactors.
<p><b>Sandia Field Office (SFO)</b>  1515 Eubank Blvd SE, Albuquerque, NM 87123  <a href="http://nnsa.energy.gov/fieldoffices/sandia">http://nnsa.energy.gov/fieldoffices/sandia</a>  <b>Field Office Manager:</b> Jeffrey P. Harrell  <b>Phone:</b> 505-845-6036  <b>E-mail:</b> Jeffrey.Harrell@nnsa.doe.gov</p>	Sandia National Laboratories (SNL) – are responsible for the development, testing, and production of specialized nonnuclear components and quality assurance and systems engineering for all U.S. nuclear weapons. SNL has locations in Albuquerque, NM; Livermore, CA; Kauai, HI; and Tonopah, NV.
<p><b>Savannah River Field Office (SRFO)</b>  SRS Road 1A, Aiken, SC 29802  <a href="https://srs.gov">https://srs.gov</a>  <b>Field Office Manager:</b> Douglas Dearolph  <b>Phone:</b> 803-208-3689  <b>E-mail:</b> douglas.dearolph@nnsa.srs.gov</p>	NNSA operates facilities at the Savannah River Site to supply and process tritium, a radioactive form of hydrogen that is a key component of nuclear weapons. SRS loads tritium and non-tritium reservoirs; including reclamation of previously used tritium reservoirs, processing of reservoirs; recycling, extraction, and enrichment of tritium gas and lab operations.

# National Nuclear Security Administration Office of Defense Programs

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of Defense Programs (NA-10)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-2181

#### Website:

<https://nnsa.energy.gov/aboutus/ourprograms/defenseprograms>

#### Point-of-Contact E-mail Address:

[philip.calbos@nnsa.doe.gov](mailto:philip.calbos@nnsa.doe.gov)

### Supporting the DOE Mission

NNSA, through its Office of Defense Programs (NA-10), ensures the Nation maintains a safe, secure, and reliable nuclear stockpile through the application of unparalleled science, technology, engineering, and manufacturing. One of the nuclear security enterprise's core missions – which includes maintaining the active stockpile; executing life extension programs (LEPs); and maintaining the infrastructure, experimental and computational capabilities, and expertise that underpin the deterrent – is referred to as the Stockpile Stewardship and Management Program.

NNSA partners with the Department of Defense (DOD) to provide a safe, secure, and effective deterrent for the Nation through interactions with the Navy, the Air Force, and the Nuclear Weapons Council. To execute its mission, NA-10 integrates activities across the

weapons complex, and with other NNSA programs and staff offices, including the Office of Acquisition & Program Management and the Office of Safety, Infrastructure, and Operations.

### **Mission Statement**

Sustain a safe, secure, and effective nuclear deterrent through the application of science, technology, engineering, and manufacturing.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$5,373.1 million
FY 2016 Enacted Budget	\$6,168.4 million
FY 2017 Budget Request	\$6,325.4 million

### **Human Resources**

FY 2016 Allocated Staffing Level: 736 (175 FSE Appropriation; 561 Weapons Activities Appropriation/Secure Transportation Asset).

### **History**

Following the end of the Cold War, the United States discontinued production of new nuclear warheads and voluntarily ended underground nuclear explosive testing. The Stockpile Stewardship Program (SSP) was consequently developed to certify the stockpile. Today, NNSA fields a suite of innovative experimental capabilities, diagnostic equipment, high-performance computers, and modern computer codes that build on past nuclear explosive test data to simulate the dynamics of nuclear weapons, and test non-nuclear components. The DOE/NNSA Laboratory Directors now have more detailed knowledge than could have been attained through nuclear explosive testing. The SSP is central to the nuclear weapons and arms control policy, and enables NNSA to extend the lifespan and ensure the continued safety and effectiveness of weapons that have reached the end of their original design life through LEPs. These life extensions address aging and performance issues, enhance safety features, and improve security.

NNSA's nuclear weapons activities are carried out in a nationwide network of government-owned, contractor-operated national security laboratories, test sites, and nuclear weapons production sites. These sites, collectively known as NNSA's nuclear security enterprise, provide the necessary research, development, testing, and production capabilities needed to maintain the reliability, security, and safety of the weapons stockpile.

Part of keeping the U.S. nuclear weapons stockpile safe and effective includes working with DOD to maintain the quantity and quality of weapons necessary for U.S. national security needs. The New Strategic Arms Reduction Treaty (START) between the United States and the Russian Federation, signed by President Obama and ratified by the U.S. Senate in 2010, caps the strategic deployed nuclear arsenals of each country at 1,550 warheads. Today's stockpile is the smallest it has been since the Eisenhower Administration, and NA-10 is actively working to meet the reduced stockpile quantity levels by safely dismantling and disposing of those nuclear weapons that have been designated in excess of U.S. national security needs.

As the threat environment evolves and becomes more unpredictable, and especially as the current weapons in the U.S. nuclear stockpile age and become increasingly difficult and expensive to maintain, NNSA is working to revitalize the entire nuclear weapons enterprise to be smaller,

safer, more secure, and more efficient. NNSA must be better able to quickly respond to technical problems in the stockpile, and be able to rapidly respond to unforeseen national security needs.

### **Functions**

- ***Current Stockpile and Maintenance.*** Sustain the Nation’s nuclear weapon stockpile.
- ***Weapons Life Extension Programs (LEPs) and Alterations (ALT).*** Prevent operational gaps while enhancing safety, security, and use control of the nuclear weapons stockpile. NNSA focuses on delivering four programs: the W76-1 LEP and the W88 Alteration (Alt) 370, including refreshment of the conventional high-explosive main charge, for the Navy submarine-launched ballistic missile systems; and the B61-12 LEP and the W80-4 LEP for the Air Force’s cruise missile.
- ***Research, Development, Test, and Evaluation.*** Provide tools and capabilities for stockpile assessment and certification, including the development of predictive capabilities.
- ***Infrastructure Modernization.*** Provide strategic investments to modernize infrastructure and manufacturing capabilities.
- ***Secure Transportation Asset.*** Provide safe and secure shipment of nuclear weapons, weapons components, and special nuclear material.

### **Recent Organization Accomplishments**

The Office of Defense Programs’ recent significant organization accomplishments include:

- ***Stockpile Stewardship and Certification.*** Celebrated 20 years of science-based stockpile stewardship, certifying that the stockpile remains safe, secure, and reliable without the need for underground nuclear explosive testing.
- ***Stockpile Stewardship and Management Plan (SSMP).*** Produced the DOE/NNSA Fiscal Year 2017 SSMP Biennial Plan Summary. This is the agency’s enterprise plan for programs and organizations that develop and maintain the scientific tools, capabilities, and infrastructure necessary to fulfill the Department’s nuclear deterrence mission. The SSMP and its companion document – the Nuclear Prevent, Counter and Respond Report – are the planning documents for two of NNSA’s core missions.
- ***W88 Warhead Flight Test.*** Completed its fourth successful qualification flight test for the W88 Alt 370 program. This launch, along with the Critical Radar Arming and Fuzing Test, demonstrated that the weapon system alteration is functional and in line with NNSA’s commitment to complete development on schedule.
- ***Dedicated Experimental Facilities.*** Used dedicated experimental facilities to obtain critical data for Stockpile Stewardship and Sustainment. Experiments were performed at the National Ignition Facility at Lawrence Livermore National Laboratory and Sandia National Laboratory’s Z-Machine to obtain data on the atomic structure and strength of plutonium at high pressures that simulate weapon environments. Additionally, the Dual-Axis Radiographic Hydrodynamic Test Facility at Los Alamos National Laboratory (LANL) and the Jasper gun and subcritical experiments at the Nevada National Security Site provided information on weapon component behavior during the implosion process. The data from these three facilities was used by nuclear weapons designers to improve nuclear weapons simulation codes to more accurately predict weapon behavior.

- **LANL Computing Center.** Installed the Advanced Simulation and Computing Trinity-Haswell high performance computing system in LANL's Strategic Computing Complex; the system is now in classified computing mode to support of the annual assessment of the stockpile.
- **B61-12 LEP.** Formally authorized the production engineering phase of the B61-12 LEP. This approval comes after four years of work in the development-engineering phase of the program. This is the final development phase prior to production. The first production unit of this weapon is planned for Fiscal Year 2020, and full-scale production will follow.

### **Leadership Challenges**

The Office of Defense Programs leadership challenges include:

- **Nuclear Weapons Stockpile.** The nuclear weapons stockpile is aging and contains many obsolete technologies that must be replaced as the service lives of the warheads are extended. This requires significant investment in new technologies and tools to certify warheads without nuclear explosive testing.
- **Infrastructure Recapitalization.** The DOE/NNSA mission depends on facilities, infrastructure, and equipment for success. Current requirements to support the LEPs, the SSP, nuclear threat reduction, and nuclear propulsion are challenging this aging infrastructure. Without infrastructure recapitalization, the risk to nuclear weapons maintenance and LEPs will increase.
- **Research, Development, Test and Evaluation (RDTE).** RDTE underpins the Science-Based Stockpile Stewardship required to maintain a safe, secure, and reliable nuclear weapons stockpile without nuclear explosive testing. Continued support for this RDTE base is required.
- **Ensure Supply Chain Integrity.** DOE/NNSA must sustain the trustworthiness of the nuclear weapon supply chain that provides necessary parts (e.g., radiation-hardened electronics) to address the potential for sabotage, malicious introduction of an unwanted function, or subversion of a function without detection.
- **Personnel Succession Planning.** At most sites and across the Federal workforce, the number of employees eligible for retirement is increasing, and aggressive programs are needed to recruit and retain high-quality individuals and provide new personnel with opportunities to acquire the experience and expert judgment to sustain the stockpile. Preservation and transfer of institutional and technical knowledge prior to the exodus of retirement-eligible members are critical to the continuity of nuclear weapons work.

### **Critical Events and Action Items**

#### **3-month events**

- **Report to the President on the Status of the Nuclear Weapons Stockpile (ROSA).** This congressionally required report provides the President with confirmation from the Secretaries of Energy and Defense that the nuclear weapons stockpile is safe, secure, reliable, and militarily effective, without the need for nuclear testing. Due to the President by February 1, 2017; the President forwards the ROSA to Congress by March 15, 2017, although the

Secretaries of Defense and Energy have agreed to accelerate this timeline to December 31, 2016.

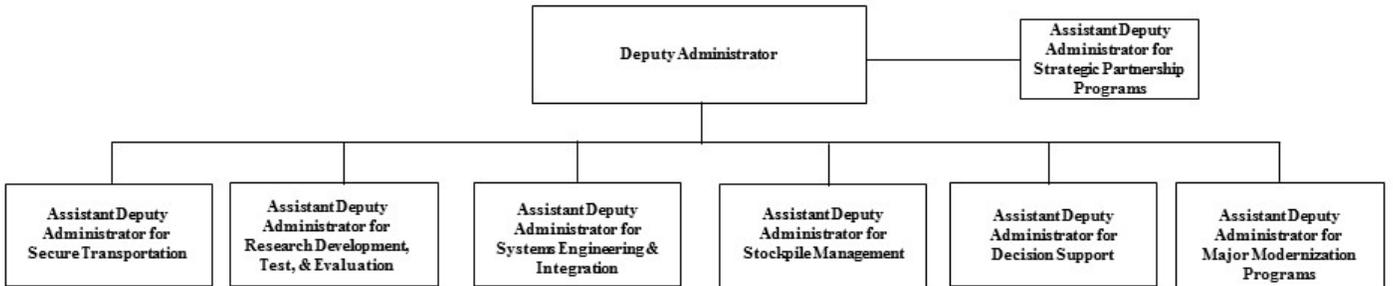
- *Report to Congress on the Plan for the Nuclear Weapons Stockpile, Nuclear Weapons Complex, Nuclear Weapons Delivery Systems, and Nuclear Weapons Command and Control System (1043 Report)*. This congressionally required report lays out the 10 year road map for the nuclear weapons infrastructure, the nuclear weapons complex, the delivery vehicles, and nuclear command and control, and includes the ten year budget for both agencies. (Due no later than 30 days after budget submission)
- *Report to Congress on the Stockpile Stewardship and Management Plan*. (Due March 15, 2017)

### **12-month events**

- Warheads are transported on a specially modified trailer (the Safeguards Transporter, or SGT). Modifications to the SGT are scheduled in order to improve safety and security of warheads in transit prior to the production phase for the W88 Alt 370. (September 2017)
- The SGT is reaching its end of life. The follow-on transportation unit, the Mobile Guardian Transporter (MGT), needs to complete its manufacturing readiness review to support production completion prior to SGT's retirement. (September 2017)
- Part of the SSP includes obtaining a robust understanding of how plutonium reacts under extreme pressure. NNSA requires an enhanced radiographic capability in order to observe this under experimental conditions. To inform decisions regarding the conceptual design for this advanced radiographic capability, NNSA must complete a series of experiments to gather scientific data. The next such experiment, Eurydice, is scheduled for fall 2017. (September 2017)
- This year, the Qualification Alternative to Sandia Pulsed Reactor (QASPR) program will be used to qualify components of the W88 Alt 370. This program ensures that components are protected against the effects of radiation (known as "radiation hardened"). (September 2017)
- Plutonium inside of nuclear weapons is referred to as "pits". The United States has not had the ability to produce plutonium pits since Rocky Flats in Colorado was closed down. This capability is being reconstituted at LANL, which is set to produce two development plutonium pits this year, driving toward satisfying a stockpile need of 50-80 pits per year. (September 2017)

**Organizational Chart**

**DEPUTY ADMINISTRATOR FOR  
DEFENSE PROGRAMS**



# National Nuclear Security Administration Office of Defense Nuclear Nonproliferation

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic Objective 5:** Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure.

**Strategic Objective 6:** Reduce global nuclear security threats.

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of Defense Nuclear Nonproliferation  
(NA-20)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-0645

#### Website:

<https://nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

#### Point-of-Contact E-mail Address:

[anne.harrington@nnsa.doe.gov](mailto:anne.harrington@nnsa.doe.gov)

### Supporting the DOE Mission

The Office of Defense Nuclear Nonproliferation (NA-20) is a key component of NNSA's mission to prevent, counter, and respond to nuclear threats. One of the gravest threats the United States and the international community face is the possibility that terrorists or rogue nations will acquire nuclear weapons or other weapons of mass destruction (WMD). NA-20 works closely with a wide range of international partners, key U.S. federal agencies, the U.S. national laboratories, and the private sector to secure, safeguard, and/or dispose of dangerous nuclear and radiological material, and detect and control the proliferation of related WMD technology and expertise.

NA-20 actively draws on the science, technology, engineering, and manufacturing

capabilities resident in the DOE complex of laboratories, plants, and sites to solve a diverse set of technical challenges, including monitoring foreign weapons programs, verifying treaty compliance, and combating nuclear terrorism and proliferation.

### **Mission Statement**

Provide policy and technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$1,561.4 million
FY 2016 Enacted Budget	\$1,632.9 million
FY 2017 Budget Request	\$1,466.8 million

### **Human Resources**

FY 2016 Allocated Staffing Level: 187.

### **History**

DOE's nuclear nonproliferation mission is rooted in U.S. national security policies and requirements extending as far back as the Atomic Energy Act. DOE's nonproliferation work continues to be influenced by legal requirements and policy commitments stemming from the Treaty on the Non-Proliferation of Nuclear Weapons (NPT, 1970); the breakup of the Soviet Union in 1991; and the September 11, 2001, terrorist attacks.

The Office of Defense Nuclear Nonproliferation was created when NNSA was established in March 2000. At its creation, NA-20 assumed responsibility over long-time DOE programs that fulfilled the statutory responsibilities over the export control requirements for nuclear technologies, as well as U.S. obligations under the NPT, primarily by providing support to the International Atomic Energy Agency (IAEA) for its nuclear safeguards inspectorate. These original DOE nonproliferation programs also provided technical support to U.S. policy development and implementation of strategic nuclear arms reduction and other multilateral nuclear nonproliferation treaties and agreements. NA-20 also assumed responsibility for the DOE programs created after the breakup of the Soviet Union to address the proliferation risks involving nuclear weapons, weapons-grade nuclear materials, and their storage facilities in the newly independent Soviet states.

NNSA's nonproliferation programs further evolved to support the U.S. response to the September 11, 2001, terrorist attacks by increasing efforts to curtail trafficking by deploying radiation detection monitors at foreign border crossings, seaports, and airports around the world; accelerating longstanding activities to convert research reactor cores from highly enriched uranium (HEU) to low enriched uranium (LEU); improving security for and disposition of thousands of radiological materials that could be used in dirty bombs; and increasing research into new technologies, techniques, and materials to help prevent the spread of WMD to hostile countries or terrorist groups.

From 2000 until the present, NA-20 has implemented several high-profile nuclear threat reduction initiatives, including:

- The “Megatons to Megawatts” program, the 20-year U.S.-Russia cooperative effort (completed in 2012) to dispose of 500 metric tons of HEU from dismantled Soviet nuclear warheads (enough material for 20,000 nuclear weapons), through down-blending to LEU that was used in U.S. commercial nuclear power plants.
- The Four-Year Effort accelerated DOE/NNSA’s cooperative efforts to remove or confirm disposal of over 3,000 kilograms of vulnerable weapons-grade nuclear material around the world, freeing 11 countries plus Taiwan of all HEU (over the program’s lifetime, over 5,000 kilograms of HEU and separated plutonium were removed or confirmed disposed, freeing 31 countries plus Taiwan of all HEU material). The Four-Year Effort also included accelerated work to upgrade the physical security of 200 facilities that store weapons-grade nuclear material.
- The Plutonium Disposition program, the U.S. effort to dispose of no less than 34 metric tons of excess weapon-grade plutonium, in accordance with the 2000 U.S.-Russia Plutonium Management and Disposition Agreement (PMDA).

### **Functions**

- ***Material Management and Minimization.*** Minimize and, when possible, eliminate excess weapons-usable nuclear material, ensure sound management principles for remaining nuclear materials, and support peaceful uses of nuclear energy by making nuclear materials available for these purposes.
- ***Global Material Security.*** Enhance security, protection, control, and accounting for all nuclear and radiological materials worldwide (in accordance with internationally accepted recommendations), and prevent the illicit trafficking of nuclear weapons and nuclear and radiological materials.
- ***Nonproliferation and Arms Control.*** Prevent the proliferation of WMD—as well as relevant dual-use materials, equipment, technology, and expertise—by state and non-state actors through nuclear safeguards and export controls, and by strengthening nonproliferation and arms control regimes.
- ***Defense Nuclear Nonproliferation Research and Development.*** Develop innovative unilateral and multilateral technical capabilities to detect, identify, and characterize foreign nuclear weapons program activities; and illicit diversion and movement of special nuclear material and nuclear detonations globally. These capabilities allow DOE/NNSA to meet U.S. nuclear treaty verification and detonation detection requirements, as well as broader U.S. government nuclear security missions, including interdiction and nuclear counterterrorism and incident response activities.

### **Recent Organization Accomplishments**

- ***Joint Comprehensive Plan of Action (JCPOA).*** Provided critical support to the negotiation of the JCPOA (also known as the “Iran deal”), which reached Implementation Day in January 2016. NNSA and its national laboratory partners provided extensive analysis to U.S. negotiators to ensure that the technical and scientific underpinnings of the deal were solid.

NA-20 will continue to play a leading role in JCPOA implementation to verify the complex technical parameters of the agreement are fully implemented.

- ***Nuclear Security Summit.*** Played a pivotal role in the 2016 Nuclear Security Summit in Washington, DC. The program was responsible for developing and implementing many of the U.S. and international commitments associated with the Summit process, such as removals of highly enriched uranium and plutonium, and securing high-priority radiological sources within the United States.
- ***Apex Scenario-Based Policy Discussion.*** Designed and directed the Ministerial-level *Apex Gold* Scenario-Based Policy Discussion exercise (part of the 2016 Nuclear Security Summit) with NA-80 and the Foreign Ministry of the Netherlands. The exercise focused on national decisions and international coordination in a nuclear terrorism event. More than 40 countries and international organizations participated in this groundbreaking interactive discussion based around a fictional, transnational nuclear terrorism threat involving HEU out of regulatory control.
- ***Fast Critical Assembly Facility Uranium and Plutonium Removal.*** Worked with Japan to remove over 500 kilograms of uranium and plutonium from the Fast Critical Assembly facility. This was the largest project by a country to remove civilian nuclear material from its territory through the Nuclear Security Summit process.
- ***Source Physics Experiment (SPE) Conventional Explosion.*** Concluded Phase I of the SPE series. The SPE series, conducted at the Nevada National Security Site, improves the United States' confidence in detecting and characterizing underground nuclear explosions globally.
- ***Global Burst Detector (GBD) Operational Payloads.*** Delivered two GBD operational payloads to the U.S. Air Force, and successfully tested a third GBD payload, an on-board/on-orbit GBD sensor, and an after launch of Global Positioning System (GPS) satellite II-F-12. Collectively, these deliveries maintain the global U.S. strategic capability to monitor nuclear detonations.

### **Leadership Challenges**

- ***Staffing.*** NNSA is losing a significant number of talented professionals (both Federal and contractor) due to retirement. NA-20 has had success recruiting early career professionals, but is having more difficulty bringing in mid-to-senior level individuals. This is creating a gap in the level of expertise and capabilities of the workforce.
- ***Plutonium Disposition.*** DOE/NNSA is working to establish an affordable and executable plutonium disposition pathway in order to move material out of the state of South Carolina; meet commitments under the PMDA; and achieve permanent threat reduction. The Administration proposed terminating the mixed oxide fuel (MOX) Project in the FY 2017 President's Budget Request, but awaits Congressional approval of this proposal. DOE/NNSA is pursuing Dilute and Disposal as an alternative approach to satisfy the mission of plutonium disposition. NNSA must also continue to work and address the ongoing litigation with the State of South Carolina over the MOX Fuel Fabrication Facility (MFFF) and related legal issues.
- ***Nuclear Nonproliferation Research and Development.*** NNSA is responsible for building and delivering long-term host satellite strategies for nuclear detection sensors to maintain the

USNDS. NNSA must meet this requirement in accordance with U.S. Air Force timelines, but the unresolved DOD acquisition strategy for this project reduces confidence in the accuracy of these timelines, which puts the NNSA program at risk.

- **Reactor Conversion.** NNSA is developing a new class of LEU reactor fuel to convert high performance research reactors in the United States and Europe. The fuel development and qualification effort is expected to last into the mid-2020s and the next Administration will play a key role in its success. Efforts to develop these LEU fuels are technically challenging, and will require sustained financial and political support to maintain schedule and be successful.
- **Nuclear Material Removal.** NNSA is working worldwide to minimize and, when possible, eliminate excess weapons-usable nuclear material. Permanently disposing of excess nuclear material includes overcoming technical, political, and regulatory challenges that currently complicate NNSA's ability to remove vulnerable weapon-usable nuclear material from foreign countries.

### **Critical Events and Action Items**

#### **3-month events**

- Complete pre-conceptual design package on the future dilute and dispose line item project for surplus plutonium, and approve mission need. (December 2016)
- One of NNSA's commercial partners, NorthStar, expects to receive approval from the U.S. Food and Drug Administration (FDA) to produce Mo-99 for medical use in the United States. This will be the first commercial Mo-99 production in the United States in more than three decades and will likely receive press coverage. If the FDA application is unsuccessful and the project is delayed, NNSA will likely receive inquiries from the Hill, press, and letters from other commercial entities asking for additional funding. (January 2017)

#### **6-month events**

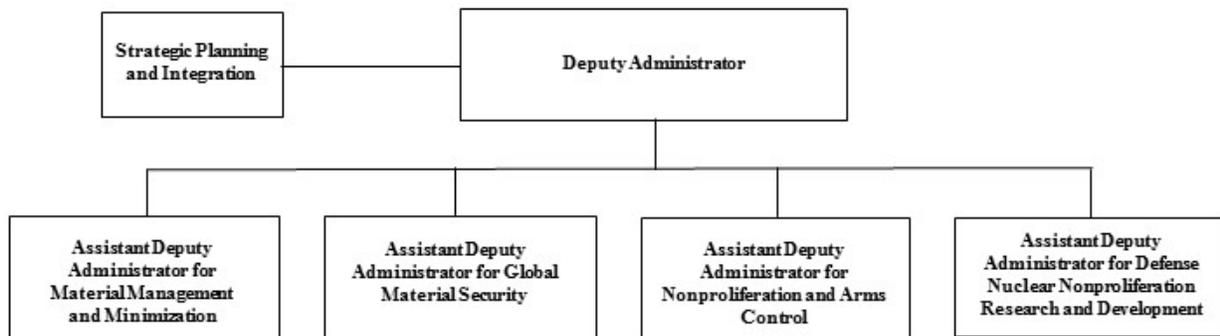
- The first NPT Preparatory Committee meeting for the 2020 Review Conference will take place at a time of heightened scrutiny of nuclear disarmament efforts by the Nuclear Weapon States, and the United States in particular. (April 24 – May 5, 2017)
- The Emerging Threats Program develops and maintains the capability to rapidly respond, if asked, to support the removal of weapons usable nuclear material from countries of concern. The scope of work includes in-country stabilization, packaging, and removal of nuclear materials through the deployment of self-sufficient, trained rapid response teams and mobile facilities. The program conducts mock deployments to test its capability to address emerging threats every few years in a variety of climates to ensure short-term readiness. (May 2017)
- NNSA is working with China and the IAEA to convert Chinese-origin Miniature Neutron Source Reactors (MNSR) from HEU to LEU fuel. There are seven MNSRs around the world: two in China, and one each in Ghana, Nigeria, Iran, Pakistan, and Syria. The Chinese converted one of their two MNSRs ahead of the 2016 Nuclear Security Summit, and Ghana's MNSR conversion is expected in December 2016. (August 2017)

## **12-month events**

- Canada developed the “Safe Low-Power Critical Experiment” (SLOWPOKE) research reactors which operate using approximately 900 grams of 93 percent HEU fuel in a lifetime core. One of the last two SLOWPOKE reactors still in operation using HEU, located in Alberta, has notified the Canadian government that it plans to shut down and return its HEU fuel to the United States in the fall of 2017. NA-20 is actively working with the site on packaging and transportation plans to support this shipment. Costs for this shipment are being born by Canada. (September 2017)
- Deliver USNDS payloads (two in FY 2017 and three in FY 2018), in accordance with negotiated schedule with USAF to meet nuclear test verification and military requirements. (FY 2017 and FY 2018)
- Implement Presidential Policy Directive 33 (PPD-33) Interagency Policy Council recommended actions to meet detection and early warning requirements for strategic nuclear proliferation detection. (FY 2017 – FY 2021)

**Organizational Chart**

**DEPUTY ADMINISTRATOR FOR  
DEFENSE NUCLEAR NONPROLIFERATION**



# National Nuclear Security Administration Office of Naval Reactors

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of Naval Reactors (NA-30)

#### Address:

1240 Isaac Hull Ave SE  
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#### Point-of-Contact E-mail Address:

[james.f.caldwell@navy.mil](mailto:james.f.caldwell@navy.mil)

### Mission Statement

Naval Reactors is a joint Department of Energy/Department of the Navy organization solely responsible for all naval nuclear propulsion work, beginning with reactor technology development, continuing through reactor operation, and ending with reactor plant disposal. Naval Reactors ensures the safe and reliable operation of reactor plants in nuclear-powered submarines and aircraft carriers (constituting over 45 percent of the Navy's major combatants), and fulfills the Navy's requirements for new and affordable nuclear propulsion plants that meet current and future national defense requirements, delivered on schedule and within budget.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$1,233.8 million
FY 2016 Enacted Budget	\$1,375.5 million
FY 2017 Budget Request	\$1,420.1 million

## **Human Resources**

FY 2016 Allocated Staffing Level: 238.

## **History**

In 1946, shortly after the end of World War II, Congress passed the Atomic Energy Act, which established the Atomic Energy Commission (AEC) to succeed the wartime Manhattan Project and gave it sole responsibility for developing atomic energy in the United States. At this time, Captain Hyman G. Rickover recognized the military implications of successfully harnessing atomic power for submarine propulsion and knew it would be necessary for the Navy to work with the AEC. By 1949, Captain Rickover had forged an agreement between the AEC and the Navy, and Rickover's new organization contracted with Westinghouse to develop a facility – the Bettis Atomic Power Laboratory – to develop a pressurized-water reactor design. In 1950, Rickover contracted with General Electric to determine whether a liquid-metal reactor design, which General Electric was developing at the AEC's Knolls Atomic Power Laboratory, could be applied to naval propulsion.

The USS NAUTILUS, using the pressurized-water design, and the USS SEAWOLF, using the liquid-metal design, were built, tested, commissioned, and put to sea in 1955 and 1957, respectively. The USS SEAWOLF successfully operated at sea until the first refueling experience demonstrated that pressurized-water technology was preferable for naval applications. The USS NAUTILUS became the basis for all subsequent U.S. nuclear-powered warship designs. In less than seven years, Captain Rickover obtained Congressional support to develop an industrial base in a new technology; pioneered new materials; designed, built, and operated a prototype reactor; established a training program; and took a nuclear-powered submarine to sea. The success and speed of development revolutionized naval warfare and has ensured America undersea and nuclear propulsion superiority ever since.

For more than 34 years, Admiral Rickover headed the Naval Nuclear Propulsion Program (the Program). Upon retirement in 1982, he left behind a tradition of technical excellence and an organization staffed by experienced professionals dedicated to designing, building, and operating naval nuclear propulsion plants safely, and in a manner that protects people and the environment. The result is a fleet of nuclear-powered warships unparalleled in capability, and a mature, highly disciplined infrastructure of Government and private organizations that continue to build on Admiral Rickover's legacy.

In the 1970s, Government restructuring moved the Naval Nuclear Propulsion Program from the AEC to what became the Department of Energy. In 2000, the Program became a part of the newly formed NNSA within DOE. During these transitions, the Program retained its dual DOE/Navy responsibility, and has maintained its basic organization, responsibilities, and technical discipline.

A strong Navy is crucial to the security of the United States, a nation with world-wide interests that receives the vast majority of its trade and energy via trans-oceanic shipment. Navy warships are deployed around the world every day to provide a credible “forward presence,” ready to respond wherever America’s interests are threatened. Nuclear propulsion plays an essential role in this, providing the mobility, flexibility, and endurance that today’s smaller Navy requires to meet a growing number of missions. Over 45 percent of the Navy’s major combatants are nuclear-powered, including 10 aircraft carriers, 54 attack submarines, 14 ballistic missile submarines (the Nation’s most survivable strategic deterrent), and four covert, high-volume, precision strike submarines.

Presidential Executive Order 12344 and Public Laws 98-525 and 106-65 set forth the total responsibility of Naval Reactors for all aspects of the Navy’s nuclear propulsion, including research, design, construction, testing, operation, maintenance, and ultimate disposition of Naval nuclear propulsion plants. Naval Reactors’ responsibility includes all related facilities, radiological controls, and environmental, safety, and health matters; as well as selection, training, and assignment of personnel. All of this work is accomplished by a lean network of dedicated research laboratories; nuclear-capable shipyards; equipment contractors and suppliers; and training facilities which are centrally controlled by a small headquarters staff. The Director of Naval Reactors, Admiral James F. Caldwell, Jr., also serves as a Deputy Administrator in the National Nuclear Security Administration.

Naval Reactors maintains an outstanding record of over 158 million miles safely steamed on nuclear power. The Program currently operates 100 reactors and has accumulated over 6,800 reactor-years of operations. A leader in environmental protection, the Program has published annual environmental reports since the 1960s, which show that the Program has not had an adverse effect on human health or the quality of the environment. Because of the Program’s demonstrated reliability, U.S. nuclear-powered warships are welcome in more than 150 ports of call in over 50 foreign countries and dependencies.

Since USS NAUTILUS (SSN 571) first signaled “Underway on nuclear power” in 1955, U.S. nuclear-powered ships have demonstrated their superiority in defending the country, from the start of the Cold War, to today’s unconventional threats, and beyond to future advances that will ensure the dominance of American sea power well into the future.

### **Functions**

By employing a small but high-performing technical base, the teams at Naval Reactors’ four Program sites – the Bettis Atomic Power Laboratory in Pittsburgh; the Knolls Atomic Power Laboratory and Kesselring Site in upstate New York; and spent nuclear fuel facilities in Idaho – can perform the research and development, analysis, engineering and testing needed to support today’s fleet at sea and develop future nuclear-powered warships. Importantly, Naval Reactors’ labs perform the technical evaluations that enable thorough assessment of emergent issues and delivery of timely responses that ensure nuclear safety and maximize operational flexibility. This technical base supports more than 15,000 nuclear-trained Navy sailors, who safely maintain and operate the 100 nuclear propulsion plants in the fleet around the globe. Industry-specific business conditions, external technological developments, and Department of Navy decisions all impact the performance of naval nuclear propulsion work. Naval nuclear propulsion work is an integrated effort involving the DOE and the Navy, which are full partners in the Program. Functions include:

- ***Long Range Planning, Budgeting and Performance Monitoring.*** Naval Reactors has a fully integrated long-range planning, budgeting, and execution system. Through this system, Naval Reactors determines general work direction and associated funding needs; balances competing work priorities against available funds; and establishes, monitors, and enforces performance measures and controls. Work and funding priorities are established in relation to the core mission. The Program uses this focused, multi-year planning process to evaluate any deficiencies. The resulting review process validates 100 percent of the budget twice a year and serves as Naval Reactors' change control process.
- ***Design, Development, and Operational Oversight of Nuclear Propulsion Plants for Naval Vessels.*** Naval Reactors uses two Government-owned, contractor-operated laboratories, the Bettis Atomic Power Laboratory and the Knolls Atomic Power Laboratory, which are predominately involved with the design, development, and operational oversight of nuclear propulsion plants for naval vessels. Through these laboratories, and through testing conducted at the Advanced Test Reactor located on the Idaho National Laboratory, the Program performs the following:
  - Design, analysis, and testing of reactor plant components and systems;
  - Development, testing, examination, and evaluation of nuclear fuel systems, materials, and manufacturing and inspection methods necessary to ensure the continued safety and reliability of reactor plants in Navy warships;
  - Testing, maintenance, and servicing at land-based prototype nuclear propulsion plants;
  - Execute planned inactivations of shut down, land-based reactor plants in support of environmental cleanup goals; and,
  - Radiological, environmental, and safety monitoring and ongoing cleanup of facilities necessary to protect people, minimize release of hazardous effluents to the environment, and comply with all applicable regulations.
- ***Internal and External Reviews and Audits.*** Naval Reactors evaluates the effectiveness, relevance, and progress towards achieving its goals, objectives, and targets by conducting various internal and external reviews and audits. Naval Reactors Headquarters provides continuous oversight and direction for all elements of Program work. A dedicated Government Headquarters professional staff expert in nuclear technology makes all major technical decisions regarding design, procurement, operations, maintenance, training, and logistics. Headquarters engineers set standards and specifications for all Program work, while on-site Headquarters representatives monitor the work at the laboratories, prototypes, shipyards, and prime contractors.

### **Recent Organization Accomplishments**

The Office of Naval Reactors recent significant organization accomplishments include:

- ***New Reactor Designs.*** In recent years, Naval Reactors has progressed three new reactor designs:
  - Initial reactor start-up was achieved in both reactor plants of PCU GERALD R. FORD (CVN 78), the first new design aircraft carrier propulsion plant in 40 years. This historic

milestone represents the culmination of almost 20 years of dedicated and sustained effort by Naval Reactors and its field activities, DOE/NNSA laboratories, nuclear industrial base suppliers, the Navy design team, and the nuclear shipbuilders. The design for the GERALD R FORD class aircraft carrier reactor plant (A1B) increases core energy, provides nearly three times the electric plant generating capability, and requires half the number of reactor department sailors as compared to today's aircraft carriers.

- The VIRGINIA Forward Fit reactor core is being manufactured for delivery to the shipyard in 2017. The VIRGINIA Forward Fit core uses advancements in fuel and manufacturing technologies to deliver 8% more core energy at 15% lower cost than the base VIRGINIA Class reactor.
- The design of the Ohio-Class Replacement ballistic missile submarine reactor plant (S1B) which will feature a life-of-ship core and electric drive, ensuring the most survivable leg of the nuclear triad is available to meet the STRATCOM strategic deterrence requirements.
- **Refueling Land-Based Prototype Reactor.** Design and preparations are underway for the refueling of the Land-based (S8G) Prototype reactor in upstate New York. The refueling will commence in 2018 to insert prototypic fuel for the Ohio-Class Replacement and other advanced technologies. This refueling will provide an additional 20 years of operation, enabling the Program's research and development (R&D) and nuclear operator training missions.
- **Facility Sustainment Plans.** Naval Reactors is addressing its aging infrastructure at all four Program sites by establishing facility inspection plans, refocusing facility maintenance resources, and developing healthy recapitalization and construction plans. Current recapitalization efforts include the Spent Fuel Handling Recapitalization Project (SFHP) which will replace the 55-year old Expended Core Facility on the Idaho National Laboratory.
- **Deactivation and Decommissioning.** Naval Reactors maintains an aggressive deactivation and decommissioning (D&D) plan for the next 30 years to carefully manage the Program's infrastructure footprint, and to reduce environmental liabilities and future caretaking costs.
- **Management and Operating Contract Consolidation.** Consistent with ongoing efforts to generate efficiencies in light of growing requirements and constrained budgets, the Program consolidated the Management and Operating (M&O) contracts at the two government-owned, contractor operated laboratories into a single contract. The consolidated contract enabled Naval Reactors to leverage shared services in the contractor business support functions and ultimately facilitated a transformation into a single integrated organization under a single General Manager.

### **Leadership Challenges**

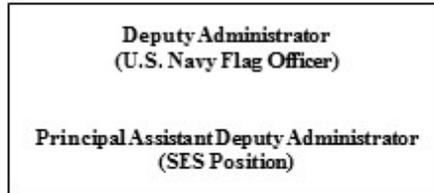
The Office of Naval Reactors leadership challenges include:

- **Appropriations Uncertainty.** The recurring nature of continuing resolutions (CRs) disrupts execution of the carefully laid out plans Naval Reactors employs to accomplish its work. While the Program has worked to standardize a set of processes to mitigate the work impact arising from shorter-term (e.g., one/three/six month CRs), including deferred hiring and equipment procurement plans, there is no credible way to retire every risk across the

enterprise. The uncertainty in the appropriations process drives a risk-averse approach that impacts laboratory staffing, knowledge transfer, project schedules, and financial execution. Naval Reactors expects to continue facing this challenge for the foreseeable future and will therefore continue to seek opportunities to mitigate CR impacts where feasible.

**Organizational Chart**

**DEPUTY ADMINISTRATOR FOR  
NAVAL REACTORS**



# National Nuclear Security Administration Office of Emergency Operations

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic Objective 6:** Reduce global nuclear security threats.

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 11:** Operate the DOE enterprise safely, securely, and efficiently.

### Organization Information

#### Name:

National Nuclear Security Administration (NNSA)

Office of Emergency Operations (NA-40)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-9892

#### Website:

<https://nnsa.energy.gov/ourmission/emergencyresponse>

#### Point-of-Contact E-mail Address:

[anthony.gipson@nnsa.doe.gov](mailto:anthony.gipson@nnsa.doe.gov)

### Supporting the DOE Mission

The Office of Emergency Operations (NA-40) implements a comprehensive, effective, and sustained Emergency Management Program that includes preparedness, readiness assurance, and core response capabilities for all-hazards events and continuity operations. NA-40 plays a key role in NNSA's mission to prevent, counter, and respond to nuclear threats.

The DOE/NNSA Emergency Management Enterprise ensures availability and viability to respond to all hazards, natural or man-made, that are a threat to any DOE and NNSA facility or field site.

## **Mission Statement**

Administers and directs the implementation and integration of emergency management programs across the DOE and NNSA complex.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$20.5 million
FY 2016 Enacted Budget	\$25.1 million
FY 2017 Budget Request	\$34.8 million

## **Human Resources**

FY 2016 Allocated Staffing Level: 50.

## **History**

NA-40 manages emergency management including the continuity program, emergency operations center, operations and exercises, and preparedness. Until NNSA's reorganization of the programs under the Nuclear Counterterrorism Incident Response (NCTIR) Program – Emergency Response, National Technical Nuclear Forensics, and the International Emergency Management and Cooperation – NA-40 was also responsible for these functions.

The FY 2016 Omnibus Appropriation accepted a DOE/NNSA request to move the NCTIR Program from the NNSA Weapons Appropriation to the Defense Nuclear Nonproliferation Appropriation. This change is consistent with NNSA's strategy to address the entire nuclear threat spectrum by preventing the acquisition of nuclear weapons or weapons-usable materials; countering efforts to acquire such weapons or materials; and responding to nuclear or radiological incidents.

## **Functions**

NA-40 administers and directs the implementation and integration of emergency management programs across the complex so that DOE/NNSA can respond promptly, efficiently, and effectively to any emergency involving or affecting its sites and facilities or activities. The Office is also responsible for response to any emergency in which DOE/NNSA equities can assist by applying the necessary resources to mitigate the consequences and protect workers, the public, the environment, and national security through the National Preparedness System and its associated Frameworks.

The Office serves as the interagency liaison for all emergency management activities, including coordination with the National Security Council and its Interagency Policy Committees. NA-40 establishes, charters, administers, and chairs the standing Emergency Management Coordinating Committee and the Emergency Management Advisory Committee.

- ***Plans and Policy.*** Develop, coordinate, and issue all DOE and NNSA emergency management policy and strategic plans; oversees the implementation of DOE's Emergency Management System for DOE and NNSA sites, facilities, and transportation activities; develops and issues directives, technical guides, technical standards, procedures, and protocols for emergency management; and provides technical assistance to DOE and NNSA

sites for emergency planning, information exchange, and continuous improvements in emergency management. Continues to be responsible for the development, implementation; and execution of the Continuity of Operations Plan for the Department.

- **Operations Support.** Responsible for the operation, communications, and infrastructure of all coordination, control, and communications nodes supporting DOE Headquarters and the NNSA. These nodes include: the DOE Operations Center; the Alternate Operations Center; the DOE Liaison Desk at the Department of Homeland Security; the Continuity of Operations Area; alternate DOE/NNSA senior leadership facilities at DOE West; and the DOE/NNSA devolution location at Albuquerque, NM. Activities include the 24/7/365 single-point-of-contact for departmental and interagency notifications regarding situations requiring centralized management such as, national emergencies, heightened international tension, Departmental emergencies, natural disasters, or acts of terrorism.
- **Operations and Exercises.** Prepare for and supports an integrated enterprise-wide command structure for DOE to manage and synchronize all-hazards emergencies from response through recovery. During an emergency, executes a National Incident Management System (NIMS)-compliant Unified Command/Coordination Structure (UCS). Develops and manage a comprehensive Homeland Security Exercise and Evaluation Program (HSEEP)-compliant exercise program; to include senior leader Federal and M&O participation in DOE enterprise-wide exercises and national-level exercises. Represents the Department in the White House directed, DHS/FEMA National Exercise Program.
- **Preparedness.** Develop a comprehensive training and education program for the DOE Emergency Management Enterprise stakeholders; develop and coordinates training events for headquarters personnel who will respond during an emergency event. Coordinate, synchronize, and disseminate requirements for emergency management training activities, and assist staff at DOE/NNSA Site offices in meeting emergency management readiness requirements.

### **Recent Organization Accomplishments**

- **Revised Defense Nuclear Facilities Safety Board (DNFSB) 14-01 Implementation Plan.** Revised DOE's Implementation Plan for DNFSB Recommendation 14-01, "Emergency Preparedness and Response," to improve implementation approach of actions and milestones.
- **Emergency Management Issues – Special Interest Group.** Conducted the 30<sup>th</sup> Emergency Management Issues – Special Interest Group (EMI-SIG) to discuss DOE O 151.1D revision and major comments by DOE HQ and Field Elements.
- **Criteria Review and Approach Document.** Developed draft standardized Emergency Management Criteria Review and Approach Document (CRAD) and initiated pilot test process at DOE/NNSA sites.
- **Unified Command Structure (UCS).** Stood up the UCS in support of National and Site specific exercises to include: Consolidate Nuclear Security Y-12, Idaho National Laboratory's (INL), NSTec Nevada, Waste Isolation Plant (WIPP), Eagle Horizon May 2016, a Marble Challenge Exercise, and Clear Path IV and Cascadia Rising in support of ESF-12 functions. Developed a progressive exercise schedule for the UCS, and developed the Charter for the Emergency & Incident Management Council (EIMC).

- ***Continuity of Operations Plans and Exercise.*** Updated DOE/NNSA Continuity of Operations Plans and supported 2016 Eagle Horizon COOP Exercise.
- ***Operations Center Management.*** Maintain 24/7/365 Operations Center, and continue to provide a common operating picture daily.

### **Leadership Challenges**

- ***Workforce Reorganization.*** Right size workforce to address full operational capability.
- ***Training and Exercises Participation.*** Full participation in training and exercises for stakeholders and senior level personnel.
- ***Emergency Management System Leadership.*** Continued maturation, stakeholder engagement, and development of doctrine to effectively and successfully lead the DOE Emergency Management System.

### **Critical Events and Action Items**

#### **3-month events**

- Emergency Management Initial Operational Capability (December 2016)

#### **6-month events**

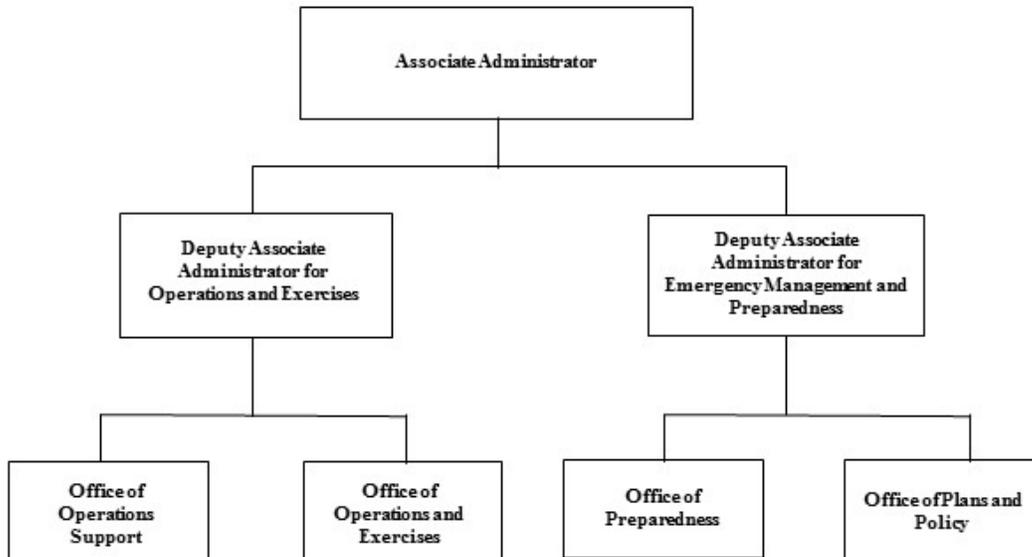
- Finalize and provide distribution of DOE Order 151.1D, *Comprehensive Emergency Management System*.
- Complete Communication Suite Upgrades.

#### **12-month events**

- Complete the following Initial Operational Capability training and exercises: Table Top Exercises 1, 2 and 3; Incident Command System (ICS) 300/400; Unified Command Group/Command Staff CPX; ICS/National Incident Management System (NIMS) Seminar; and Validation Exercise.

**Organizational Chart**

**ASSOCIATE ADMINISTRATOR FOR  
EMERGENCY OPERATIONS**



# National Nuclear Security Administration Office of Safety, Infrastructure and Operations

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic Objective 5:** Strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure.

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

**Strategic Objective 10:** Operate the DOE enterprise safely, securely, and efficiently.

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

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of Safety, Infrastructure and Operations  
(NA-50)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-8246

#### Website:

<http://nnsa.energy.gov/aboutus/ouroperations/infops>

#### Point-of-Contact E-mail Address:

[james.mcconnell@nnsa.doe.gov](mailto:james.mcconnell@nnsa.doe.gov)

### Supporting the DOE Mission

NNSA requires specialized programmatic and general-purpose infrastructure to support its core missions. The NNSA Office of Safety, Infrastructure and Operations (NA-50) is the programmatic owner for the general purpose infrastructure (also referred to as base, common, or core infrastructure) that is the backbone of the NNSA laboratories, plants, and sites.

NNSA's missions require secure production and laboratory infrastructure to meet immediate and long term needs. The Associate Administrator for Safety, Infrastructure and Operations develops and executes NNSA's infrastructure investment, maintenance, and operations programs and policies.

## **Mission Statement**

Enables safe operations, ensures effective infrastructure, and provides enterprise services to meet the 21st Century nuclear security enterprise needs.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$1,388.7 million
FY 2016 Enacted Budget	\$1,537.6 million
FY 2017 Budget Request	\$1,845.5 million

## **Human Resources**

FY 2016 Allocated Staffing Level: 111.

## **History**

NNSA established NA-50 in January, 2015. The Office was created from three existing organizations whose principal functions related to safety policy, oversight, and line management execution; infrastructure planning and execution; and nuclear materials management. While NNSA Field Office management focuses on the local contractor oversight, NNSA centralizes certain managerial functions at its corporate level in NA-50, including those for safety, infrastructure, nuclear materials transportation, and nuclear materials management.

Safe, reliable, and modern infrastructure at NNSA's national laboratories and production plants is absolutely essential for vital national security missions and the well-being of the workforce. NNSA's infrastructure is extensive, complex, and, in many critical areas, several decades old. More than half of NNSA's approximately 6,000 real property assets are over 40 years old, and nearly 30 percent date back to the Manhattan Project era. Many of the enterprise's critical utility, safety, and support systems are failing at an increasing and unpredictable rate.

Given competing priorities, the resources available to maintain NNSA's infrastructure have historically not kept pace with growing needs. NNSA's total deferred maintenance on fixed assets (real property) stood at \$3.7 billion at the end of Fiscal Year (FY) 2015. Last year, Secretary of Energy Moniz directed that infrastructure investment across all of DOE, including NNSA, be funded at levels sufficient to at least halt the growth of deferred maintenance starting in FY 2016. Significantly, the investments made in FY 2016 – requested in NNSA's budget and supported by Congress – halted the growth of deferred maintenance. NNSA's FY 2017 budget request, if similarly supported, will actually begin to decrease NNSA's deferred maintenance backlog.

In addition to addressing deferred maintenance, NNSA is also focused on reducing the risk aging infrastructure poses to our workers, the environment, and the mission. Accordingly, NNSA created standard prioritization criteria to better assess a project's relative importance to achieving program results and improving safety. NNSA also began requesting a higher percentage of funding for Recapitalization and Maintenance projects starting in FY 2015. These funding increases are essential to decreasing deferred maintenance, arresting the declining state of infrastructure, increasing productivity, improving safety, eliminating costly compensatory measures, and shrinking the NNSA footprint through the disposition of unneeded facilities.

## **Functions**

- ***Safety.*** Supports the effective development and consistent implementation of safety programs and requirements across the nuclear security enterprise, to include federal nuclear safety responsibilities and execution of worker safety and health programs. The Office supports the NNSA Chief of Defense Nuclear Safety (CDNS), the Cognizant Secretarial Office (CSO) for safety, and the Central Technical Authority (CTA) in executing functions assigned by NNSA and DOE directives. Safety functions include supporting senior NNSA leadership on issues involving nuclear safety policy, requirements, guidance and expectations; concurring on relief from requirements; and reviewing nuclear safety matters.
- ***Infrastructure.*** Maintain, operate, and modernize NNSA base infrastructure in a safe, secure, and cost-effective manner, and provides the necessary short- and long-term planning, systems analyses, and real estate services. The Office provides program management of facility operations, maintenance, and modernization (recapitalization, construction, and disposition) to ensure NNSA's base infrastructure is sustainable, effective, and efficient to safely meet DOE/NNSA needs.
- ***Enterprise Stewardship.*** Provides cost-effective packaging, nuclear material, and environmental stewardship services, and integrates nuclear material management activities across DOE/NNSA programs. The Office manages NNSA's environmental and sustainability activities to meet or exceed environmental compliance and sustainability requirements in support of a revitalized enterprise and mission objectives.

## **Recent Organization Accomplishments**

- ***National Asset Management Program Development.*** Increased NNSA's purchasing power by expanding the use of strategic procurements to achieve economies of scale for critical building systems that are common across the enterprise (e.g., roofs, HVAC, water).
- ***Asset Acquisition Strategies.*** Enabling new infrastructure opportunities, such as the Pantex Administrative Support Complex, by using alternative approaches to modernizing our aging infrastructure, including consideration of alternative financing where appropriate.
- ***Enterprise Information Award.*** Recognized as best-in-government by the National Defense Industrial Agency (NDIA) for excellence in enterprise information; winner of the 2015 Association for Enterprise Information's Excellence in Enterprise Information Award for the program management information system, known as G2.
- ***Deferred Maintenance.*** Halted the growth of NNSA's deferred maintenance, which had grown over \$250 million from FY 2012 to FY 2014.
- ***Enterprise Risk Management.*** Selected as a DOE best practice for NA-50's Enterprise Risk Management methodology.
- ***Excess Facility Demolition and Risk Reduction.*** Reduced safety and programmatic risk by demolishing Casa 2 and Casa 3 at the Los Alamos National Laboratory (LANL) and completing critical roof repairs at high risk excess facilities at Y-12 and Lawrence Livermore National Laboratory (LLNL).

## **Leadership Challenges**

- ***Aging Infrastructure.*** The NNSA infrastructure is large, old, and in poor condition. Many facilities and systems are well beyond useful life, and obsolescence limits maintenance and repair options. Further, excess facilities pose safety and programmatic risks.
- ***Environmental Compliance.*** Sustained investments are needed to maintain safe and environmentally compliant operations.
- ***Transfer of the Bannister Federal Complex.*** In 2014, NNSA successfully completed the relocation of the Kansas City National Security Campus from an obsolete, over-sized World War II-era facility to a modern, right-sized facility a few miles away in Kansas City, MO. NNSA is working with a private developer to transfer ownership of the old site (the Bannister Federal Complex), but an additional \$200 million is needed in January 2017 to meet negotiated schedules with the developer, regulators, and the Missouri Governor's office.
- ***Contractor Oversight.*** NNSA has recently issued Supplemental Directive 226.1B, *Site Governance Systems*, which emphasizes strategic partnering and alignment between functional, program and site office within NNSA and the M&O partners. It also adjusts the paradigm by which NNSA administers its contractor oversight functions. NA-50 is leading the effort to transform the current paradigm to make it more cooperative, more focused, and less transactional.

## **Critical Events and Action Items**

### **6-month events**

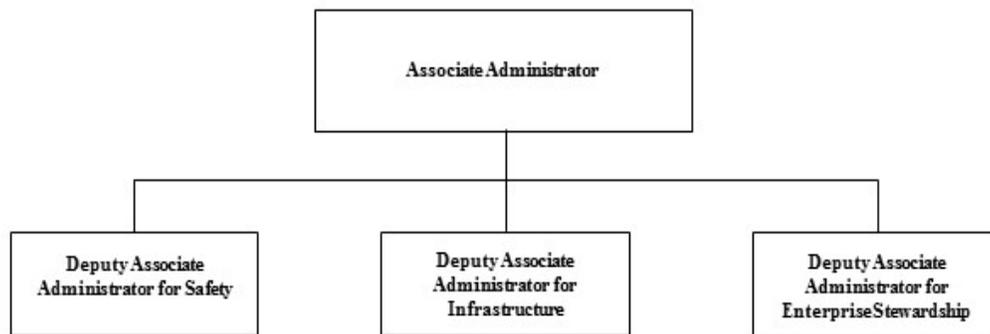
- \$200 million in funds are required in January 2017 to transfer the Bannister Federal Complex to a private developer in March 2017. Transfer of the Bannister property to the private developer will avoid roughly \$1 billion of additional, unplanned expenditures by NNSA.
- NNSA needs sustained and predictable funding to arrest the decline of infrastructure, which needs to be supported by the formulation of NNSA's budgets and subsequent appropriations.

### **12-month events**

- Complete implementation of NNSA's new site governance model.
- Assess and analyze the Nuclear Materials Management and Safeguards System (NMMSS) for contemporary functionality to support U.S. national security and nonproliferation objectives regarding inventories of accountable nuclear materials. Ensure integration of government and commercial inventories of these materials are accurately reflected in NMMSS data products.
- Implement an Energy Savings Performance Contract (ESPC) for the LANL Steam Plant Acquisition (SPA) to replace the existing steam plant, which is over sixty years old and at the end of its operational life (~\$100 million rough order of magnitude contract).

**Organizational Chart**

**ASSOCIATE ADMINISTRATOR FOR SAFETY,  
INFRASTRUCTURE & OPERATIONS**



# National Nuclear Security Administration Office of Defense Nuclear Security

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

**Strategic Objective 6:** Reduce global nuclear security threats.

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 11:** Operate the DOE enterprise safely, securely, and efficiently.

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

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)

Office of Defense Nuclear Security (NA-70)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

(with subordinate offices in Germantown, MD  
and Albuquerque, NM)

#### Telephone Number:

202-586-8900

#### Website:

[http://nnsa.energy.gov/aboutus/ourprograms/  
nuclearsecurity](http://nnsa.energy.gov/aboutus/ourprograms/nuclearsecurity)

#### Point-of-Contact E-mail Address:

[jeffrey.johnson@nnsa.doe.gov](mailto:jeffrey.johnson@nnsa.doe.gov)

### Supporting the DOE Mission

The Office of Defense Nuclear Security (NA-70) deploys layers of physical security; safeguards and security personnel; and sophisticated cyber security systems to protect the workforce, materials, infrastructure, and sensitive information essential to DOE mission success.

### Mission Statement

Develops and implements NNSA security programs to protect special nuclear material (SNM), people, information, networks, and facilities, and to control and account for SNM across the nuclear security enterprise.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$636.1 million
FY 2016 Enacted Budget	\$682.9 million
FY 2017 Budget Request	\$670.1 million

## **Human Resources**

FY 2016 Allocated Staffing Level: 83.

## **History**

The Office of Defense Nuclear Security was established by the 1999 NNSA Act (Sec 3232 (50 USC 2422)), and is headed by the Chief, Defense Nuclear Security (CDNS), who is appointed by the Secretary from among candidates recommended by the Administrator. The Chief reports to the Administrator and is responsible for the development and implementation of security programs for NNSA – including the protection, control, and accounting of materials – and for the physical and cyber security for all NNSA facilities. NA-70 has undergone several changes in organizational alignment since its creation. Cyber security authority was delegated by the CDNS to the NNSA Office of Information Management and Chief Information Officer (NA-IM), and is funded and managed by that office. To augment the office of the CDNS, NNSA established an Office of Associate Administrator for Defense Nuclear Security. This was initially a separate office, though under the policy direction of the CDNS. Eventually, the CDNS came to serve simultaneously as the Associate Administrator for Defense Nuclear Security. The CDNS is also designated as the Chief Security Officer (CSO) for NNSA, under a Secretarial security reform initiative that has established CSO's for each of the Under Secretaries, and a forum in which they routinely collaborate on common issues.

## **Functions**

- ***Security Operations and Programmatic Planning.*** Establish operational direction of the NNSA security program, evaluates the execution of the field security programs, and ensures line management evaluation programs are rigorous and provide high confidence that contractor security programs are operating in an effective manner. Develop implementing guidance that clarifies or elaborates on Departmental security requirements such as training requirements; assessment and implementation standards; and criteria for security programs; and implements and manages the NNSA Vulnerability Assessment Program.
- ***Resource Management and Mission Support.*** Direct and manage the Planning, Programming, Budgeting, and Evaluation process for NA-70, and coordinate the development and issuance of the NA-70 strategic plan; multi-year program plan; programmatic goals and objectives; and similar overarching programmatic guidance. Manage the full spectrum of security functions to successfully execute the specific operational security matters within the NNSA Headquarters' (HQ) office.
- ***Personnel and Facilities Clearance and Classification.*** Implement the personnel security access authorization program for NNSA field sites and the Facility Clearance Program for NNSA sites and NNSA HQ (Washington DC and Germantown offices). Oversee the nuclear

security enterprise-wide Classification and Controlled Information Program (CCIP), which includes the management, oversight, and assessment of the CCIP; and classification, declassification and trans-classification of NNSA information. Manage the Facility Clearance Program as well as completing Homeland Security Presidential Directive 12 (HSPD-12) sponsorship for non-Management and Operating NNSA support service contractors.

### **Recent Organization Accomplishments**

- ***Security Roadmap and Implementation Plan.*** Developed the NNSA Security Roadmap and Implementation Plan, which provides a comprehensive and integrated plan for addressing security challenges across the enterprise. The Implementation Plan has been divided into components, with each assigned to specific individuals, which includes field representation, to ensure implementation actions are carried out. Progress is tracked on a dashboard chart available to all organization members on a SharePoint site on the NNSA Portal (<https://nnsaportal>).
- ***Counter-Unmanned Aerial System (C-UAS) Response.*** Began developing capabilities and policy for C-UAS response. The increasing availability and improving capabilities of small Unmanned Aerial Systems (UASs) are enhancing their potential for use in illicit operations, including surveillance, disruption, and weaponization for use in an attack. NA-70's Center for Security Technology, Analysis, Response, and Testing (CSTART) at Sandia National Laboratories is tasked with the test and evaluation of the technologies that may be used to counter UASs at NNSA sites.
- ***Enterprise Vulnerability Assessment (VA).*** Completed Enterprise Vulnerability Assessment (E-VA) roll-up pilot. The E-VA Team visited all four of the Security Protection Level 0 and 1 (SPL 0-1) NNSA sites (protecting sensitive levels of SNM) and 3 of 4 Security Protection Level 4 (SPL-4) sites (protecting classified and less sensitive nuclear materials) from October 2014 through August 2015. The purpose of the visits was to conduct peer reviews of the site VA and risk assessment (RA) processes. The output of these processes are used at the site and headquarters to communicate security risk to senior decision makers. The E-VA team evaluated all of the processes to identify best practices and focus areas. The best practices identified during the peer reviews will form the basis of the future E-VA program, governed by a Supplemental Directive and field manual for the conduct of VAs and RAs.
- ***Personnel and Facility Clearance.*** Carried out personnel and facility clearance mission with innovative and progressive measures. Established video conference (WebEx) at five sites, by which adjudicators are able to remotely interview clearance candidates, saving travel costs and time. Implemented an interim clearance process to help mitigate impact of the Office of Personnel Management's (OPM) backlog in security background investigations. Oversight of a classification program that reviewed 30,000 documents for public release and more than 500,000 documents to support litigation. Successfully trained approximately 1,000 federal and contractor HQ staff who have access to classified email on how to portion mark email in order to ensure compliance with Executive Orders and Federal requirements.
- ***United Kingdom Ministry of Defence (MoD) and Atomic Weapons Establishment (AWE).*** Continued a robust relationship with the United Kingdom's MoD and AWE in furtherance of the 2006 Memorandum of Agreement between NA-70 and the Director General, Security and Safety. During FY 2015, NA-70 hosted MoD senior management in meetings at DOE

Headquarters and coordinated joint visits to field locations, and was hosted by the MoD in reciprocal visits to the UK. These interactions, together with joint meetings that included DOD counterparts, provided opportunities to share best practices and consider solutions to common challenges in the protection of nuclear assets.

### **Leadership Challenges**

- ***Security Roadmap.*** Continued improvement of NA-70's ability to execute its mission by following the Security Roadmap and Implementation Plan is fundamental to NA-70's ability to effectively carry out actions to meet all other challenges.
- ***Adjusting to an Updated Design Basis Threat (DBT).*** The DBT establishes the baseline threat characterization against which the NA-70 security program is developed and implemented. The DBT draws on information from a variety of sources, including the intelligence community's Nuclear Security Threat Capabilities Assessment. A recent update to the DBT requires NA-70 to assess its security posture, and make appropriate adjustments. NA-70 needs to manage risk by making decisions on priorities and consequences. NA-70 also must factor into its capabilities and processes an ability to address threats at the lower end of the violence spectrum that can nonetheless have serious impacts on NNSA mission accomplishment. There is also an evolving government-wide program to address insider threats, and NA-70 factors those considerations into its planning, to be able to effectively address scenarios in which an outside force is aided by an insider.
- ***Ten-Year Plan for Infrastructure Refresh.*** This initiative will address a backlog of infrastructure and security systems replacement, upgrades, and maintenance that has been estimated to be in excess of \$1 billion. Given the sizeable anticipated expense, NA-70 is focused on identifying less expensive options that preserve necessary levels of security. NNSA is using CSTART to perform much of the planning to assess needs and integrate solutions. This effort will determine the condition of critical security equipment (e.g., sensors, barriers, and cameras) and infrastructure (e.g., fiber optic wiring, lighting systems, and uninterrupted power source systems), as well as establish schedules for recurring maintenance, necessary replacements, and strategic upgrades over a 10-year cycle. Cost containment efforts will include completing the construction work needed to replace the aging security infrastructure and strategic planning to minimize the footprint where feasible. This comprehensive review will also identify sustainment needs that can be addressed to maintain system performance until recapitalization funds are available. Based on a site condition review, NNSA will continue to make prioritized investments in security infrastructure and technology.
- ***Test, Evaluate and Implement C-UAS Solution.*** While NA-70 has been proactive in its efforts to develop both technology and policy to address this evolving threat vector, it is clearly an area that will require an enduring focus. This challenge is shared across the government, and NA-70 works closely with Departmental counterparts, as well as interagency partners, to include the Federal Aviation Administration, and interested Congressional committees to establish the legal and policy foundation for an effective C-UAS capability. NA-70 also is pursuing technical research and development, with a view towards acquiring and fielding C-UAS systems across the enterprise.
- ***Improve Coordination/Collaboration on Security Across DOE, DOD, and DOE/NNSA's Office of Naval Reactors.*** Under one of its Security Roadmap initiatives, NA-70 has

established a program focused on developing a lively security culture throughout the NNSA workforce. NNSA was established based largely on a need to address a history of security concerns. Many studies leading up to the establishment of NNSA commented on the need to improve the acceptance of security measures by the workforce. More recent studies suggest there is continuing value in having a program designed to make the workforce aware of security threats and the consequences that can ensue from security failures. NA-70 has developed a program that visits field locations and provides in-person presentations to raise awareness and buy-in.

- ***Mitigate the Impact of OPM's Personnel Security Clearance Investigative Backlog.*** As a result of contracting and data breach/security issues, OPM is in the midst of a growing investigative backlog. OPM estimates that the backlog will reach its height in late 2016 or spring 2017, depending upon the resources it is able to bring to bear. At that time, OPM estimates Q (similar to Top Secret) initial investigations will take just under one year on average, and L (similar to Secret) initial and reinvestigations around 150 days. OPM estimates that it will be able to return to normal operations in 2019 or 2020. This backlog is creating problems across the government, with significant delays in clearing personnel to work on the classified programs essential to NNSA's missions. The problem is particularly acute at DOE/NNSA national security laboratories, plants, and sites, where over 3,500 current employees are awaiting completion of their investigations, and are unable to perform the duties for which they were hired. This number includes over 550 individuals designated as mission critical. NA-70's personnel security office has undertaken several measures to mitigate the impact of these delays, to include using an interim security clearance protocol and working with OPM to expedite mission critical background investigations.

## **Critical Events and Action Items**

### **3-month events**

- NNSA will report to Congress on NA-70's 10-Year Plan for refreshing/replacing security technology and infrastructure across the enterprise. This will be the culmination of a long-term study of the current state of security technology and infrastructure across the enterprise, and will mark the beginning of a time-phased, coordinated implementation process supportive of stable funding projections. (December 2016)
- The Office of Management and Budget has mandated that all agencies be Federal Information Processing Standard (FIPS-201) compliant by January 2017. This relates to NNSA's implementation of the requirements in the Homeland Security Presidential Directive -12 (HSPD-12) to have secure identification cards for access to facilities and systems. NA-70 is reviewing resource requirements needed to comply with this timeline for its un-cleared contractor workforce with a solution that meets HSDP-12 requirements.
- NA-70 will continue its comprehensive test and evaluation of capabilities to counter the threat posed by UAS with the objective of fielding counter-UAS capabilities across the enterprise. NA-70 is also engaged in multi-agency collaboration and discussion with congressional committees to develop policy and obtain legislation to provide necessary authorities to act on threats from UAS. (November 2016 – March 2017)

### **6-month events**

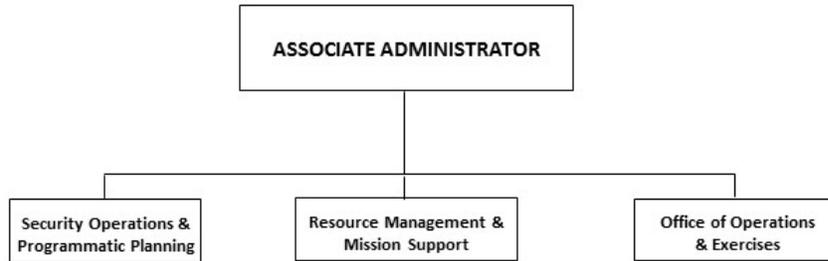
- NA-70 has been provided supplemental funding in the amount of \$30 million to upgrade security systems at the NPO's Y-12 Nuclear Security Complex in Tennessee and the Pantex Plant in Texas.
- The new DOE Order on DBT provides the parameters for the threats against which NNSA's security plans and capabilities will be arrayed. NNSA's laboratories and plants will provide NNSA with their estimates for costs and timelines to execute the program office's implementation plan.

### **12-month events**

- NNSA has an ongoing \$26 million line-item project at the Nevada National Security Site's Device Assembly Facility to replace their antiquated Process Equipment and Control Operation System with the enterprise standard known as Argus. Installation of Argus, developed by Lawrence Livermore National Laboratory, is consistent with NNSA's effort to upgrade and implement standardized security technology across the enterprise. Installation is projected to begin in late 2017.

**Organizational Chart**

**ASSOCIATE ADMINISTRATOR AND CHIEF OF  
DEFENSE NUCLEAR SECURITY**



# National Nuclear Security Administration Office of Counterterrorism and Counterproliferation

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic Objective 6:** Reduce global nuclear security threats.

### Organization Information

#### Name:

National Nuclear Security Administration  
(NNSA)  
Office of Counterterrorism and  
Counterproliferation (NA-80)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-1734

#### Website:

[https://nnsa.energy.gov/aboutus/ourprograms/  
ctcp](https://nnsa.energy.gov/aboutus/ourprograms/ctcp)

#### Point-of-Contact E-mail Address:

[jay.tilden@nnsa.doe.gov](mailto:jay.tilden@nnsa.doe.gov)

### Supporting the DOE Mission

The Office of Counterterrorism and Counterproliferation (NA-80) is a key component of NNSA's mission to prevent, counter, and respond to nuclear threats. The Department's counterterrorism and counterproliferation efforts originated in the nuclear weapons complex and continues to leverage stockpile-related facilities and technical expertise. Today, this responsibility cuts across many organizations in DOE and employs a "defense in depth" strategy to counter nuclear threats.

### Mission Statement

Counter nuclear terror threats, respond to nuclear incidents and accidents domestically and internationally, and sustain readiness in support of

DOE's "all-hazards" emergency management capability.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$203.5 million
FY 2016 Enacted Budget	\$209.3 million
FY 2017 Budget Request	\$237.1 million

### **Human Resources**

FY 2016 Allocated Staffing Level: 51.

### **History**

The Office of the Deputy Under Secretary for Counterterrorism was established in May 2003 to coordinate counterterrorism activities within NNSA, to marshal resources across all of DOE, and to be the Department's principal point of contact with other U.S. Government agencies and foreign governments on counterterrorism matters. Through two reorganizations since that time, the NA-80 mission has expanded to include the Department's nuclear incident response capabilities, broader international engagements, technical advisors to the interagency, including DOD/combatant commands, and responsibility for technical nuclear forensics.

NNSA's core expertise in nuclear sciences is central to the national effort to deter, detect, defeat, or attribute a radiological or nuclear terrorist attack. NNSA's counterterrorism programs play a crucial role in homeland security. DOE and other agencies rely on the national laboratories' knowledge of nuclear weapon design to identify novel and unconventional nuclear threats; support the design and testing of radiation detection systems; field capabilities to disarm a terrorist nuclear device; and evaluate the safeguards and security of nuclear facilities around the world.

NNSA response teams provide the nation's last line of defense to locate, identify, and render safe a nuclear device, as well as to provide consequence management support in the event of a radiological release.

NNSA works with other nations to develop emergency management programs and infrastructure to reduce the risk of radiological and nuclear threats and to mitigate the consequences of an accident or incident. In collaboration with other agencies, NNSA is expanding the overseas capacity to detect and interdict nuclear materials in transit.

NA-80 makes diverse contributions to U.S. and global nuclear security, including:

- Restricting access to nuclear weapons expertise and design information;
- Ensuring U.S. interagency awareness of the technical aspects of the improvised nuclear device (IND) threat;
- Building an integrated radiation detection and interdiction capability with law enforcement partners;

- Maintaining render safe, radiological/nuclear consequence management, and operational nuclear forensics capabilities;
- Supporting nuclear incident response capacity building with State, local, and international partners; and,
- Supporting a nuclear security enterprise that provides unparalleled scientific expertise across the homeland and national security spectrum.

The FY 2016 Omnibus Appropriation accepted a NNSA request to move the Nuclear Counterterrorism and Incident Response (NCTIR) Program from the NNSA Weapons Appropriation to the Defense Nuclear Nonproliferation Appropriation. This change is consistent with NNSA's strategy to address the entire nuclear threat spectrum by preventing the acquisition of nuclear weapons or weapons-usable materials; countering efforts to acquire such weapons or materials; and responding to nuclear or radiological incidents.

### **Functions**

- ***Nuclear Incident Policy and Cooperation.*** Strengthen domestic and international emergency preparedness and response through: nuclear counterterrorism and incident response training, exercises, and exchanges; development and implementation of emergency management programs; and provision of equipment, training, and operational guidance to international partners.
- ***Nuclear Threat Science.*** Provide technical expertise and tools to assess INDs or lost/stolen foreign nuclear weapons; inform IND implications for USG policies and programs; and provide advanced tools, techniques, and training to USG response organizations.
- ***Nuclear Forensics.*** Provide forensic expertise, facilities, and equipment to examine an interdicted nuclear device or materials in support of USG operations; collect and process debris samples following an IND detonation; and support device assessment and reverse engineering.
- ***Nuclear Incident Response.*** Provide expertise and equipment to detect, locate, and identify radiological or nuclear materials during high-profile events or in response to a threat; rapidly respond to disable a potentially yield producing nuclear device; and assess hazards and environmental impact after a radiological or nuclear release, in support of public safety.

### **Recent Organization Accomplishments**

- ***Apex Gold.*** Designed and directed the Ministerial-level *Apex Gold* Scenario-Based Policy Discussion exercise (part of the 2016 Nuclear Security Summit) with NA-20 and the Foreign Ministry of the Netherlands. The exercise focused on national decisions and international coordination in a nuclear terrorism event. More than 40 countries and international organizations participated in this groundbreaking interactive discussion based around a fictional, transnational nuclear terrorism threat involving HEU out of regulatory control.
- ***Technical Assessments.*** Completed first year of Tier Threat Modeling Archive – Validation (TTMA-V) and Stand-off Disablement technical assessments, which improves both confidence in and understanding of nuclear threat devices and DOD crisis response options.

- **High Profile Event Support.** Provided nuclear subject matter expertise in support of the U.S. Secret Service and FBI for the Democratic and Republican National Conventions, the 2016 Nuclear Security Summit, and the Papal visit to Washington, D.C.
- **FY 2016 Capstone Exercise Support.** Supported the FY 2016 counterterrorism and consequence management Capstone Exercise with Deputy Secretary of Energy and White House involvement.
- **Support for Calls for Assistance.** Supported calls for assistance from the DOD, DOE Emergency Management, and the States of Ohio, Tennessee, Pennsylvania, and others. Provided more than 30 analyses of unknown nuclear materials in support of DOD, FBI, and State and local organizations.

### **Leadership Challenges**

- **Current Part-Time/Volunteer Staffing Model.** The limited availability of scientific and technical experts for training, drills, and exercises is straining the current part-time/volunteer staffing model used throughout the complex to sustain deployable nuclear incident response teams and their Home Team counterparts. NA-80, in close coordination with national laboratory partners, evaluated options to enhance NNSA nuclear incident response capabilities. Recommended strategies include closer planning and coordination between Global Security and Weapons Divisions at the National Laboratories and augmentation of resources to sustain and grow expert “bench-depth.”
- **Aging Equipment.** Although the incident response team’s specialized equipment is regularly maintained, much of it has exceeded its planned service life. The condition of this equipment degrades the ability to perform the mission. Older equipment is less reliable, has higher maintenance costs, and does not incorporate the latest technology. Historically, NNSA has invested \$3-4 million per year in new equipment. Analysis indicates that this level is insufficient to equip response teams with state-of-the-art tools. Planned investments in the President’s FY 2017 budget and out-years will mitigate this risk.
- **Aerial Measuring System (AMS).** The AMS uses fixed wing aircraft and helicopters to locate and measure radiological materials on the ground. The AMS aircraft are more than 30 years old (fixed wing) or 20 years old (helicopters) and have reached or exceeded their planned operational life. Unscheduled maintenance downtime and costs have increased, putting NA-80’s readiness at risk. NA-80 is currently working with the NNSA Office of Cost Estimation and Program Evaluation to complete a formal Analysis of Alternatives for AMS fixed wing and helicopter aircraft.
- **International Cooperation.** Interagency and international partners’ political will, schedule, absorptive capacity, and internal security often influence the ability to synchronize and execute radiological or nuclear emergency programs at the national, regional, and international levels. NA-80 continues to identify and engage partners in maintaining programmatic capabilities to ensure compatible systems domestically and worldwide.

### **Critical Events and Action Items**

#### **3-month events**

- In conjunction with U.S. Secret Service and the FBI, support radiological/nuclear security during the 2017 Presidential Inauguration. (January 2017)

**6-month events**

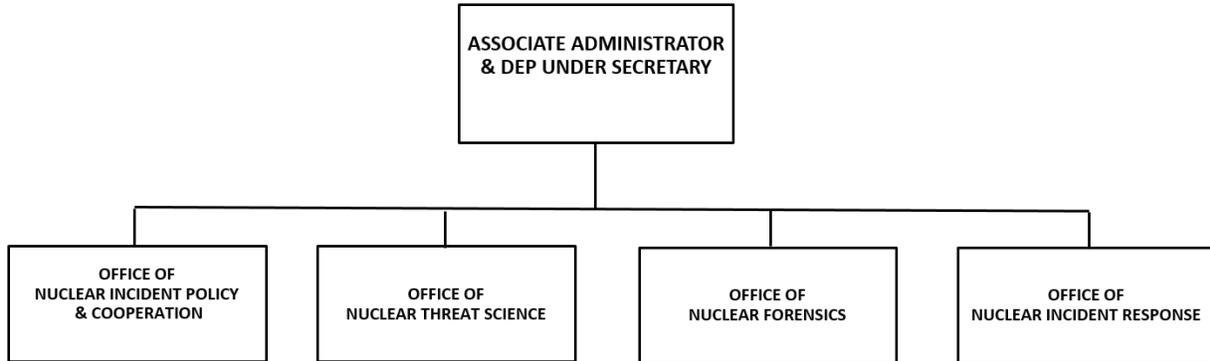
- Support counterterrorism, forensics, and consequence management activities during the National Level Exercise “Vital Archer 17/Gotham Shield.” This exercise will involve senior level decision makers at the White House and between agencies. (April 2017)

**12-month events**

- Execute OPSIS technical counterterrorism exchange with the United Kingdom and France to improve and understand each other’s nuclear crisis response capabilities. . (October 2017)
- Complete assessments for TTMA-V and Stand-off Disablement activities, which improves both NNSA’s confidence in understanding nuclear threat devices and DOD crisis response options.(FY 2017 – FY 2018)

Organizational Chart

**ASSOCIATE ADMINISTRATOR &  
DEPUTY UNDER SECRETARY FOR  
COUNTER-TERRORISM & COUNTER-PROLIFERATION**



# National Nuclear Security Administration Office of Acquisition and Project Management

## SUPPORTING THE DOE MISSION

### **STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE**

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

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

### **Organization Information**

#### **Name:**

National Nuclear Security Administration  
(NNSA)

Office of Acquisition and Project Management  
(NA-APM)

#### **Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

#### **Telephone Number:**

202-586-4921

#### **Website:**

[http://nnsa.energy.gov/aboutus/ouroperations/  
apm](http://nnsa.energy.gov/aboutus/ouroperations/apm)

#### **Point-of-Contact E-mail Address:**

[robert.raines@nnsa.doe.gov](mailto:robert.raines@nnsa.doe.gov)

### **Supporting the DOE Mission**

The Office of Acquisition and Project Management (NA-APM) enables NNSA to accomplish defense, nonproliferation and counterterrorism, emergency operations, and security missions at the best value to the taxpayer through contract placement and administration, and capital construction project management. NA-APM awards all contracts, financial assistance instruments, and Inter-Agency Agreements on behalf of NNSA. The majority of NNSA's procurement funds are obligated on Management and Operating (M&O) contracts at seven major sites on DOE/NNSA's behalf.

NA-APM oversees all construction projects over \$10 million and ensures disciplined upfront

project planning to establish objective performance measures that demonstrate achievement of program objectives within approved cost, schedule and performance parameters. Projects include complex, first-of-a-kind nuclear facilities that are of profound importance to national security. NA-APM's work spans the entirety of the NNSA's national security mission and saves taxpayer dollars by enhancing Federal oversight and contractor accountability while delivering mission-critical projects on schedule and on budget.

### **Mission Statement**

Deliver timely best value acquisition solutions, and safe quality construction on budget.

### **Budget**

NA-APM funding is included in the Office of Administrator.

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 175

### **History**

NNSA created NA-APM in 2011 to bring discipline to NNSA acquisition and project management and address the longstanding project management challenges identified by internal and external stakeholders. Establishing an independent, integrated acquisition and project management organization, separate from the requirements owner and resource sponsor, is in line with practices in other federal agencies and the private sector. It allows for the systemic implementation of policies, practices, and procedures for delivering best value acquisition and capital asset project solutions, while maximizing available resources. NA-APM was designed to ensure that best value acquisition plans are developed and to perform the necessary critical evaluation of a project's cost estimating, design and technical maturity, requirements definition, and change control for the Program Offices and Under Secretary for Nuclear Security (Administrator). NA-APM provides independent dedicated acquisition, project management, and oversight that aligns contract incentives with taxpayer interests; provides clear lines of authority and accountability for federal and contractor personnel; manages assigned projects within the original scope and cost baselines, ensuring completed projects meet mission requirements; improves cost and schedule performance; and strengthens cost estimating, and alternative assessments and evaluation.

### **Functions**

NNSA's missions require an industrial and laboratory infrastructure that is secure and able to meet immediate and long term operational needs. NA-APM provides the corporate integration for the development and execution of NNSA's facilities management policies and programs and project management systems.

Similar to the roles and responsibilities of integrated acquisition and project management organizations in other federal agencies, NA-APM ensures NNSA implements federal acquisition and project management policies and regulations. NNSA, as a semi-autonomous agency, has its own procurement authority through the Administrator to the Senior Procurement Executive (SPE) in NA-APM. NA-APM works closely with the SPE within the DOE to ensure consistency to the maximum extent practicable.

## **Recent Organization Accomplishments**

NA-APM executes over 2,000 contract actions valued at \$11 billion annually, and awards over 100 new competitive procurements per year. NNSA has won nine out of ten protests over the last two years and has had a zero percent loss rate for the past two consecutive years.

- ***Award of Two M&O Contracts.*** In 2014, NA-APM awarded the M&O contract to consolidate the work of two NNSA nuclear production sites under one contract. The \$23 billion contract is estimated to save \$3 billion over the life of the contract. One year later, NA-APM awarded the M&O contract for Kansas City National Security Campus, which is expected to save the U.S. Government \$150 million over the life of the contract, and increase small business participation by 25 percent. NNSA was instrumental in obtaining the Small Business Administration's acknowledgement of the contributions towards small businesses made by the Departments M&O contractors. In 2015, the Small Business Administration awarded NNSA with an overall grade of an "A" for the first time in the history of NNSA, reversing years of failing grades.
- ***New Acquisition Strategies.*** NA-APM is focused on putting the right contracts in place from the start, appropriately sharing risk between the government and its contractors, and building on a culture of accountability, and accordingly established new acquisition strategies. NA-APM uses the U.S. Army Corps of Engineers (USACE) for standard commercial work (nearly half of NNSA's projects), allowing DOE/NNSA's M&O partners to focus on the unique nuclear and high hazard work where they can provide the best value to DOE.
- ***Transuranic Waste Facility Project.*** The Transuranic Waste Facility Project in Los Alamos, NM, employed a new incentive fee structure which effectively transformed a cost-reimbursement contract into a fixed price contract that shifts the cost burden to the contractor. NA-APM has also established sub contract line item numbers for projects and tying fee directly to project performance.
- ***Project Portfolio.*** Over the last five years NA-APM completed its \$1.4 billion project portfolio at approximately \$60 million – or 5 percent – under its original budget, with only one project exceeding its original baseline. In FY 2016, NNSA is managing a \$5B project portfolio, which is growing to over 12B by the end of the FYNSP without a commensurate increase in staff.
- ***High Risk List.*** Due to the progress NNSA has made in delivering its contracts and projects on or under budget, the GAO has removed NNSA from its High Risk List for contracts and projects less than \$750 million.

## **Leadership Challenges**

- ***Staffing.*** Insufficient staffing remains a high priority issue. One measure of this imbalance of staffing-to-workload relates to the acquisition workforce. For NNSA, each Federal acquisition professional manages an average of \$116 million on program dollars compared to the Government average of \$10.7 million.

GAO's most recent annual "High Risk List", which calls attention to agencies and areas that are considered of high risk and most in need of transformation, identified the need for the Department to determine workforce needs and address shortages of acquisition and project

management personnel to oversee and manage contracts and projects that have become “more expensive and increasingly complex”.

### **Critical Events and Action Items**

As a capital asset progresses through the various Critical Decision (CD) phases, NNSA’s program managers are responsible for the mission need, requirements, alternative selection and budgeting, while NA-APM develops the acquisition plan and executes the project decision and construction in accordance with the terms and conditions of the contract. The below lists line-item construction projects that are projected to achieve CD-2/3, *Approval of Performance Baseline/Approval of Start of Construction* and CD-4, *Approval of Start of Operations or Project Completion* during FY 2017.

#### **3-month events**

- Approval of Start of Operations or Project Completion - High Explosive Pressing Facility
- New Management and Operating Contract Award for Sandia National Laboratories
- New Management and Operating Contract Award for Nevada National Security Site.

#### **6-month events**

- Approval of Start of Operations or Project Completion - Transuranic Waste Facility
- Approval of Performance Baseline/Approval of Start of Construction - UPF Mechanical Electrical Building
- Approval of Performance Baseline/Approval of Start of Construction - Expand Electrical Distribution System

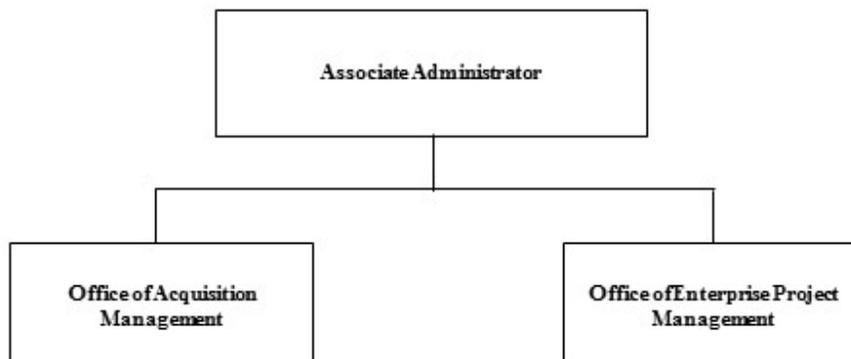
#### **12-month events**

- Approval of Performance Baseline/Approval of Start of Construction - Calciner
- Approval of Performance Baseline/Approval of Start of Construction - UPF Process Support Facilities
- Approval of Performance Baseline/Approval of Start of Construction Radioactive Liquid Waste Treatment Facility TLW
- Approval of Performance Baseline/Approval of Start of Construction - Exascale Class Computing Cooling Equipment
- Approval of Performance Baseline/Approval of Start of Construction - High Explosive Science & Engineering
- Approval of Performance Baseline/Approval of Start of Construction - UPF Main Process Building
- Approval of Performance Baseline/Approval of Start of Construction - UPF Salvage and Accountability
- Approval of Performance Baseline/Approval of Start of Construction - Y-12 Emergency Operations Center



Organizational Chart

**ASSOCIATE ADMINISTRATOR FOR ACQUISITION &  
PROJECT MANAGEMENT**



**National Nuclear Security Administration  
Office of the Associate Administrator for Information Management  
and Chief Information Officer**

**SUPPORTING THE DOE  
MISSION**

**STRATEGIC PLAN GOAL 3:  
MANAGEMENT AND PERFORMANCE**

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 9:** Manage assets in a sustainable manner that supports the DOE mission.

**Strategic Objective 10:** Effectively manage projects, financial assistance agreements, contracts, and contractor performance.

**Strategic Objective 11:** Operate the DOE enterprise safely, securely, and effectively.

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

**Organization Information**

**Name:**

National Nuclear Security Administration (NNSA)  
Office of the Associate Administrator for Information  
Management and Chief Information Officer (NA-IM)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-5617

**Website:**

<https://nnsa.energy.gov>

**Point-of-Contact E-mail Address:**

[wayne.jones@nnsa.doe.gov](mailto:wayne.jones@nnsa.doe.gov)

**Supporting the DOE Mission**

The Office of the Associate Administrator for Information Management and Chief Information Officer (NA-IM) leverages new and existing technologies to assist and protect the DOE/NNSA nuclear mission in an increasingly complex and hostile cyber landscape. NA-IM provides cybersecurity for all DOE Classified systems as well as NNSA mission unclassified environments and provides the enterprise Secret level networks for all of NNSA.

Due to NNSA’s mission, NA-IM takes a risk management approach to developing IT applications and networks to ensure that cyber security is embedded in the IT fabric of the agency. NA-IM enhances the information management of the nuclear security enterprise through an effective mix of technology, policy, and risk management practices.

## **Mission Statement**

Effectively execute and govern the complex, dynamic program of value-added, mission-enabling secure services that span both classified and unclassified environments across Headquarters, National Labs, Plants, and Field Offices.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$179.646 million
FY 2016 Enacted Budget	\$157.588 million
FY 2017 Budget Request	\$176.592 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 35

## **History**

As the principal IT advisory organization to the Administrator, NA-IM is charged with operating across the NNSA nuclear weapons complex to create, communicate, and execute an integrated IT vision. NA-IM manages the NNSA IT portfolio and ensures its strategic alignment with the NNSA mission.

NA-IM is guided by statutes and federal guidance and is responsible for developing and passing appropriate policy down for NNSA IT in general.

## **Functions**

NA-IM is the principal organization for federal information management, IT, and complex-wide cybersecurity for the NNSA. NA-IM has the responsibility to ensure the availability of a secure infrastructure for mission support and information sharing for the nuclear security enterprise. The Office manages federal IT investments, services, and projects and oversees NNSA's IT portfolio. NA-IM is responsible for all aspects of cybersecurity across NNSA, including but not limited to policy, planning, and budgeting; federal and congressional reporting; continuous monitoring; risk management; and the daily operations of classified and unclassified networks and systems.

## **Recent Organization Accomplishments**

- ***Restricted Data.*** Engaging in continued work with the FBI to identify interagency needs and opportunities for sharing and leveraging Restricted Data (RD).
  - Provided a listing of current cyber protection requirements and methodologies for RD;
  - Explained the current congressional statutes that control the dissemination of RD outside of DOE/Department of Defense (DoD) environment; and,
  - Assessed the current state of FBI cyber security controls in correlation with RD protection requirements and assisted in the formulation of an official memorandum from the Associate Director of the Render Safe Program to NA-IM requesting access to host RD.

- ***Multi Factor Authentication (MFA) and Federal Information Technology Acquisition Reform Act (FITARA) Implementation Plans.*** Worked with DOE to provide input on behalf of the NNSA on the DOE FITARA and MFA implementation plans. NA-IM's draft supplemental plans outline NNSA's strategy for effectively implementing and overseeing both the FITARA and MFA activities.

### **Leadership Challenges**

The majority of NA-IM challenges involve responsibility to perform/oversee activities for which the organization has only partial or shared authority.

- ***Unclassified Enterprise Computing.*** The current service delivery model through DOE is designed to build or fix in-house versus obtaining services from outside providers and frequently provides a less than adequate user experience for NNSA federal and contractor personnel.
- ***Ensuring that NA-IM is involved in IT and Cybersecurity matters across the NNSA Enterprise.*** When NA-IM is not included in early planning activities NA-IM loses the ability to apply broad risk management methodologies to harden the cyber posture of the Department as a whole.
- ***Attracting and Retaining Adequate Staffing.*** Approximately 25 percent of the NA-IM federal staff have recently retired or will be eligible to do so in the next 18 months. NA-IM have developed a staffing plan to preemptively backfill these positions in order to reduce the impact on the mission as these individuals retire from federal service. NA-IM is facing a crucial culture shift to foster an adaptive, agile workforce in order to meet mission requirements in the rapidly evolving IT and Cybersecurity environment.
- ***FITARA Implementation.*** There are complicated issues surrounding DOE and NNSA CIO authorities related to IT investment review, approval, and reporting such as Title 32 and the M&O construct. There are also cultural, policy, and process barriers to the implementation of FITARA across the nuclear security enterprise that must be resolved. In addition, FY 2016 NDAA exempted FFRDCs from some FITARA requirements that will require NA-IM to continue working through potential future exemptions and implications of the continuing resolution.
- ***Telecommunications Electronics Material Protected from Emanating Spurious Transmissions (TEMPEST) Management.*** NA-IM recently became the Program responsible for implementing a TEMPEST program to meet control and authority requirements introduced by Former Secretary Chu's approved Risk Management model. At present, NA-IM is not able to authorize networks and signal emitting devices independently and must instead rely on lengthy DOE review and approval processes, causing adverse impact to NNSA's mission. NA-IM must develop a strategy to effectively manage TEMPEST for NNSA that also respects Department standards.
- ***Information Management Contracting/Acquisitions.*** NA-IM worked with NA-APM to establish a Blanket Purchase Agreement for Information Technology and Cybersecurity support services to the NNSA. The task orders are being released individually to reduce protest risk and are expected to be awarded between November 2016 and January 2017.

- ***Involvement in the Development and Implementation of Physical Security Systems.*** NA-IM is working to apply technology to improve physical security, and while this technology is improving operations across the Department, it does introduce a new complexity to the way NA-IM thinks about cybersecurity in reference to physical space. It is necessary to shift the approach currently taken to physical security to mitigate cyber threat vectors to information security and safeguarding.

## **Critical Events and Action Items**

### **3-month events**

- iJC3 is designed to both reduce cyber risk across the Department using threat-informed cyber intelligence, and to mature and strengthen the Department's cyber posture and response. Previously independent cyber centers and specialized expertise will be integrated in a collaborative, intelligence-driven, approach to cyber operations, defense, and response. The iJC3 engages DOE's full capabilities and protects the entirety of the DOE attack surface by combining situational awareness of threats, operational status of networks, and indicators of known malicious activity to decrease discovery time and speed response time.

### **6-month events**

- The Electronic Records Management Initiative will establish procedures for addressing records management requirements, including recordkeeping requirements and disposition, before approving new electronic information systems or enhancements to existing systems. This project will provide guidance on electronic records management and enable NNSA to transfer electronic records to NARA in a variety of data types and formats so that records may be preserved for future use by the government.
- The Information Technology Management Plan outlines a strategy to modernize the NNSA unclassified information technology environment and strengthen NNSA's Cybersecurity posture. The plan calls out methods to leverage current institutional expertise while also seeking third party validation from trusted industry and federal partners and provides a framework that is aligned with existing enterprise and business initiatives. The plan includes a comprehensive strategy to support NNSA's vision of a shared Enterprise platform using infrastructure that promotes a rational, secure, scalable, and effective way to manage information flows between DOE systems.
- NA-IM will continue to work with NA-APM to award Information Technology, Cybersecurity, and Policy & Governance support services tasks under the existing Blanket Purchase Agreement.

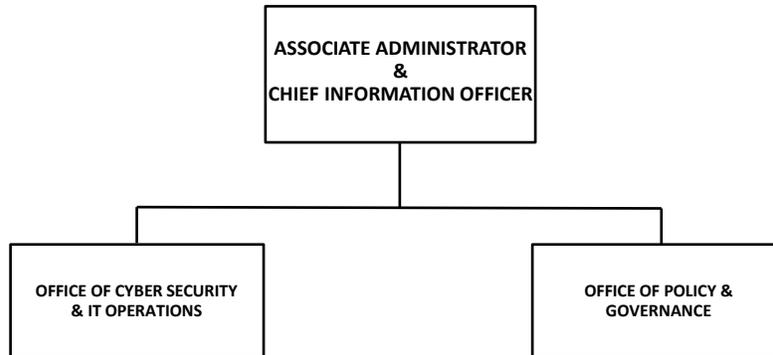
### **12-month events**

- Recertification of the Computer Network Defense Service Provider program with DOD will ensure NNSA's ability to provide and maintain a connection to the DOD SIPRNet on behalf of DOE. This critical activity enables the exchange of classified information between NNSA and DoD.
- NA-IM is fine-tuning its draft FITARA Implementation Plan and will socialize the requirements for control and authority contained therein. NA-IM will work with its

partners across the nuclear security enterprise to ensure that FITARA compliance is well understood and imposes the least burden possible on mission and business.

Organizational Chart

**ASSOCIATE ADMINISTRATOR FOR INFORMATION  
MANAGEMENT & CHIEF INFORMATIN OFFICER**



# Office of the Under Secretary for Science and Energy

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

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

**Strategic 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.

### Organization Information

**Name:**

Office of the Under Secretary for Science and Energy

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### Supporting the DOE Mission

The Office of the Under Secretary for Science and Energy leads DOE's mission in advancing scientific discovery, innovating energy technologies, and informing data driven policies that promote economic growth, job creation, energy security, and environmental quality, especially to mitigate risks associated with climate change. The Under Secretary leads and manages seven organizations with responsibility for achieving these goals with a combined \$10.1 billion enacted budget in FY 2016. These organizations include: the Offices of Science (SC); Energy Efficiency and Renewable Energy (EERE); Nuclear Energy (NE); Fossil Energy (FE); Electricity Delivery and Energy Reliability (OE); Indian Energy (IE); and Technology Transition (TT). In addition, the Under Secretary oversees 13 National Laboratories, which are world-class research institutions that perform science and technology development efforts in support of DOE's mission.

## **Budget**

- (1) The S4.1 office funding is not included in the sum total because it is either embedded in the SC number (in FY17) or embedded across all the S4.1 programs (in FY16) or included in the Dept Admin appropriation (in FY15).
- (2) Due to the unique and dynamic nature of S4.1 funding, I included a footnote that describes the funding source for each year.
- (3) It may be worth clarifying that the budget for the S4.1 office is separate and distinct from the budget for the S4 leadership team. That is to say, the Sched C employees + the Deputy US slot are typically paid out of the Office of the Secretary.

<b>Program</b>	<b>FY 2015 Enacted Budget</b>	<b>FY 2016 Enacted Budget</b>	<b>FY 2017 Request</b>
<b>Under Secretary's Immediate Office</b>	<b>1,670</b>	<b>2,000</b>	<b>2,500</b>
<b>SC</b>	<b>5,067,738</b>	<b>5,347,000</b>	<b>5,572,069</b>
<b>EERE</b>	<b>1,914,195</b>	<b>2,069,194</b>	<b>2,898,400</b>
<b>NE</b>	<b>833,379</b>	<b>986,161</b>	<b>993,896</b>
<b>FE</b>	<b>791,117</b>	<b>869,100</b>	<b>638,450</b>
<b>OE</b>	<b>146,975</b>	<b>206,000</b>	<b>262,300</b>
<b>IE</b>	<b>16,000</b>	<b>16,000</b>	<b>22,930</b>
<b>TT</b>	<b>-</b>	<b>-</b>	<b>8,400</b>
<b>TOTAL</b>	<b>8,769,404</b>	<b>9,493,455</b>	<b>10,396,445</b>

\* In FY 2015, funding for the Under Secretary's Immediate Office of permanent career staff was requested as part of the SC Program Direction budget account but appropriated in the Departmental Administration appropriation. A budget was then requested in the Departmental Administration account in FY16, but Congress directed that it be funded primarily through contributions from the Science & Energy programs. Funding for the office has again been requested in the SC Program Direction account in FY17.

## **Human Resources**

<b>Program</b>	<b>FY 2016 Authorized Full Time Equivalents</b>
<b>Under Secretary's Immediate Office</b>	<b>11</b>
<b>SC</b>	<b>908</b>
<b>EERE</b>	<b>697</b>
<b>NE</b>	<b>372</b>
<b>FE</b>	<b>744</b>
<b>OE</b>	<b>118</b>
<b>IE</b>	<b>9</b>
<b>TT</b>	<b>18</b>
<b>TOTAL</b>	<b>2868</b>

## **History**

Until 2013, SC reported to the Under Secretary for Science, which solely managed the Office of Science; the applied energy technology offices – including EERE, NE, FE, OE, and IE – reported to another Under Secretary. In 2013, Secretary Moniz implemented several organizational changes, including realignment of the Science and Energy programs into their current configuration, by establishing an Under Secretary for Science and Energy to encompass SC and the applied energy technology offices. The resulting organizational structure has improved coordination among activities that span basic science, applied research, technology demonstration, and deployment, as well as strengthened involvement of the associated science and energy laboratories.

## **Organizational Accomplishments**

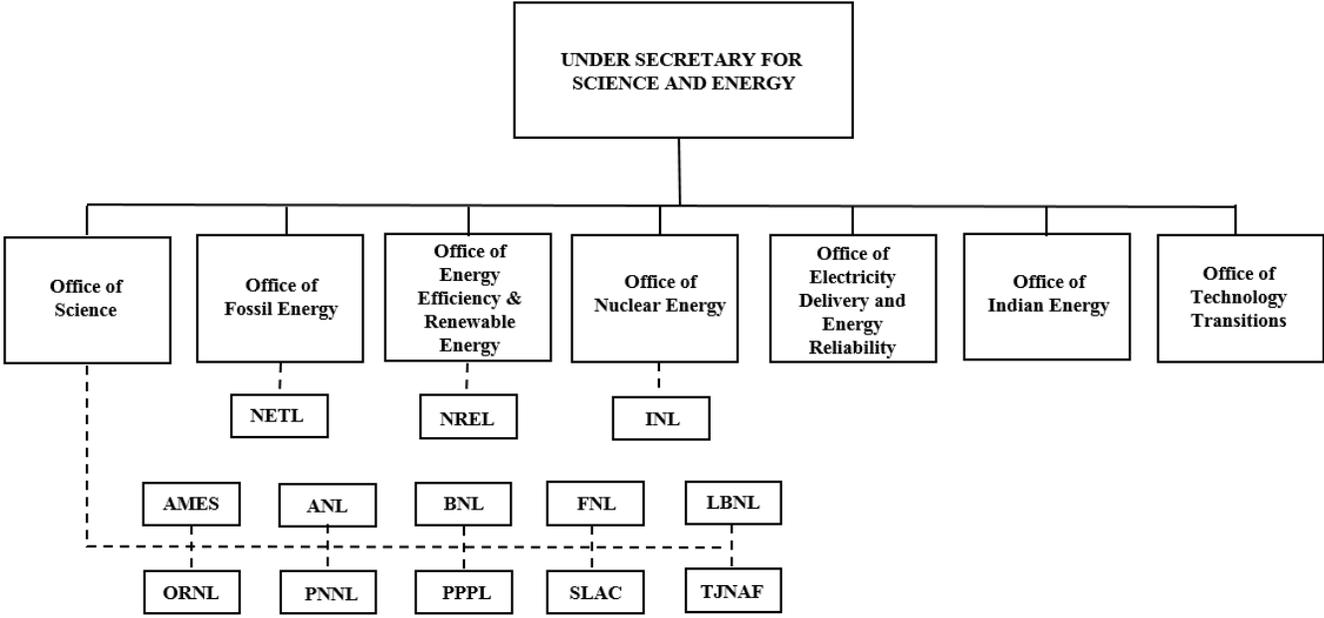
In order to improve coordination among the Science and Energy program offices and more strategically engage the National Laboratory enterprise in the activities of the department, the Under Secretary has initiated a number of key activities and processes:

- Coordinated budget planning processes among the Science and Energy program offices, including establishing several crosscutting budget proposals.
- Established Technology Teams (or Tech Teams) and crosscuts charged with integrating the activities of the Department around high-priority, high-impact research areas.
- As part of these efforts, formed a joint DOE/National Laboratory Consortium (the Grid Modernization Laboratory Consortium) to help organize the Department’s efforts in grid modernization.
- Represented the Science and Energy programs to the Office of the Secretary and communications, and provided a stronger link for the Science and Energy Programs to the Secretary.
- Launched a “National Laboratories Big Ideas Summit” that serves to bring together subject matter experts from DOE’s Science and Energy program offices, as well as other offices and all 17 National Laboratories, to collaboratively explore and propose innovative ideas to advance solutions to key energy issues.
- Developed the 2015 QTR to frame, detail, and analyze the energy system and sectors to identify RDD&D opportunities for addressing the national energy challenges.

## **Organization Structure**

The organization chart shows the seven organizations that the Under Secretary for Science and Energy leads. The dashed lines indicate the functional responsibility of each program office for the stewardship of their respective Laboratories. The Science and Energy programs steward 13 of DOE’s 17 National Laboratories.

# UNDER SECRETARY FOR SCIENCE AND ENERGY PROGRAMS AND LABS



# Office of Electricity Delivery and Energy Reliability

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

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

### Organization Information

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### Supporting the DOE Mission

The Office of Electricity Delivery and Energy Reliability (OE) addresses the complexities and interdependencies of the Nation's energy infrastructure and energy systems through a comprehensive and integrated approach using technology innovation, policy implementation, and risk management.

OE leads the Department's efforts to ensure that the Nation's energy delivery system is affordable, reliable, and resilient. OE achieves this mission by developing new technologies that improve infrastructure and assist in developing methods to meet the Federal and state electricity policies and programs that shape electricity system planning and market operations. OE also works with government and industry partners to bolster the resiliency of the energy infrastructure and assists with restoration efforts when major energy supply interruptions occur.

## **Mission Statement**

OE drives electric grid modernization and resiliency in the energy infrastructure.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$147.0 million
FY 2016 Enacted Budget	\$206.0 million
FY 2017 Budget Request	\$262.3 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 118

## **History**

In August 2003, DOE created two offices to provide focus in several critical areas: the Office of Electric Transmission and Distribution (TD) to serve as the central electricity policy focus at the Department and to advance the technologies needed to ensure a reliable, robust, and modern U.S. electricity grid; and the Office of Energy Assurance (EA), which coordinated Federal response activities within the energy sector during energy disruptions and developed strategies to harden infrastructure against such disruptions.

OE was created in 2005, bringing together expertise in technology, policy, and operations to ensure the security, reliability, and resiliency of our Nation's energy infrastructure under any circumstance. In 2007, the top leadership position in OE was elevated to Assistant Secretary of Electricity Delivery and Energy Reliability to match the importance of the electricity portfolio within the DOE mission.

Since the inception of OE, the organization has stimulated investment in electric and energy infrastructure, advanced the state of scientific development in supply and demand side electric technologies, identified barriers to continued reliable electric service, deepened consideration of security and resiliency measures in infrastructure planning, assisted many states and regions in changes to their own electricity policies, and expanded partnerships with State and private sector stakeholders. The organization has a major role in addressing immediate challenges to America's energy security and electricity policy while sustaining applied research into new advanced technologies and policies.

## **Functions**

- ***Advanced Grid Research and Development.*** OE leads national efforts to develop the next generation of technologies, tools, and techniques for the efficient, resilient, reliable, and affordable delivery of electricity in the U.S. OE manages programs related to modernizing the nation's power grid, including, but not limited to, grid scale energy storage; smart grid demonstration; advanced technologies such as solid-state transformers and power flow controllers that can optimize power delivery and enhance resilience (power electronics);

complex interactive capabilities that can allow the system to respond to change (adaptive networks); intelligent communications and control systems; and new materials that can offer benefits such as lowered cost, greater efficiency, and longer life for smart grid technologies (advanced materials).

- ***Cybersecurity and Emerging Threats Research and Development.*** OE mitigates the risk of energy disruption resulting from cyber incidents and other emerging threats within the energy environment. OE advances the research and development of innovative technologies, tools, and techniques to reduce risks to the Nation’s critical energy infrastructure posed by cyber and other emerging threats. Continuing to increase the security, reliability, and resiliency of the electricity delivery system helps ensure the success of grid modernization and transformation of the Nation’s energy systems to a more automated digital era. OE activities include the ongoing support of research, development, and demonstration of advanced cybersecurity solutions; acceleration of information sharing to enhance situational awareness; and technical assistance in the development and adoption of best practices.
- ***Infrastructure Security and Energy Restoration.*** OE leads DOE efforts to enhance national preparedness, response, and recovery from catastrophic events affecting the energy sector. OE serves as the focal point for energy sector security and resilience stakeholders, including other Federal agencies, State, local, tribal, and territorial partners, and the private sector. OE provides the federal government with situational awareness regarding electricity and fuel supplies, and is responsible for facilitating emergency preparedness and response to all hazards. OE executes the authorities assigned to the Department under the National Response Framework (Emergency Support Function 12--Energy), the responsibilities assigned to the Department as the Sector Specific Agency for Energy under Presidential Policy Directive (PPD)-21, and for coordinating response to cyber incidents as they affect the energy sector under PPD-41. In addition to responding to energy sector events, OE conducts threat and hazard research which assists states and the private sector in protecting and hardening the security posture of critical energy infrastructure; conducts regional energy exercises; and identifies critical infrastructure components and systems to better design response and recovery strategies.
- ***Transmission Permitting and Technical Assistance.*** OE is modernizing the electricity grid and enhancing the reliability of the energy infrastructure through technical assistance to the development and implementation of electricity policy at the Federal and State levels. OE leads the evaluations and implementation of DOE policies and programs regarding issues pertaining to the Energy Policy Act (EPAc) authorities, Transmission, Presidential Permits, and Technical Assistance such as smart grid; provides objective policy assistance and analysis to states and regions on State electricity policies; analyzes transmission congestion; proposes National Interest Electric Transmission Corridors for the Secretary’s consideration; coordinates Federal agency reviews of applications to site transmission facilities, including under Section 1222 of EPAc; and issues permits for cross-border transmission and authorizes exports of electricity.

### **Recent Organization Accomplishments**

OE’s recent significant organization accomplishments include:

- ***Grid Research and Development***

- Completed development of 2 software tools for the design of remote off-grid microgrids, recognizing reliability, security, and environmental constraints.
- Developed and released the Emissions Quantification Tool, an online calculator that is used to estimate the NO<sub>x</sub>, SO<sub>x</sub> and CO<sub>2</sub> repercussions of smart grid infrastructure investments.
- Received the prestigious R&D 100 award for research at United Silicon Carbide (USC), funded through a Small Business Innovation Research (SBIR) grant from OE's Energy Storage Program. The award is given annually to 100 of the most innovative technological products. The award is worldwide and cuts across all areas of technology. This is the eighth award the Storage Program has achieved for its work.
- Using the OE-developed mixed acid vanadium/vanadium redox flow battery technology, UniEnergy Technology successfully deployed and commissioned a 1 megawatt (MW)/3.2 megawatt-hour (MWh) energy storage system in Pullman, WA. The technology was subsequently licensed to four other companies for commercialization. OE supported R&D efforts have since demonstrated an improvement in battery performance of five times initial performance with a projected system cost of less than \$300 per kilowatt hour (kWh).
- Led national efforts with industrial and jurisdictional stakeholders to develop energy storage safety codes and performance and reliability standards.
- Maintains the Global Energy Storage Database with comprehensive overview of 1,400 energy storage projects from over 60 countries.
- Leading international efforts on: Storage Standards (IEC TC 120), Safety (NITE-Japan), Na-battery (KETEP-Korea), Flow Battery Reliability (NRC - Canada, Fraunhofer-Germany), and Testing – (BELCO – Bermuda, EMA-Singapore).
- Developed and successfully deployed at the Independent System Owner – New England (ISO-NE) a real-time Phasor-only State Estimator (PSE) which corrects for synchrophasor (a device which measures the electrical waves on an electricity grid) errors and improves the accuracy of data, as well as providing additional observability by computation of virtual phasor measurements for substations without data.
- Delivered the final Frequency Response Analysis tool and supporting documentation for the electric system operators to use this synchrophasor-based tool to demonstrate compliance with the requirements of the North American Electric Reliability Corporation's Standard BAL-003, which requires operators to maintain a capacity to provide frequency response to ensure system reliability.
- **Cybersecurity**
  - Developed an innovative cybersecurity technology providing anomaly and intrusion detection for advanced metering infrastructure and distribution automation wireless mesh networks. This offers utility companies enhanced visibility into smart meter and distribution automation network activities.

- Deployed a cybersecurity software product (Hyperion), developed by the Oak Ridge National Laboratory (ORNL), that can quickly recognize malicious software (specifically, software that looks inside an executable program to determine the software's behavior without using its source code or running the program) by computing and analyzing program behaviors associated with harmful intent. An exclusive license agreement with R&K Cyber Solutions LLC for Hyperion was executed with ORNL.
- Released guidance to help the energy sector establish or align existing cybersecurity risk management programs to meet the objectives of the Cybersecurity Framework released by the National Institutes of Standards and Technology.
- ***State and Regional Collaboration***
  - An updated Energy Emergency Assurance Coordinators (EEAC) Agreement with the National Association of State Energy Officials, National Association of Regulatory Utility Commissioners, National Governors Association, and the National Emergency Management Association will help the Federal Government and States work together to provide a unified response to energy emergencies.
  - Distributed Energy Collaborative with State Governments: California (CA) and New York (NY) are pursuing sweeping transformation of energy policy, including deep carbon emissions reductions and improved value signals to animate the markets, that will satisfy the prevailing customer expectations for clean, affordable, and reliable energy resources. One of their key areas of focus is the integration of distributed energy resources (DERs) and the refining of utility grid operations and planning to support and engage high penetrations of DERs. As part of these efforts, CA and NY (and more recently other states, including Hawaii, Massachusetts and the District of Columbia) are collaborating with the Department of Energy on the development of the next generation planning tools and systems for grid operations and distributed markets that will allow for full participation of DERs in the provision of electricity services. The intent of the collaborative is to promote the acceleration of a widely applicable set of methods and tools for planning and operations that meet state policy objectives, including decarbonization, resilience and DER integration.
  - Worked with the National Association of State Energy Officials (NASEO) to support Michigan, Nevada, and Virginia with energy system roadmapping efforts. Each of the three governors committed their respective states to the 18-month, State-led process which will develop an energy system modernization roadmap aimed at addressing a growing range of interdependent electricity system and market issues. OE will work with NASEO to provide technical assistance to the selected states and share lessons learned from their experiences throughout this process.
- ***Risk Mitigation/Resiliency Efforts***
  - Contributed to the development of the National Space Weather Strategy and accompanying Action Plan released by the White House Office of Science and Technology Policy (OSTP) in 2015. OE continues to work with OSTP and other Federal agencies and is currently developing requirements and a plan to provide a system-wide real-time view of geomagnetic induced currents (GICs) at the regional level.

- Developed a statistically rigorous estimate to help Power System Engineers and Planners better assess their risk to the high impact, low frequency geomagnetic disturbance event. This study has been cited numerous times in the Federal Energy Regulatory Commission rulemaking on reliability standard regarding geomagnetic disturbances.
- Examined the risk of electromagnetic pulses (EMPs) and investigated how to mitigate their effects on transformers and the reliability of the grid. In July 2016, OE released the Joint Electromagnetic Pulse (EMP) Resilience Strategy developed with the Electric Power Research Institute (EPRI). As a next step, DOE will be working closely with EPRI, interagency partners, national laboratories, electric utilities, and international partners to develop specific actions that DOE can take to reduce EMP vulnerabilities to the energy sector. These actions will be developed by September 30, 2016, and will help guide the Nation's efforts in the future. In addition, several EMP studies are currently underway at DOE's national laboratories.
- Led Federal planning for GridEx III, the largest exercise of its kind ever that brought together government and private sector leaders to simulate a coordinated response to physical and cyber threats to our Nation's grid. More than 350 organizations and an estimated 10,000 individuals joined the exercise. This group featured CEOs from utilities from across the country, state and local partners in the field, and colleagues from the White House, DHS, DOD, and FBI.
- Expanded the Fiscal Year (FY) 2014 feasibility of assessment from impacts of sea level rise on energy infrastructure through year 2100 for four major metropolitan areas (New York City, Houston, Miami, and Los Angeles). The expanded assessment includes additional analysis to further assess the effects of storm surge on top of sea level rise, highlighting the impacts that a major storm could have on these metropolitan areas as well as four additional cities. The study approach is flexible and scalable. An interactive tool that visualizes results of this work is now available online.
- Created the State Energy Risk Assessment Initiative in coordination with various national, state, and regulatory groups that also resulted in the production and publication of State Energy Risk Profiles for all fifty states. The Initiative is designed to help states better understand risks to their energy infrastructure so they can be better prepared to make informed decisions about their investments, resilience and hardening strategies, and asset management.
- During FY15, DOE's Energy Response Organization was activated by the Federal Emergency Management Agency (FEMA) for 111 days for 10 severe weather events (7 tropical, 1 flood, and 2 winter) and a wildfire. During these events, DOE works closely with Federal, state, and local governments, and industry to protect against and mitigate threats to energy infrastructure. The 26 DOE responders supporting the Department's response to Typhoon Soudelor in August played a critical role in providing situational awareness to Federal agencies and Congress. DOE responders also assisted in coordinating federal resources to supply the Commonwealth Utility Corporation in the Northern Marianas Islands (Saipan) with concrete poles necessary for expediting the distribution system recovery and getting people power to continue getting their lives back together.

- ***Transmission Planning***

- Issued a Presidential Permit to Champlain Hudson Power Express Inc. to construct, operate, maintain, and connect a 1,000MW, high-voltage direct current (HVDC) Voltage Source Converter (VSC) controllable transmission system from the Canadian Province of Quebec to New York City. This will deliver lower-cost, clean power to New York that will benefit businesses, residents and the environment.
- Issued in September 2016 the final rulemaking for the Integrated Interagency Pre-Application (IIP) process for transmission projects requiring Federal authorizations. The IIP will improve coordination among project proponents and Federal agencies prior to formal application submission, leading to more complete applications and more efficient Federal permitting timelines.
- Helped coordinate DOE's efforts, as announced in March 2016, on the Plains & Eastern Clean Line Project. Specifically, DOE announced it would participate in the development of the Plains & Eastern Clean Line Project (Clean Line), a major clean energy infrastructure project. The Clean Line project will tap abundant, low-cost wind generation resources in the Oklahoma and Texas panhandle regions to deliver up to 4,000 MW of wind power via a 705-mile direct current transmission line—enough energy to power more than 1.5 million homes in the mid-South and Southeast United States.

### **Leadership Challenges**

OE's leadership challenges include:

- ***Personnel Resource Demands.*** OE leadership is sought on a regular basis to help federal agencies, states, local and tribal communities meet the Nation's high expectations for innovative electric grid technology; high quality energy system infrastructure analysis; and to provide timely, accurate information and rapid response during natural and man-made disasters. OE is ready to meet these challenges and expectations and requires the continued support of the Department, Administration and Congress.
- ***Financial Resource Investment.*** The pledge to double federal clean energy research and development investment as part of Mission Innovation over the next five years requires a commensurate financial investment to allow OE to become a full partner with private industry. This will help to modernize the electric grid, secure the critical energy infrastructure, accelerate research and development, strengthen analytical capabilities, and expand energy emergency and response assistance at the state and local levels.

### **Critical Events and Action Items**

#### **3-month events**

- Complete environmental review for the Great Northern Transmission Line (MN), New England Clean Power Link (VT), and the Lake Erie Connector (PA). If approved, these three transmission lines would deliver an additional 3000-4000 MW of renewable electricity. Final decisions on the issuance of Presidential Permits for the Great Northern Transmission Line and New England Clean Power Link is expected to be in November 2016, and in January 2017 for the Lake Erie Connector.
- Publish Notice of Proposed Rulemaking to modernize DOE's regulations for Cross-Border Presidential Permit Applications and Export Authorizations.

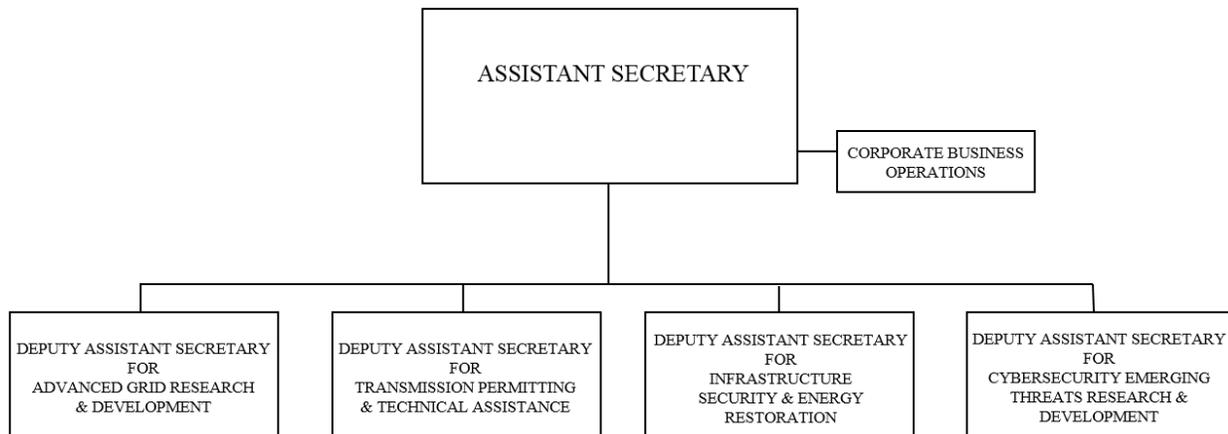
- Award selections from 3 funding opportunity announcements- Sensor and Modeling Approaches for Enhanced Observability and Controllability of Power Systems with Distributed Energy Resources" (expected 6 awards totaling \$7M), Synchrophasor Industry Applications (4 awards totaling \$5M), and Flexible Designs for Next Generation Transformers (5 awards totaling \$1.5M)- in fall of 2016.
- Working with DOE's Office of Energy Policy and Systems Analysis, Department of Homeland Security and the White House NSC staff and the Office of Science and Technology Policy staff to complete the U.S.-Canadian Electric Grid Strategy that is currently in the final stages of review at the Interagency Policy Committee-level. This Strategy is accompanied by a domestic Action Plan, (and a separate Canadian Action Plan), that outlines a range of U.S. activities to be implemented to help strengthen the security and resiliency of the electric grid and provides a timeline for implementation of those actions. Publication is planned for December 2016.

**12-month events**

- The New Hampshire State regulators pushed back the decision on the proposed Northern Pass transmission project from December 2016 to September 2017.

**Organization Chart**

## ASSISTANT SECRETARY FOR ELECTRICITY DELIVERY & ENERGY RELIABILITY



# Office of Energy Efficiency and Renewable Energy

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

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

### ORGANIZATION INFORMATION

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**Supporting the DOE Mission**

The Office of Energy Efficiency and Renewable Energy (EE) plays a critical role in advancing DOE's mission to enhance U.S. energy security and economic growth through support of applied research and development, technology innovation, and market solutions to meet our energy and environmental challenges.

## **Mission Statement**

EE's mission is to create and sustain American leadership in the transition to a global clean energy economy.

EE achieves this mission by: accelerating the development and adoption of sustainable transportation technologies; increasing the generation of electric power from renewable resources; improving the energy efficiency of homes, buildings, and industries; stimulating the growth of a thriving domestic clean energy manufacturing industry; enabling the integration of clean electricity into a reliable, resilient, and efficient grid; leading efforts to improve Federal sustainability and implementation of clean energy solutions; and enabling a high-performing, results-driven-culture through effective management approaches and processes.

EE has stewardship responsibility for the National Renewable Energy Laboratory (NREL) in Golden, Colorado, which has 1700 employees and a \$350M annual operating budget. NREL's mission is to develop clean energy and energy efficiency technologies and practices, advance related science and engineering, and provide knowledge and innovations to integrate energy systems at all scales.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$1,914.2 million
FY 2016 Enacted Budget	\$2,069.2 million
FY 2017 Budget Request	\$2,898.4 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 697 located in Washington, D.C. and Golden, Colorado. Within this total, EE also supports 50 FTEs at the National Energy Technology Laboratory who provide project management and procurement support.

## **History**

The statutory foundation for EE is authorized by United States Code, Title 15 (Commerce and Trade) and Title 42 (Public Health and Welfare), which specify applicable programs, activities, goals, and objectives.

## **Functions**

EE is divided into three Technology Sectors: Energy Efficiency; Renewable Power; and Sustainable Transportation. EE also has a Corporate Sector, which includes Strategic Programs and Mission-Critical Support Operations.

**Energy Efficiency Sector.** EE's Energy Efficiency sector leads a robust community of researchers and other partners to continually develop innovative, cost-effective energy-saving solutions, which help make our country run better through increased efficiency and energy productivity—better plants, advanced materials and manufacturing processes, products, new homes, ways to improve older homes, and buildings in which to work, shop, and lead our daily lives. This sector is divided into four main functions, including:

- ***Advanced Manufacturing.*** The functions of advanced manufacturing include:
  - *Facilitates Collaboration.* Brings together manufacturers, research institutions, suppliers, and universities to investigate manufacturing processes, information, and materials technologies critical to efficient domestic manufacturing of clean energy products, and to support increased energy productivity across the entire manufacturing sector.
  - *Supports Delivery of Energy and Consumer Cost Savings.* Supports manufacturing projects at American companies and research organizations that focus on specific high-impact manufacturing technology and process challenges.
  - *Promotes U.S. Leadership in Manufacturing.* Brings together manufacturers, suppliers, and researchers in public-private R&D consortia.
  - *Supports Deployment of Energy Efficiency Technologies and Practices.* Supports new, cost-effective combined heat and power (CHP) systems. Industrial Assessment Centers provide energy efficiency, productivity, and waste/water use reduction assistance to small and medium-sized manufacturers.
- ***Building Technologies.*** The functions of building technologies include:
  - *Supports Research and Development to Reduce Energy Costs.* Supports the development of innovative, energy-saving technologies that transform the building energy landscape.
  - *Supports Technology-to-Market Activities.* Facilitates efforts to remove market barriers, making it easier for consumers and businesses to access and adopt energy-saving technologies and data.
  - *Develops Codes and Standards.* Issues codes and standards that lower energy costs for all Americans, while driving further technological innovation.
- ***Federal Energy Management Program.*** The functions of FEMP include:
  - *Promotes Achievement of Federal Sustainability Goals.* Assists and enables Federal agencies to meet energy-related and other sustainability goals and to provide Federal energy leadership to the Nation.
  - *Develops Reporting and Tracking Tools.* Provides centralized reporting, data collection, and strategic communication for agency use.
  - *Provides Performance-based Contracting Support.* Provides expertise and tools to increase federal agencies' investments in energy efficiency, water conservation, and renewable energy.
  - *Delivers Innovative Methods of Customer Service.* Supports projects at federal sites, helping to instill best practices and utilizing technologies through the Federal Energy Efficiency Fund (FEEF) to improve Federal Government efficiency.
  - *Builds Public-Private Partnerships.* Engages Federal agencies, DOE's National Laboratories, and the private sector in developing and implementing energy efficiency best practices.
- ***Weatherization and Intergovernmental Programs.*** The functions of weatherization include:

- *Promotes Clean Energy Deployment.* Accelerates sustainable energy integration and clean energy deployment in partnership with state, local, and U.S. Territory governments.
- *Supports Home Retrofits.* Through a state-managed network of local weatherization providers, supports home energy retrofits for low income families and career development opportunities for workers.
- *Supports Expanded State Role in Promoting Energy Projects.* Through the State Energy Program, supports the States' expanding role in utility, renewable energy, and building code policies and other high impact energy projects.

**Renewable Power Sector.** EE addresses opportunities and challenges to make solar, wind, water, and geothermal power generation technologies directly cost competitive with conventional sources of electricity, and addresses the wide range of related market issues to facilitate their widespread deployment across the country. This includes approaches to address upfront capital, finance, projected operations and maintenance, and other “soft costs” associated with permitting and siting renewable power projects. In addition, the Renewable Power sector leads EE’s grid integration effort in support of the overall DOE Grid Modernization Initiative. EE’s grid integration activities focus on the seamless integration of energy efficiency, renewable power and sustainable transportation technologies in the electrical power system. This sector is divided into the following functions:

- ***Geothermal Technologies.*** The primary function of geothermal program is to accelerate the deployment of domestic electricity generation from geothermal resources by investing in transformative research, development, and demonstration-scale projects that will catalyze commercial adoption.
- ***Solar Energy Technologies.*** The primary function of solar energy technologies is to support the DOE SunShot Initiative, which is a collaborative national effort to make the U.S. a leader in the global clean energy race by accelerating solar energy technology development. This is accomplished through enabling widespread adoption of solar power technologies across America by making solar energy systems cost-competitive by the end of the decade.
- ***Water Power Program.*** The primary function of the water power program is to promote energy security, economic growth, and environmental quality by providing additional opportunities for clean, affordable, and reliable renewable energy from the full range of the Nation’s water power resources, including hydropower, pumped storage, and marine and hydrokinetic (MHK) energy.
- ***Wind Program.*** The primary function of the wind energy program is to enable and accelerate widespread U.S. deployment of clean, affordable, reliable, and domestic wind power. This effort promotes national security, economic growth, and environmental quality through a balanced program of technology research and development (R&D), testing and demonstration, and deployment efforts, including offshore wind.

**Sustainable Transportation Sector.** EE’s sustainable transportation portfolio supports comprehensive and analysis-based strategies to accelerate the development and widespread use of a variety of promising sustainable transportation technologies along two key pathways: replace conventional fuels with cost-competitive, domestically produced alternatives; and use conventional fuels more productively. Public investment in the development of advanced transportation technologies that enable both of these pathways improves the Nation’s energy

security, reduces greenhouse gas (GHG) emissions, and strengthens U.S. global economic competitiveness. This sector is divided into three main functions, including:

- **Bioenergy Technologies.** The primary function of bioenergy technologies is to accelerate the commercialization of first-of-a-kind technologies that use our Nation's abundant renewable biomass resources (e.g., algae, forestry trimmings) for the production of advanced biofuels and bio-based products.
- **Fuel Cell Technologies.** The primary function of fuel cell technologies is to develop technologies to enable fuel cells to be competitive in diverse applications, with a focus on light-duty vehicles, and to enable renewable hydrogen to be cost-competitive with gasoline (at less than \$ 4 per gallon gasoline equivalent, delivered and dispensed).
- **Vehicle Technologies.** The primary function of vehicle technologies is to develop and overcome barriers to the widespread use of advanced highway transportation technologies that reduce petroleum consumption and greenhouse gas emissions, while meeting or exceeding vehicle performance expectations. Strategic partnerships are used to accelerate the movement of technologies from the laboratory onto the road, and research and development is supported to reduce the cost and improve the performance of a mix of near- and long-term technologies, including advanced batteries; electric drive technologies; lightweight and propulsion materials; advanced combustion engines; advanced fuels and lubricants; and other enabling technologies.

### **Recent Organization Accomplishments**

EE's recent significant organization accomplishments include:

- **Led Significant Achievements in Promoting Energy Security, Economic Growth, and Environmental Protection.** Global investment in clean energy has increased substantially in response to the need to address energy security, economic growth, and environmental protection challenges and opportunities. EE's investment in applied research, development, and demonstration, and the removal of market barriers, has supported the following successes:
  - Wind power production has tripled since 2009, now exceeding 70 gigawatts (GW);
  - Solar power costs have dropped by more than 60%, with solar installations up by more than 20 times, shattering the 20GW barrier;
  - Battery costs have dropped more than 70%, and today we have more than 400,000 plug-in electric vehicles on America's roads.
  - Highly efficient LED lighting has dropped in cost by more than 90%, with LED deployment growing by more than 200 times to more than 80 million installed light bulbs today.

Third party evaluations of EE's investments have found that \$12 billion in EE R&D investments have resulted in economic benefits of more than \$230 billion.

- **Led Significant Improvements in Manufacturing.** EE has been a leader in building the National Network for Manufacturing Innovation, which will establish 15 Manufacturing Innovation Institutes all across the country. EE is launching five new Institutes in the areas of Wide Bandgap Power Electronics, Advanced Composites, and Smart Manufacturing, along

with two additional Institute topics soon be announced. DOE's superlative National Laboratory capabilities have also been leveraged to establish new National Lab-led manufacturing innovation models, including Manufacturing Demonstration Facilities (MDF) specializing in the areas of 3D Printing and High Performance Computing for Manufacturing. Additionally, the recently launched Energy Materials Network (EMN) will enable EE to establish DOE's first four EMN R&D consortia this year, in the areas of lightweight materials (LightMAT), non-precious metal electrocatalysts (ElectroCAT), solid-state cooling materials (CaloriCool), and solar module materials.

- ***Additional FY 2016 Corporate Achievements.***
  - Reduced the high-volume modeled costs for batteries to \$289/kilowatt hour (kWh), en route to a 2022 goal of \$125/kWh as part of the EV Everywhere Grand Challenge. EE will also reach 360 workplace charging challenge partners by the end of 2016.
  - Through the 3D Printing focused MDF at Oak Ridge National Laboratory, increased the speed of 3D printing by 1000 times beyond the state of the art and built parts that were 100 times bigger than any built before. Created the first-ever 3D-printed car, the Strati, and soon thereafter printed the "3D printed Shelby Cobra."
  - Published a long-range, national Hydropower Vision study.
  - Announced a selection for the Smart Manufacturing National Network for Manufacturing Innovation (NNMI). By the end of 2016, DOE will have established eight clean energy manufacturing research facilities: five NNMI institutes, two manufacturing demonstration facilities, and the Critical Materials Institute.
  - Issued 14 final energy efficiency standards as part of the Administration's goal to reduce carbon pollution by at least 3 billion metric tons cumulatively by 2030.
  - Continued a strong emphasis on technology to market activities, including expansion of the Cyclotron Road program to an additional laboratory and completion of the Lab Corps pilot.
  - Exceeded Active Project Management (APM) goals, with 4x more projects/year terminated early since APM started, and redirected funds to higher impact opportunities.
  - Released EE's 2016-2020 Strategic Plan, which is EE's blueprint for tackling the clean energy challenges, opportunities, and measurements of success.

### **Leadership Challenges**

EE's leadership challenges include:

- ***Recruitment and Retention.*** Like many government agencies, EE struggles to recruit and retain the best staff. For leadership positions, EE needs to identify high caliber experts in technology areas with executive level management experience. At the staff level, EE established a "Great Place to Work" program, to attract and retain the best and brightest.
- ***Predictable and Stable National Energy Policies.*** Stable, long-term energy policy is vital to EE and its private sector partners and vital to EE's mission to create and sustain American leadership in the transition to a global clean energy economy.

- ***Remaining Agile and Staying Ahead of Cutting Edge Research and Development.*** EE works with DOE's national laboratories and private sector partners to find solutions to today's and tomorrow's technical challenges. Those solutions are vital to the EE mission to create and sustain American leadership in the transition to a global clean energy economy.

## **Critical Events and Action Items**

### **3-month events**

- **Wave Energy Test Facility Selection Announcement.** The Department of Energy's Water Power Technologies Program intends to select one project that will design, permit, and construct an open-water, grid-connected, fully energetic national wave testing facility within U.S. Federal (territorial sea or contiguous zone) or state waters. It is expected that a viable wave test facility will be capable of testing up to full-scale (utility-scale) wave energy conversion (WEC) devices in order to develop reliable, low cost, renewable energy alternatives.
- **Critical Materials Institute Phase 2 Implementation Announcement.** The Critical Materials Institute (CMI) Hub, based in Ames, Iowa, is focused on technologies that make better use of critical materials (primarily rare earth materials) and reduce sensitivity to supply disruptions. The Advanced Manufacturing Office's FY17 budget request includes support for one renewed Hub, in case that is the path chosen to continue the current CMI Hub work, which is funded through FY16.
- **Washington, D.C. Auto Show.** The DC Auto Show, January 27-February 5, is typically a forum where EE announces the Vehicle Technologies Office Program-Wide Funding Opportunity Announcement (FOA), and potentially other competitive funding opportunities. It's also an opportunity to amplify DOE's role in transportation technologies related to energy security and climate change.
- **Green Truck Summit.** The Green Truck Summit, in March, is a key event for DOE to engage stakeholders in the medium- and heavy-duty transportation sectors.

### **6-month events**

- **Advanced Manufacturing Office Incubator Selections.** Approximately \$35 million will be competitively awarded to establish new "incubator" projects to support research and development opportunities identified in the advanced manufacturing chapter of the Quadrennial Technology Review. Incubator projects represent higher risk, innovative approaches that have not been traditionally funded by EE.
- **Bioenergy 2017.** The tenth annual Bioenergy Conference brings together stakeholders from government, national labs, non-governmental organizations (NGOs), academia, and the private sector to highlight progress and trends in bioenergy research, development, and deployment. This large meeting provides DOE leaders with an opportunity to amplify DOE's strategy and messaging around the role bioenergy can play in increasing energy security, reducing greenhouse gas emissions, and growing the economy.
- **The 5th U.S.-China Renewable Energy Industries Forum,** tentatively scheduled for late Spring 2017. EE-1 usually serves as head of delegation. Expect 150-200 leaders

(government, industry, institutes), equally split between China and the U.S. to discuss collaboration on energy productivity, renewable power and transportation.

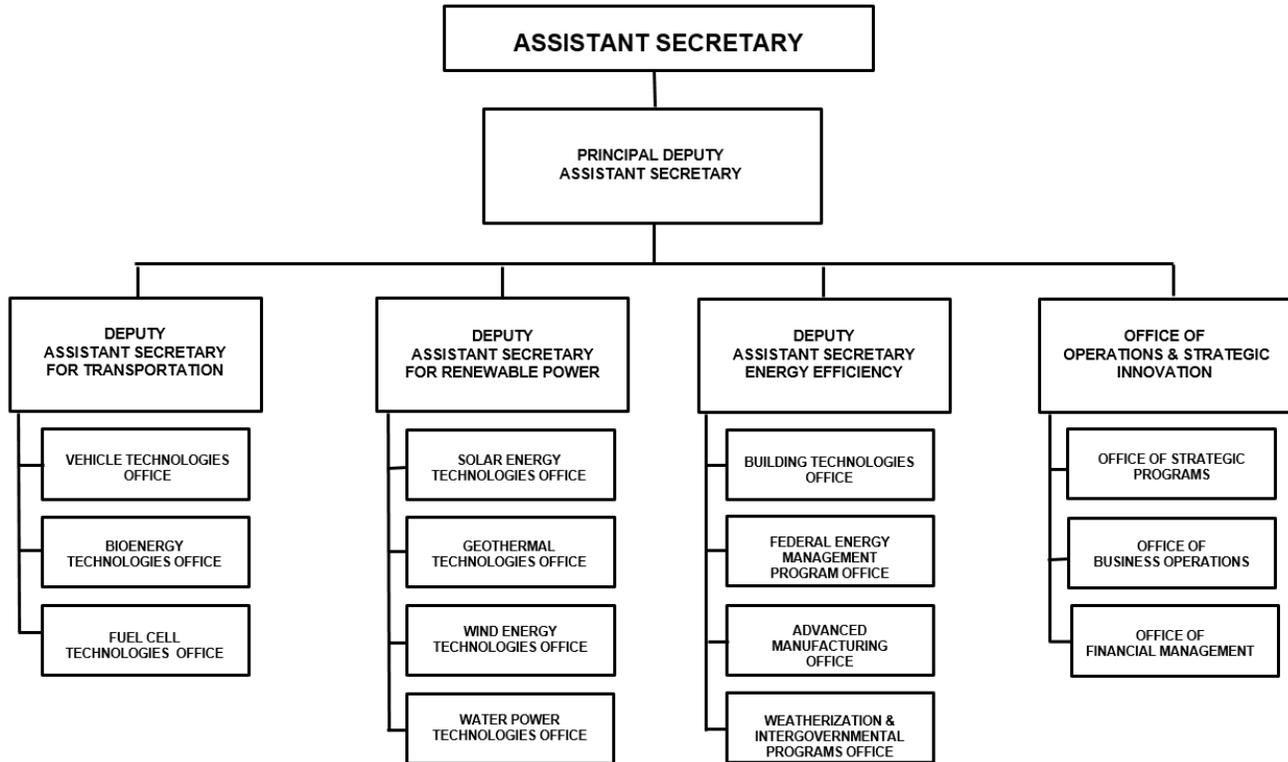
- Proposed congressional staff delegation trip to the National Renewable Energy Laboratory (NREL) in early Spring 2017. This trip will provide congressional staff a better understanding of NREL's mission and an opportunity to see clean energy technologies up close.

### **12-month events**

- **Geothermal Down-Select Announcement.** The Frontier Observatory for Research in Geothermal Energy (FORGE) is the core of the Department's efforts to accelerate domestic enhanced geothermal systems (EGS). EE's overarching objective for FORGE is to design and test rigorous and reproducible approaches for developing large-scale, economically sustainable heat exchange systems that enable widespread deployment of EGS. Two project sites will be reviewed for a down-select to one site going forward into the next phase. This down-select is schedule to happen in 12-16 months (from September 2016). This next phase includes funding for full site characterization, data system development, leadership team assemblage, baseline metrics, and an R&D plan for the site.
- **Clean Water Institute/Hub Selection.** The Advanced Manufacturing Office's FY17 budget request includes support for one new Institute and/or new Hub proposed to work on clean water technologies. Water is used in many phases of the energy life cycle from resource extraction and fuels production to electricity generation. With changes in climate, technology, and society, it is increasingly important to understand the withdrawal (or throughput), consumption, and degradation of water.
- **Advanced Vehicle and Fuel Cells Project Sections.** The Vehicle Technologies Office and the Fuel Cells Technology Office will announce approximately \$100M of new competitive, cost-shared awards. These awards improve our transportation energy security while reducing greenhouse gas profile of our transportation sector.
- **Solar Decathlon in Denver, CO during October 2017.** This week-long university competition focuses on displaying homes designed and built by students. DOE challenges collegiate teams to design and build full-size, solar-powered homes that push the limits of innovation in a series of 10 contests. The winner of the competition is the team that best blends design excellence and smart energy production with innovation, market appeal, and energy and water efficiency.

Organizational Chart

# ASSISTANT SECRETARY FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY



# Office of Fossil Energy

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

### Organization Information

**Name:**

Office of Fossil Energy (FE)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-6660

**Website:**

<http://www.energy.gov/fe/>

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### Supporting the DOE Mission

The mission of the Office of Fossil Energy (FE) supports the Department of Energy's mission to: "Enhance U.S. security and economic growth through transformative science, technology innovation, and market solutions to meet our energy, nuclear security, and environmental challenges."

### Mission Statement

FE plays a key role in helping the United States meet its continually growing need for secure, reasonably priced, and environmentally sound fossil energy supplies. FE's primary mission is to ensure the nation can continue to rely on traditional resources for clean, secure, and affordable energy while enhancing environmental protection.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$791.1 million
FY 2016 Enacted Budget	\$869.1 million
FY 2017 Budget Request	\$878.4 million

## **Human Resources<sup>i</sup>**

FY 2016 Full Time Equivalents (FTEs): 744 federal FTEs

FY 2016 Contractor Full Time Equivalents (FTEs): ~1,700 contractor FTEs

## **History**

FE has the longest directly-traceable history of any organization in the Department of Energy. The Federal Government's involvement in fossil fuel resources began several decades earlier, in the early 1900s. For example, the National Energy Technology Laboratory (NETL) began in 1910 as a U.S. Department of the Interior Bureau of Mines laboratory in Pittsburgh, Pennsylvania, dedicated to coal and coal mine safety.

In 1961, Congress established the Office of Coal Research in the U.S. Department of the Interior. The Energy Reorganization Act of 1974 created the Energy Research and Development Administration (ERDA) to carry out a more aggressive energy development program. The Office of Coal Research, shifted from the Interior Department to the newly-created ERDA, would become the core organization for the Fossil Energy program.

Following an oil embargo by the Organization of Arab Petroleum Exporting Countries from October 1973 to March 1974, Congress passed, and President Ford signed, the Energy Policy and Conservation Act in December 1975. Among other initiatives, it authorized the establishment of the Strategic Petroleum Reserve (SPR) and called for a stockpile of petroleum that could mitigate the economic damage of disruptions. It also specified the SPR-related authorities, including the details of oil acquisition and certain characteristics of the SPR, as well as U.S. participation in the International Energy Agency.

The Department of Energy Organization Act was passed in 1977. At that time, fossil energy coal and power plant research, development, and demonstration (RD&D) activities focused on a variety of technologies that addressed energy security, environmental, and energy cost concerns, but the highest priority continued to be technology for producing abundant and reasonable-cost transportation fuels from coal. NETL was designated a DOE National Laboratory in 1999.

In 2000, the Northeast Home Heating Oil Reserve (NEHHOR) was established as a way to help ensure adequate supplies of heating oil in the event of potential shortages due to colder-than-normal winters. In response to Superstorm Sandy, which took place in 2012, the Northeast Gasoline Supply Reserve (NGSR) was administratively established by DOE in 2014.

## **Functions**

- ***Clean Coal and Carbon Management Research and Development.*** FE's clean coal and carbon management office supports the research, development, and demonstration of advanced technologies to ensure the availability of clean, affordable energy from coal and other fossil resources. Key Programs and initiatives include:

- Carbon Capture, Utilization, and Storage (CCUS) R&D. This program advances R&D in safe, cost effective capture and permanent geologic storage and/or use of CO<sub>2</sub>. The technologies developed and large-volume injection tests conducted through this program will be used to benefit the existing and future fleet of fossil fuel power generating facilities by creating tools to increase our understanding of geologic reservoirs appropriate for CO<sub>2</sub> storage and the behavior of CO<sub>2</sub> in the subsurface.
- Advanced Energy Systems. This program advances R&D to improve the efficiency of fossil-fuel-based power systems, enable affordable CO<sub>2</sub> capture, increase plant availability, and maintain the highest environmental standards. Program elements include gasification, advanced turbines, solid oxide fuels cells, and supercritical CO<sub>2</sub>.
- CCUS Major Demonstrations. This program works in partnership with industry to demonstrate advanced CCUS technologies at commercial scale in the electricity generation and industrial sectors.
- International Partnerships. FE collaborates with international partners to leverage cost, risk, and information sharing through global R&D activities; exchange of best practices on policy and regulatory issues; and joint CCS demonstration projects at scale.
- ***Oil and Gas Research and Development***. FE's oil and natural gas R&D office supports research and policy options to ensure environmentally sustainable domestic and global supplies of oil and natural gas. FE oil and gas R&D includes:
  - Environmentally Prudent Development. This program addresses high-priority challenges to safe and prudent development of unconventional oil and gas resources to resolve issues surrounding safe and environmentally sustainable supply of natural gas. Priority research areas focus on water quality and availability; air quality; induced seismicity; and mitigating the impacts of development.
  - Emissions Mitigation and Quantification. This program develops advanced, cost-effective technologies to mitigate methane emissions from natural gas transmission, distribution, and storage facilities, including efforts focused on reducing methane emissions from pipelines, storage facilities, and related equipment.
  - Methane Hydrate. The most plentiful supplies of natural gas throughout the world may be the methane molecules trapped in ice-like structures called hydrates. DOE's research is helping to unlock the mysteries of hydrates and develop future ways to tap their massive energy potential.
- ***Petroleum Reserve Management***. FE manages emergency stockpiles of crude oil and petroleum products which can address supply disruptions. OPR protects the U.S. from severe petroleum supply interruptions through the acquisition, storage, distribution, and management of emergency petroleum stocks, and carries out U.S. obligations under the International Energy Program. FE manages three petroleum stockpiles: the Strategic Petroleum Reserve, the Northeast Home Heating Oil Reserve, and the Northeast Gasoline Supply Reserve. In addition to its emergency response function, OPR also manages the Naval Petroleum and Oil Shale Reserves program.
  - Strategic Petroleum Reserve. With a current inventory of 695.1 million barrels, the U.S. Strategic Petroleum Reserve is the largest government-owned emergency stockpile of

crude oil in the world. Established in the aftermath of the 1973-74 oil embargo, the SPR provides the President with a powerful response option should a disruption in commercial oil supplies threaten the U.S. economy. It is also the critical component for the United States to meet its International Energy Program obligation to maintain a capability for the release of emergency oil stocks in the event of a collective action response by the International Energy Agency to a global oil supply disruption.

- Northeast Home Heating Oil Reserve. The Northeast Home Heating Oil Reserve consists of a one-million-barrel supply of government-owned ultra-low sulfur distillate (diesel/heating oil) stored in commercially leased storage facilities in New Jersey, Connecticut, and Massachusetts available for use in the event of a regional supply shortage by homes and businesses in the northeastern United States, a region heavily dependent upon heating oil.
- Northeast Gasoline Supply Reserve. The Northeast Gasoline Supply Reserve consists of one million barrel supply of government-owned seasonally adjusted, regionally appropriate gasoline blendstock stored in commercially leased storage facilities in New Jersey, Massachusetts, and Maine.
- Naval Petroleum and Oil Shale Reserves. The Naval Petroleum and Oil Shale Reserve (NPOSr) program is focused on the environmental remediation of the Elk Hills oil field (Naval Petroleum Reserve No. 1). In 1998, the field was sold by DOE to Occidental Petroleum, and, as part of the sales agreement, DOE is required under a consent decree reached with the state of California to perform environmental remediation at 133 identified Areas-of-Concern.
- ***Natural Gas Regulation.*** FE grants authorization, in accordance with the Natural Gas Act of 1938 as amended, requiring any person who wishes to import and/or export natural gas, (including liquefied natural gas, compressed natural gas, compressed gas liquids, etc.) from or to a foreign country to obtain an authorization from the Department of Energy. DOE grants two types of authorizations, short-term (blanket) and long-term authorizations. A short-term authorization enables a company to import and/or export natural gas on a short-term or spot market basis for a period of up to two years. Long-term authorizations are generally used when a company has a signed gas purchase or sales agreement/contract, tolling agreement, or other agreement resulting in imports/exports of natural gas, for a period of time longer than two years.
- ***International Cooperation.*** FE is engaged in extensive bilateral and multilateral international cooperation with many individual nations on every continent and many multilateral organizations. Some highlights include the following:
  - The Carbon Sequestration Leadership Forum (CSLF). FE serves as the executive secretariat of CSLF, an international ministerial-level climate change initiative, focused on the development and deployment of improved cost-effective technologies for carbon capture and storage.
  - Bilateral Cooperation on CCUS. FE has ongoing formal collaborative relationships with countries in every region of the world and the European Union (EU). International partnerships range from countries like China, India, and others that currently rely heavily on coal for power generation, to regions like the Middle East with large industrial sectors

and significant oil and gas production, to likeminded countries across Europe that have both strong policy initiatives geared at promoting CCS and robust R&D programs to support CCS demonstrations. FE has been collaborating with China on fossil energy issues for over 20 years, and now have a robust program of cooperation through policy dialogue and technical work geared at advancing major CCS demonstration projects.

- International Cooperation in Methane Hydrate Research. FE works with several international partners, including Japan and India, to investigate the vast resource potential of methane hydrates.
- Global Methane Initiative. FE is a member of this initiative designed to promote cost-effective, near-term methane recovery internationally through cooperation between developed countries, developing countries, and countries with economies in transition.
- Bilateral Cooperation on Shale Gas and Tight Oil. FE works bilaterally with countries – including China, Argentina, Brazil, and the United Kingdom – who wish to develop their unconventional oil and gas to understand the technology and regulatory issues that allow for safe and prudent development of these resources.
- U.S. –China Oil and Gas Industry Forum. FE organizes the annual Forum with China’s National Energy Agency. Held first in 1998, the OGIF has been a valuable instrument in engaging the Chinese at both government and private sector levels for developing their oil and natural gas infrastructure in a manner that addresses China’s energy needs, advances U.S. commercial and environmental interests, and strengthens U.S.-Chinese bilateral ties.
- Asia Pacific Economic Cooperation. APEC's Energy Working Group seeks to maximize the energy sector's contribution to the region's economic and social welfare, while mitigating the environmental effects of energy supply and use. FE currently chairs the APEC Expert Group on Cleaner Fossil Energy (APEC EGCFE).
- Bilateral Cooperation with China on Oil Stockpiling Activities. In 2014, DOE and China’s National Energy Administration signed an MOU providing for continued cooperation and information sharing on technical, management, and policy matters related to oil stockpiling activities
- The International Energy Agency. The IEA is an intergovernmental body committed to advancing security of energy supply, economic growth, and environmental sustainability through energy policy co-operation. The Office of Fossil Energy is involved in many aspects of the IEA, including emergency preparedness and clean coal technology transfer, and also plays a leadership role. For example, FE currently chairs the IEA’s Working Party on Fossil Fuels and sits on the executive committee for both the IEA Greenhouse Gas Programme and IEA Clean Coal Centre.

### **Recent Organization Accomplishments**

FE’s recent significant organization accomplishments include:

- ***CO<sub>2</sub> Storage***. To date, the DOE-funded Regional Carbon Sequestration Partnerships and major demonstration projects have captured and successfully stored over 12 million metric tons of CO<sub>2</sub>. This is the equivalent of taking more than 2 million cars off the road for one

year. In July 2016, a DOE-sponsored project at a hydrogen production facility in Texas successfully captured its 3 millionth ton of CO<sub>2</sub>.

- ***Advancements in the design and scale-up of advanced coal and CCS technologies.*** First-generation CCS technologies are currently being demonstrated under the Clean Coal Power and Industrial CCS Initiatives for both coal power plant and industrial applications. One large-scale CCS project is operational and three more are under construction. Globally, there are 15 large-scale CCS projects in operation, many with DOE involvement, providing a wealth of data on CO<sub>2</sub> capture systems and CO<sub>2</sub> storage. A variety of advanced second-generation capture projects have progressed to the small pilot plant phase that focus on reducing overall CCS cost, and some are expected to be ready for larger scale testing by 2020. As a result of continued public investment, the cost of CO<sub>2</sub> capture has dropped over 40 percent from 2000 to 2015 and is on track to decrease an additional 20 percent by 2025.
- ***Collaborations Formed to Achieve Carbon Capture Technology Goals.*** In 2016, FE's Carbon Capture Simulation for Industry Impact (CCSI2) program established three cooperative research and development agreements (CRADAs) with projects in FE's Carbon Capture research project portfolio to examine several challenging technology issues including non-aqueous solvents, advanced regenerator systems, and dynamic modelling for advanced feedforward control strategies for carbon capture systems. In addition, 12 publications or conference papers were completed, and 14 inventions, patent applications, and licenses were issued as a result of the FE CCSI2 work.
- ***World's Largest Chemical Looping Combustion Facility Recommissioned.*** Under the Advanced Combustion R&D Program managed by FE, Alstom re-commissioned and operated their 3 megawatt thermal (MWth) chemical looping combustion prototype, the largest chemical looping facility in the world, and commissioned and operated a 100 kilowatt thermal (KWth) pilot-scale test facility.
- ***50 kWe Solid Oxide Fuel Cell System Surpassed Performance Goals.*** Under a project managed by FE, a 50 kilowatt electrical (KWe) solid oxide fuel cell (SOFC) power system was built, tested, and integrated into the electrical grid. The SOFC system produced 49.5 kW of AC power at 61 percent efficiency (HHV) with a degradation of 0.9 percent/1,000 hours over 1,500 hours of operation. The results surpassed goals for efficiency, degradation, and test duration.
- ***10 MW Supercritical Transformational Electric Power Pilot Plant.*** FE completed a study on the performance and cost of a 10 megawatt electrical (MWe) supercritical CO<sub>2</sub> pilot plant in support of DOE's Supercritical Transformational Electric Power (STEP) Crosscut Team. The study evaluated both greenfield and brownfield variations at two turbine inlet temperatures (550 and 700°C).
- ***Advanced Ultra Supercritical Consortium.*** FE started an industry-National Laboratory consortium to demonstrate the materials technologies needed to achieve a step increase in the efficiency of pulverized coal in Rankine cycle power plants, which would reduce CO<sub>2</sub> emissions per MWhr of power generated.
- ***Multiphase Flow Science Continues Global Recognition.*** Multiphase Flow with Interphase Exchanges (MFiX) is a general-purpose computer code developed at FE for describing the hydrodynamics, heat transfer, and chemical reactions in fluid-solids systems. Recently, the

MFiX platform has surpassed 4,000 registered users from around the world, and enables numerous ongoing collaborations with other National Labs, industry, and academia.

- ***Research Advances Recovery of Rare Earth Elements from Coal.*** Since 2015, FE's Research and Innovation Center has made significant progress in exploring the production of rare earth elements (REE) from coal and coal by-products. FE's innovative work in this area has recently resulted numerous publications, inventions, and awards.
- ***Extensive Interagency Collaboration and Coordination in Federal Gas Hydrate Research.*** The Methane Hydrates Program is the only entity actively supporting fundamental science to assess gas hydrates' role in the global carbon cycle and its potential for contributing to environmental change. The program is a recognized global leader in gas hydrate science and technology and supports comprehensive geological and engineering studies to develop field programs for gas hydrate evaluation, including assistance to the governments of India and South Korea. During summer 2016, DOE-supported scientists were at sea with European colleagues to acquire the first full suite of pressure cores within a zone of gas hydrates that are potentially susceptible to climate change. DOE is also coordinating efforts with Japan, India, and Korea to fully integrate geomechanical phenomena into existing numerical simulation tools that can be used to plan and evaluate gas hydrate field production tests.
- ***Risk Assessment for Offshore Development.*** FE's offshore research has been the driver for two collaboration memorandums with the Bureau of Land Management's Bureau of Safety and Environmental Enforcement and its Bureau of Ocean Energy Management. The developments placed FE "front and center" as the Nation's leading lab for supporting continuing offshore studies focused on offshore risk reduction. In particular, FE's unique and cutting-edge research into the characteristics of foamed cement under the temperature and pressure environment in deep offshore wells has helped elevate this area of study in offshore well safety considerations.
- ***Long-Term Strategic Review of the U.S. Strategic Petroleum Reserve (SPR).*** FE recently completed a year-long strategic review of the SPR that will serve as a road map to guide SPR planning for the next 25 years. The review provided an overview and history of the SPR; discussed the capabilities and challenges of the SPR's infrastructure and distribution systems; identified issue areas associated with the legal authorities governing the SPR; and described plans for an SPR Modernization program.

### **Leadership Challenges**

FE's leadership challenges include:

- ***Program Direction Investment Levels.*** Support and approval for an increase in Program direction is critical to supporting FE's programs and operations necessary to meet R&D challenges related to clean energy; low carbon; environmentally prudent development and water protection; national energy security; and jobs.
- ***Workforce Recruitment and Retention at NETL.*** Recruitment and retention of qualified technical staff, according to needs indicated in staffing analyses, to rebalance the workforce to strengthen and expand Federal competencies and expertise associated with strategic initiatives; to emphasize FE's S&T mission; and satisfy a requirement for succession

planning to accommodate the potential retirement of 50 percent of FE's current workforce within the next five years.

- ***Strategic Partnerships.*** Develop and enhance strategic partnerships and technology transfer activities to accelerate clean energy technology implementation in the marketplace; increase transfer of FE intellectual property to the private sector; and leverage FE core competencies to address industry and national needs.
- ***Legislatively-Mandated SPR Crude Oil Sales.*** Planning, coordination, and execution of multi-year non-emergency SPR crude oil sales while maintaining the Reserve's emergency response capability.
- ***Strategic Petroleum Reserve Modernization.*** Section 404 of the Bipartisan Budget Act of 2015 directed the Secretary to establish an SPR modernization program to provide for the construction, maintenance, repair, and replacement of SPR facilities. This program consists of two distinct projects: Life Extension II and Marine Terminal Distribution Capability Enhancements.
- ***NGSR Commercial Leased Storage Contracts.*** The current commercial leased storage contracts for the NGSR expire on December 31, 2018. The process to re-compete these contracts through a competitive solicitation will need to be started in the first half of FY 2018.

### **Critical Events and Action Items**

#### **3-month events**

- SPR crude oil sales can begin in FY 2017, under the authority of Section 404 of the Bipartisan Budget Act of 2015, which provides authority for the sale of up to \$2 billion dollars of crude oil during FY 2017 through FY 2020. In FY 2017, the Administration has submitted a budget amendment to Congress for an appropriation to sell \$375.4 million of crude oil. Sales could begin soon after the start of CY 2017, pending receipt of a Congressional appropriation (as early as January 2017, depending on Congressional appropriations).
- The Kemper Integrated Gasification Combined Cycle power plant begins commercial operations with CCS (November 2016).
- First regional industrial CCS outreach event planned in the Gulf Coast (November 2016).
- The NRG Energy project begins CO<sub>2</sub> capture and sequestration (January 2017).
- Define and implement a pathway that enables a refresh of NETL's Joule supercomputer that is now out of warranty and at risk of sharply diminished capability within the year. The Joule is a necessary component of more than 50 percent of the R&D conducted by NETL.
- Critical Decision-1, Analysis of Alternatives for the SPR Modernization's Life Extension Project, to be submitted to the Deputy Secretary and Energy Systems Acquisition Advisory Board for approval.

#### **6-month events**

- The Archer Daniels Midland (ADM) project begins CO<sub>2</sub> injection (first half 2017).

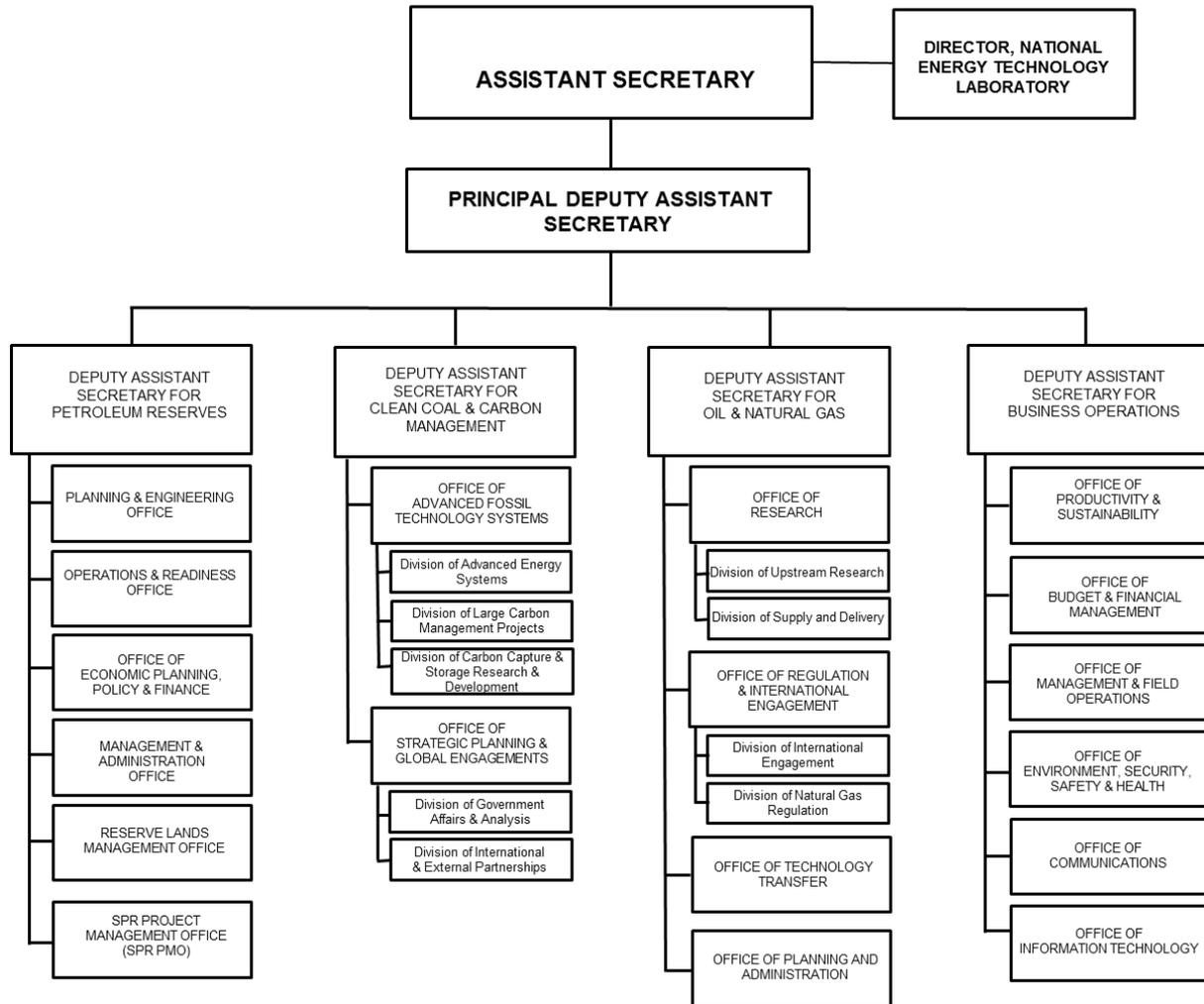
- Carbon Sequestration Leadership Forum Mid-Year Meeting (June 2017).
- Publish Fossil Energy Technology Roadmap, a strategic document that scopes the technical vision for fossil energy and the technology pathways needed to achieve that vision.
- Commence NEPA analysis for the SPR Modernization’s Marine Terminal Distribution Capabilities Enhancement Project.

**12-month event**

- Carbon Sequestration Leadership Forum Ministerial, an S1-led event (November 2017).
- Under Mission Innovation (international) efforts, the U.S. recently agreed to host an “Innovation Challenge” workshop on CCUS sometime in 2017.
- Complete key milestone in Crude Characterization study.
- Implement Methane Hydrates/Gas Pathways strategy.
- Continue to review and consider pending applications for LNG exports and oversee ongoing export activity.

**Organizational Chart**

**ASSISTANT SECRETARY FOR FOSSIL ENERGY**



<sup>i</sup> These FTE numbers include staff at FE Headquarters, the National Energy Technology Laboratory, the Strategic Petroleum Reserve (SPR) Management Office in New Orleans, and the four Strategic Petroleum Reserve storage sites.

# Office of Indian Energy Policy and Programs

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

### Organization Information

#### Name:

Office of Indian Energy Policy and Programs (IE)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-1272

#### Website:

<http://www.energy.gov/indianenergy/office-indian-energy-policy-and-programs>

#### Point-of-Contact E-mail Address:

[david.conrad@hq.doe.gov](mailto:david.conrad@hq.doe.gov)

### Supporting the DOE Mission

The Office of Indian Energy Policy and Programs (IE) supports DOE's mission by funding energy development, providing technical assistance, and building human and technical capacity for 567 federally recognized Indian Tribes and Alaska Natives across the U.S. American Indian lands contain an estimated 5% of the nation's renewable energy generation resources and significant amounts of fossil energy – resources that can address tribal and national energy demand. The Office of Indian Energy fulfills DOE's Strategic Goal 1 for Science and Energy by deploying energy technologies and promoting data driven policies to enhance economic growth, job creation, energy security, and environmental quality in native communities across the U.S. –

communities that contain some of the nation’s highest per capita rates of poverty, unemployment, and economic distress.

### **Mission Statement**

The mission of the Office of Indian Energy is to maximize the development and deployment of energy solutions for the benefit of American Indians and Alaska Natives.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$16.0 million
FY 2016 Enacted Budget	\$16.0 million
FY 2017 Budget Request	\$22.9 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 9.

### **History**

DOE has implemented a Tribal Energy Program since 2002, first within the Weatherization and Intergovernmental Program in the Office of Energy Efficiency and Renewable Energy. The Office of Indian Energy Policy and Programs was authorized by Congress in the Energy Policy Act of 2005 and formally established within DOE in 2011. Beginning with the 2015 appropriation, IE has been responsible for implementing the Tribal Energy Program.

IE strengthened its ability to deliver its “fuel neutral” policy for all of its programs supporting energy project development on tribal lands in Alaska and the lower 48 states. In March 2016, the Department issued IE’s Strategic Roadmap, which has been guiding program implementation.

### **Functions**

IE functions are designed to: promote Indian tribal energy development, efficiency, and use; reduce or stabilize energy costs; enhance and strengthen Indian tribal energy and economic infrastructure related to natural resource development and electrification; and bring electrical power and service to Indian land and the homes of tribal members. Specific activities include:

- ***Technical Assistance.*** Technical experts from DOE and its national laboratories, along with other partnering organizations, provide support to assist Indian tribes and Alaska Native villages with energy planning; housing and building energy efficiency; project development; policy and regulation; climate resilience; and village power. The goal of the technical assistance is to address a specific challenge or fulfill a need that is essential to a current project's successful implementation. The intended result is a tangible product or specific deliverable designed to help move a project forward.
- ***Education and Training.*** Supports tribal efforts to build internal capacity to understand and navigate energy projects by providing regional workshops, webinars, Tribal Leader Forums, college student internships, a comprehensive online training curriculum, and an energy resource library.

- **Financial Assistance.** Provides competitive, merit-based financial assistance for energy project deployment on tribal land.

### **Recent Organization Accomplishments**

IE's recent significant organization accomplishments include:

- In July, 2016 the Soboba Band of Luiseño Indians (Tribe) celebrated the installation of a 1-megawatt (MW) solar photovoltaic (PV) system on its approximately 7,000-acre Reservation in the foothills of the San Jacinto Valley in Southern California. The Tribe invested more than \$1.0 million in the \$2.1 million solar PV project, which was co-funded by a \$1 million DOE IE grant competitively awarded to the Tribe in FY 2015.
- In June, 2016, DOE and the Department of the Interior signed a Memorandum of Understanding (MOU) to coordinate efforts and resources to promote deployment of energy projects on tribal lands focused on local economic development. The MOU represents a historic collaboration between the agencies joining forces to improve delivery of federal government services and programs in Indian Country.
- In May, 2016 the Blue Lake Rancheria (Tribe) hit a new milestone as construction of its 500-kilowatt (kW) solar array commenced. The solar system is a cornerstone of the Tribe's low-carbon, community-scale micro-grid project. The micro-grid will power the Tribe's government offices, casino, hotel, and event center, while providing energy savings through peak demand situations.
- In April, 2016, the Menominee Tribal Enterprises (MTE) celebrated the official opening of its biomass combined heat and power (CHP) district energy plant. MTE is the business arm of the Menominee Indian Tribe of Wisconsin. In 2014, DOE co-funded the \$2.06 million MTE project (matching MTE's \$1.03 million investment) to install the new CHP system, which generates steam and electricity using renewable biomass fuel to power the Tribe's sawmill and lumber drying operation.
- In April, 2016 the Seneca Nation of Indians (SNI) held a groundbreaking ceremony for its 1.5-MW turbine. The turbine is scheduled to be operational by the end of 2016. The Seneca Nation has worked with DOE since 2003 through various funding opportunity announcements and technical assistance grants to reach this implementation phase of the project. SNI proposed to install a 1.8-MW community wind turbine with a maximum hub height of approximately 265 feet, maximum rotor diameter of approximately 330 feet, and overall maximum height of approximately 430 feet on the selected site. The project is estimated to produce approximately 4.5 million kilowatt-hours (kWh) of electricity per year, resulting in a 35% annual energy savings for the Tribe. In 2014, the SNI Wind Turbine Project was competitively selected to receive \$1.5 million in DOE funding to supplement the Tribe's \$4.5 million investment in the installation of the wind turbine.

### **Leadership Challenges**

IE's leadership challenges include:

- **Long Term Budget Support.** Long-term budget support to accomplish the Strategic Goals and Strategic Target Areas set forth in IE's Ten-Year Plan. Continued support for increased budget requests are critical to continuing to implement the IE Strategic Roadmap.

**Critical Events and Action Items**

**12-month events**

- Secretary of Energy's National Tribal Energy Summit, May 2017.

**Organizational Chart**

# **INDIAN ENERGY POLICY & PROGRAMS**



# Office of Nuclear Energy

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

### Organization Information

#### Name:

Office of Nuclear Energy (NE)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-2240

#### Website:

<http://energy.gov/ne/office-nuclear-energy>

#### Point-of-Contact E-mail Address:

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### Supporting the DOE Mission

The Department of Energy 2014-2018 Strategic Plan states the mission of the Department is to enhance U.S. security and economic growth through transformative science, technology innovation, and market solutions to meet our energy, nuclear security, and environmental challenges.

### Mission Statement

The NE mission is to advance nuclear power as a resource capable of meeting the Nation's clean energy, environmental, and national security needs by resolving technical, cost, safety, proliferation resistance, and security barriers through research, development, and demonstration (RD&D). NE supports the diverse civilian nuclear energy programs of the U.S. government, leading federal RD&D efforts in nuclear energy technologies, including generation, safety, waste storage and management, and security technologies.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$833.4 million
FY 2016 Enacted Budget	\$986.2 million
FY 2017 Budget Request	\$993.9 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 372.

## **History**

During World War II, most nuclear research focused on developing an atom bomb. After the war, the United States government encouraged the development of nuclear energy for peaceful civilian purposes. Congress created the Atomic Energy Commission (AEC) in 1946 to control nuclear energy development and explore peaceful uses of nuclear energy. On March 1, 1949 the AEC announced the selection of a site in Idaho for the National Reactor Testing Station, this was the origin of what is now the Idaho National Laboratory (INL). The world's first usable amount of electricity from nuclear energy was generated in Idaho in 1951. Over the years, 52 mostly first-of-a-kind reactors were designed, built and decommissioned at Idaho's national laboratory, resulting in exceptional capabilities in nuclear engineering and numerous associated areas of science, engineering, technology development, and nuclear safety and security. The Office of Nuclear Energy originated in January 1980.

## **Functions**

The Nuclear Energy Program can be well characterized by six major program activities that address the breath of issues important to sustaining nuclear power as a source of clean energy. These include; Sustaining the Current Fleet of Light Water Reactors, Deploying Small Modular Reactors, Advanced Reactor Demonstration, Waste Management,, Nuclear Science User Facilities and Enabling Capabilities and Federal Program Management. The following paragraphs include major activities funded in FY-16 and requested in FY-17 along with new initiatives that may be proposed in the out-years.

### **Sustaining the Current Fleet of Light Water Reactors**

- ***Light Water Reactor Sustainability.*** NE conducts R&D on advanced technologies to improve the reliability, sustain the safety, reduce costs and extend the life of current reactors, as well as addressing the impacts of the Fukushima accident, with a focus on enhancing the accident tolerant characteristics of reactors and their operation.
- ***Advanced Fuels.*** NE supports long-term technology development activities to: develop next generation light water reactor fuels with enhanced accident tolerance; investigate fuel forms, reactors and fuel/waste management approaches that could dramatically increase the sustainability of nuclear energy including improved utilization of fuel resources; develop techniques that will enable long-lived actinide elements to be recycled (i.e., fully closed fuel cycles) to promote a cost effective and low-proliferation-risk approach that significantly

decreases the long-term challenges posed by nuclear waste and its disposal; and improve the utilization of fuel resources to reduce the amount of natural material required to produce nuclear energy.

- ***Light Water Reactor Modeling and Simulation.*** The Energy Innovation Hub for Modeling and Simulation is creating a virtual model of an actual operating pressurized water reactor to simulate reactor behavior. Engineers will be able to use this virtual model to improve the safety and economics of reactor operations by simulating proposed solutions to reactor power production increases and reactor life and license extensions.

### **Deploying Small Modular Reactors**

- ***Small Modular Reactor (SMR) Licensing Technical Support Program.*** NE supports first-of-a-kind costs associated with design certification and licensing activities for SMR designs through cost-shared arrangements with industry partners (industry contributions are a minimum of 50% of the cost) to promote the development and deployment of SMRs that can provide safe, clean, affordable power. This program has facilitated substantial progress in the certification of the most mature SMR designs, and helped to accelerate permitting and licensing activities for the first-mover customers.
- ***Small Modular Reactor Enterprise Innovation*** - NE is identifying opportunities and potential areas of investments for a follow-on SMR Enterprise Innovation program that will further assist industry in overcoming the financial and regulatory barriers facing the SMR industry, with a goal of having the first operational SMR in the mid-2020s. Broad deployment of SMRs would provide an additional clean baseload energy option for decarbonizing the U.S. electrical grid, and potentially other sectors (i.e., industrial processes) of the U.S. economy.

### **Demonstrating Advanced Reactors**

- ***Test/Demo Reactor*** – The Office of Nuclear Energy has begun studies to identify important mission and advanced reactor technology needs. Depending upon the outcome of these studies, as well as the results of studies conducted by DOE Advisory Committees, NE may propose a new test/demo initiative.
- ***Advanced Reactor Technology*** - NE develops new and advanced reactor designs and technologies to further the state of reactor technology, to improve its competitiveness, and to help advance nuclear power as a resource capable of meeting the Nation's energy, environmental, and national security needs. Program activities are designed to address technical, cost, safety, and security issues associated with advanced reactor technologies, such as fast reactors using liquid metal coolants and high temperature reactors using helium or liquid salt coolants.
- ***Crosscutting Technology Development*** – NE conducts high risk research that could overcome technical limitations in Advanced Reactors. Also, examines new classes of materials, develops innovative solutions to unique and crosscutting nuclear R&D challenges.
- ***NEAMS*** – The Nuclear Energy Advanced Modeling and Simulation program develops advanced modeling and simulation tools to support Advanced Reactor Technologies and fuel cycle R&D programs. NEAMS engages scientist and engineers in developing state-of-the-

art, multi-scale physics and chemistry models that drive advanced computational methods for nuclear systems.

- ***Materials Recovery & Waste Form Development*** – Develop advanced material recovery as well as advanced waste form development technologies. Achieving sustainable, economic and non-proliferation attributes in recycled LWR and Advanced Reactors is critical for the nuclear fuel cycle. This activity includes Joint Fuel Cycle Studies with the Republic of South Korea.
- ***Materials Protection, Accounting & Control Technology*** – Supports the development of the next generation of nuclear materials management and safeguards for future U.S. nuclear fuel cycles.
- ***Fuel Resources*** – Investigates alternatives to assure a long-term supply of nuclear fuel resources.

### **Waste Management**

- ***Used Fuel Disposition R&D*** – In addition, this function includes longer-term scientific research and technology development to enable storage, transportation, and disposal of used nuclear fuel (UNF) and wastes generated by existing and future fuel cycles. Because of the evolution of the domestic UNF inventory, special emphasis is placed on understanding the behavior of high-burnup fuels and other material properties affecting the safe storage, transportation, and disposal over the many decades. This program plays a leading role in the implementation of the Administration’s strategy on the management of spent nuclear fuel and high-level waste.
- ***Integrated Waste Management System*** – Priorities include developing the components of an integrated waste management system for spent nuclear fuel and high-level waste disposition that includes interim storage, disposal, and transportation capabilities, with the establishment of a consent-based, bottoms up, siting process. The consent-based siting process will support building relationships with willing and informed communities, States, and Tribes as equal partners to play a role as host to one or more nuclear waste facility.

### **Nuclear Science User Facilities and Enabling Capabilities**

- ***Idaho Facilities Management (IFM) and Idaho Site-wide Safeguards and Security (S&S)*** - NE has two major infrastructure programs that provide the basis to enable nuclear research and development missions with significant quantities of nuclear materials. The Idaho Facilities Management (IFM) program provides the basis for planning, acquisition, operation, maintenance, disposition, and protection of NE-owned facilities, capabilities, and nuclear energy research; testing of naval reactor fuels and reactor core components; and a range of national security technology programs. The S&S program funds all physical and cyber security activities for the INL, providing protection of the Department’s nuclear materials, classified and unclassified matter, government property, personnel, and other vital assets.
- ***Nuclear Science User Facilities*** – Provides single point access to unique nuclear energy research capabilities at multiple DOE and University locations through competitive awards. Supports commercialization of innovative concepts.

- **Radioisotope Power Systems** - NE designs, builds, tests, and delivers safe and reliable nuclear power systems for space exploration and national security applications.

### **Federal Program Management**

- **Federal Program Management** - Provides federal staffing resources and costs associated with operations within the Office of Nuclear Energy. The FY-17 request includes a 10% increase in order to permit replacement of staff and restore end of year balances following two consecutive year of austere budgets and a congressionally directed rescission.

### **Recent Organization Accomplishments**

NE's recent significant organization accomplishments include:

- **Utah Associated Municipal Power Systems/NuScale Small Modular Reactor.** Awarded a \$33.2M cooperative agreement in August, 2015 with NuScale Power to facilitate site permitting and related licensing activities of SMR technologies. Under the award NRC licensing preparation and site characterization activities will be conducted. DOE executed a Site Use Permit on February 17, 2016, that grants UAMPS the ability to locate an SMR within the borders of the Idaho National Laboratory (INL).
- **Public Private Partnerships and the Gateway for Accelerated Innovation in Nuclear (GAIN).** In November 2015, the Department established the GAIN initiative to provide the nuclear industry with access to the technical, regulatory, and financial support necessary to move new or advanced nuclear reactor designs toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet. As an initial GAIN initiative to build public private partnerships, the Department made approximately \$2 million available through the Nuclear Science User Facilities (NSUF) to provide access to world-class neutron and gamma irradiation and post-irradiation examination services to General Electric Hitachi. Under the innovative GAIN public private partnership model, DOE is also supporting a nearly \$3 million collaborative effort with Westinghouse on three projects, two of which are collaborative efforts with Argonne National Laboratory and Virginia Polytechnic Institute. Additionally, The Office of Nuclear Energy established a new Small Business Voucher Program, initiated through GAIN, to provide up to \$2 million in 2016 to help small businesses overcome critical nuclear technology and commercialization challenges.
- **Advanced Nuclear Power Reactors.** DOE funded cost-shared research and development activities with industry to support two companies, X-Energy and Southern Company, to further develop advanced nuclear reactor designs. These awards, with a multi-year cost share of up to \$80 million for both companies, will support work to address key technical challenges to the design, construction, and operation of next generation nuclear reactors. The projects will allow industry-led teams, which include participants from universities and national laboratories, to further nuclear energy technology, and will enable companies to further develop their advanced reactor designs with potential for demonstration in the 2035
- **Advanced Test/Demonstration Reactor Options Planning Study.** The Office of Nuclear Energy has issued the final Advanced Test/Demonstration and Test Reactor Options Planning Study (ATDR) which identified important mission and advanced reactor technology needs; established strategic objectives; developed a comprehensive set of goals, criteria and

metrics; evaluated technology maturity levels; and evaluated several reactor point designs including considerations of cost, schedule, and possible licensing approaches.

- ***Nuclear Energy University Program.*** DOE is awarding nearly \$63 million through its Nuclear Energy University Program (NEUP) to support 49 university-led nuclear energy research and development projects in 24 states. NEUP seeks to maintain U.S. leadership in nuclear research across the country by providing top science and engineering students and faculty members opportunities to develop innovative technologies and solutions for civil nuclear capabilities. In addition to research projects, NEUP funds critical University nuclear infrastructure at 15 universities and six larger scope Integrated Research Projects.
- ***Crosscutting Research Projects.*** Nearly \$7 million was awarded for seven research and development projects led by DOE national laboratories, industry and U.S. universities to conduct research to address crosscutting nuclear energy challenges that will help to develop advanced sensors and instrumentation, advanced manufacturing methods, and materials for multiple nuclear reactor plant and fuel applications.
- ***Nuclear Science User Facilities.*** The DOE has selected eight universities, two national laboratories, and one industry-led project that will take advantage of NSUF capabilities to investigate important nuclear fuel and material applications. DOE will fund over \$9 million in facility access costs and expertise for experimental neutron and ion irradiation testing, post-irradiation examination facilities, synchrotron beamline capabilities, and technical assistance for design and analysis of experiments through the NSUF.
- ***ATR Core Modeling and Simulation.*** The multi-year ATR Core Modeling Upgrade Project was completed. Implementation of the software suite was required for insertion of the Ki-Jang Research Reactor (KJRR) experiment in the northeast flux trap of ATR. This experiment is necessary to allow licensing and startup of a vital new reactor capability in Korea, which will be used for medical isotope production. Analytical models were determined to be in good agreement with measured values demonstrating the adequacy of the software suite to allow for safe insertion of the experiment into ATR. In addition, validation of this code will enhance the ability to insert future fuel types into ATR eliminating the need for lengthy and less reliable calculation methods.
- ***Consent-Based Siting for Nuclear Waste Management System.*** In FY 2016, DOE has hosted eight public meetings around the country intended to help design its consent-based siting process for federal facilities to manage our nation's nuclear waste. These meetings are intended to allow the public, communities, states, Tribal Nations and others to help inform the Department's thinking as it develops this process. Ultimately, a consent-based approach to siting will ensure that communities, tribes, and states, as partners, are comfortable with the location of future storage and disposal facilities before they are constructed. These meetings were held around the country to begin the discussion on the national level, highlighting the importance and urgency of this challenge, and to collect input on how this process should be designed. Continuing these public meetings in some form are a central part of continuing this important public engagement.

## **Leadership Challenges**

- ***Nuclear Retirement Drivers.*** Nuclear power currently supplies about 20% of U.S. electricity (approximately 60% of carbon free electricity), but its share appears poised for decline. Since 2012 when 104 reactors were operating, five units have shut down earlier than their licensed lifetime. As of July 1, 2016, an additional nine units [6.7 gigawatts (GW)] have announced intentions to close prematurely. Pacific Gas and Electric Company announced that it would not pursue license extensions for its two-unit Diablo Canyon Power Plant (2.2 GW). If current market conditions persist, it is plausible that there will be future retirements and an associated decrease in carbon free electricity.
- ***Advanced Reactor Path Forward.*** There has been an increasing level of interest by the private sector, the Administration, and Congress regarding the development and deployment of advanced reactor technologies. Events include the White House Summit on Nuclear Energy (11/2015), Third Way Symposium (1/2016), US NIC Conference on Advanced Reactors (2/2016), NRC/DOE Workshops on Advanced Reactors (9/2015 and 6/2016) and numerous examples of bipartisan and bicameral proposed legislation. Completion of ongoing reviews by the Secretary of Energy's Advisory Board (SEAB) and the Nuclear Energy Advisory Committee (NEAC) will require the development of a comprehensive path forward to focus the resources of DOE and the broader nuclear energy community to address the role and timing of advanced nuclear reactor technology deployment.
- ***Vision and Strategy for Advanced Reactors.*** Given the number of nuclear plant retirements expected over the next few decades, sustaining a substantial nuclear presence in the U.S. beyond 2050 will almost certainly require the development and deployment of a new generation of advanced reactors. DOE, with stakeholder input, has developed a document titled, "Vision and Strategy for the Development and Deployment of Advanced Reactors," for supporting the deployment of advanced reactor technology as part of a broader federal commitment to clean energy and national security. The Strategy identified six strategic objectives to accelerate the development and deployment of advanced reactors that are essential to achieving the goals of bringing two designs through the Nuclear Regulatory Commission's licensing review process in the early 2030's and having advanced reactors become a significant and growing component of the U.S. nuclear fleet by the 2050's.
- ***Need for an Irradiation Test Reactor.*** In addition to overseeing the Advanced Test and Demonstration Reactor Planning Study, the NEAC will assist in determining the need and requirements for an irradiation test reactor. While NE's ATDR Study determined the types of reactor that would best fulfill the various demonstration and irradiation test reactor missions, the ATDR Study did not ascertain if an irradiation test reactor was needed, nor perform a comparison with alternative methodologies and approaches for meeting those needs and providing those capabilities.
- ***Recommendations from the SEAB Task Force.*** NE will need to develop a path forward responding to the final SEAB Task Force report that examines the Future of Nuclear Power. The Task Force will address four interrelated questions: (1) How would the substantial development costs be financed; (2) Are there prospects for sharing these large development costs with other countries; (3) Beyond development cost, there will be substantial cost for one or more "first-of-kind" reactors; are there Federal mechanisms that could be employed to

support a portion of the costs of this early deployment phase; and (4) How would this project be managed? The final report from the Task Force is expected by December 2016.

- ***INL Receipt of Small Quantities of Commercial Spent Fuel for Research.*** Work continues to determine a path forward.
- ***Nuclear Waste Management.*** In FY10, the Secretary of Energy chartered the Blue Ribbon Commission to “conduct a comprehensive review of policies for managing” the nuclear fuel cycle, including all civilian and defense applications of nuclear technology. The Commission's recommendations were delivered to the Secretary in January 2012. In January 2013, the Administration issued its Strategy for the Management and Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste. The Administration’s position is that additional statutory authority is required to fully implement its Strategy, thus the Department is only undertaking activities consistent with the BRC’s recommendations within existing authority, including in the area of spent fuel transportation and storage. On March 24, 2015, the Department of Energy announced that it would move forward with planning for a separate repository for defense high level waste, while pursuing a parallel path forward for interim storage for spent nuclear fuel, utilizing a consent-based siting process for both types of facilities. On December 21, 2015, the Department announced a yearlong initiative to develop a consent-based process to site facilities collaboratively with the public, communities, stakeholders, and governments at the state, tribal, and local levels. In the FY17 budget request, the program shifted from “laying the ground work” to initiation of the consent-based process for an integrated waste management system (with the process designed in FY16). Congressional positions on this program are split (Senate endorses this request and the House is supportive of resuming the licensing activities for the Yucca Mountain repository).
- ***Accident Tolerant Fuels.*** Following the events at Fukushima, Congress directed DOE-NE to develop Accident Tolerant Fuels, a next-generation nuclear fuel with higher performance and greater tolerance for extreme, beyond design basis events, by 2022. A transient testing capability is needed by 2018 to support licensing of new reactor fuels developed as part of this program. The Department is working to re-establish the ability to conduct transient testing of nuclear fuels and materials at the TREAT Facility.
- ***Transient Reactor Test Facility (TREAT) at Idaho National Laboratory.*** Resumption of transient testing at the INL is a major effort underway by NE to support DOE research objectives. Operating from February 1959 until April 1994, the TREAT Facility at INL was specifically built to conduct transient reactor tests where the test material is subjected to neutron pulses that can simulate conditions ranging from mild upsets to severe reactor accidents. The reactor was constructed to test fast reactor fuels but has also been used for light water reactor fuel testing as well as other exotic special purpose fuels (i.e. space reactors). Resumption efforts, which are ongoing, are scheduled to complete in 2018.
- ***Small Modular Reactors.*** Originally, NE competitively selected two recipients for cost shared agreements under the SMR Licensing and Technical Support Program: Babcock & Wilcox (B&W) mPower America and NuScale Power. NuScale is expected to submit their design certification application by the end of 2016. However, in February 2014, B&W Corporation announced a reduction in funding to the mPower project and after mPower failed to secure a financial investor, DOE ceased funding the Cooperative Agreement in

November 2014. In spring 2016, Bechtel Power reached a settlement agreement with BWXT (the follow-on organization to B&W mPower) to take over the project management of the mPower project and is actively seeking financial supporters.

- ***Stewardship of the Nuclear Infrastructure at the INL.*** When the INL was formed in 2005, research complexes at the site were transferred from other DOE elements to NE to reconstitute nuclear energy research capabilities. Many of these research facilities were not maintained as they were slated for disposition and disposal and key support infrastructure was already removed. Major investment strategies are underway at Advanced Test Reactor (ATR) and Materials and Fuels Complex (MFC) to refurbish and revitalize irradiation and post-irradiation capabilities to meet a growing need by the research communities. The ATR, built in 1961, is a major test reactor supporting NE and Naval Reactors missions to provide irradiation capabilities for fuels and materials. ATR recently employed a five-year strategy to address \$80 million in deferred maintenance by investing in high-priority repairs and refurbishments to ensure its availability to 2050. At the MFC, a similar strategy started in FY2016 to refurbish and modernize major hot cell facilities.

### **Critical Events and Action Items**

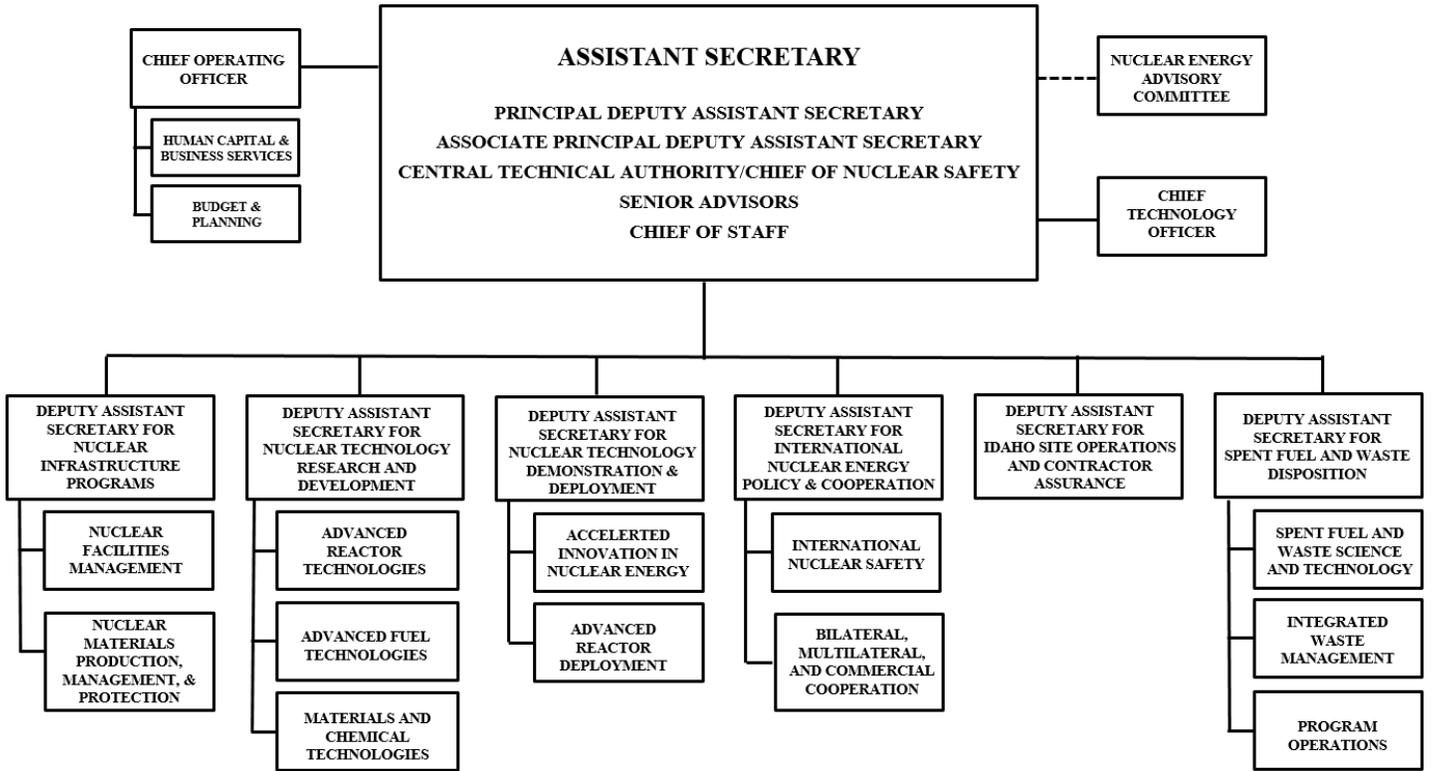
#### **3-month events**

- DOE awarded a contract to a Battelle Memorial Institute-led team (BMI) in January 2016 to drill a test borehole of over 16,000 feet into a crystalline basement rock formation near Rugby, North Dakota in Pierce County. None of these tests would involve the use of any radioactive waste. Due to local opposition, BMI's efforts in Pierce County failed. BMI relocated to Spink County, SD to attempt to find a suitable site, which also failed due to local opposition. In July 2016, the Department of Energy and BMI mutually agreed to walk away from the existing contract. In August 2016, the Department issued a new competitive solicitation with modified requirements, taking into account the lessons learned from our efforts in Pierce County, ND and Spink County, SD. The Department intends to award multiple contracts in January, 2017, with potential drilling beginning in the latter half of 2017.

#### **6-month events**

- NE has requested its advisory committee, NEAC, to complete a review of requirements and need for an advanced test reactor. The committee report is expected to be complete by March 1, 2017.
- In response to the growing support for the deployment of advanced reactor technologies, the Department will need to develop a comprehensive path forward to address deployment strategies, cost-share, and the need for and timing of an irradiation test reactor, as well as any potential international collaborations. This Roadmap will be completed in 2017 following the completion of the SEAB and NEAC studies.

# Organizational Chart



# Office of Science

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

### Organization Information

**Name:**

Office of Science (SC)

**Address:**

1000 Independence Avenue, SW  
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### Supporting the DOE Mission

Within the DOE, the Office of Science (SC) plays a unique and complementary role as a mission-driven science organization supporting discovery science in six science program areas, in addition to mission-relevant, use-inspired research necessary to advance DOE's missions in energy, environment, and national security.

SC is the largest Federal supporter of basic research in the physical sciences in the United States. SC funds programs in physics, chemistry, materials science, biology, environmental science, applied mathematics, and computer and computational sciences, and is the Federal steward for several disciplines within these fields such as high energy physics and nuclear physics; fusion sciences; high performance computing science and technology; and accelerator and detector science and technology. SC is also the largest Federal supporter of fundamental research relevant to future solutions for clean energy. The

scale and complexity of the SC research portfolio provide a competitive advantage to the nation as multidisciplinary teams of scientists, using some of the most advanced scientific instruments in the world, are able to respond quickly to national priorities and evolving opportunities at the frontiers of science.

The SC portfolio has two principal thrusts: direct support of scientific research, and direct support of the design, construction, and operation of unique, open-access scientific user facilities. SC supports over 22,000 researchers located at over 300 academic institutions and at all 17 of the DOE national laboratories. Over 31,000 researchers from universities, national laboratories, industry, and international partners are expected to use SC user facilities in FY 2016. In addition, SC is responsible for the stewardship of ten of the DOE national laboratories.

### **Mission Statement**

The SC mission is to deliver scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$5,067.7 million
FY 2016 Enacted Budget	\$5,347.0 million
FY 2017 Budget Request	\$5,672.1 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 908

### **History**

The SC origins trace to the Manhattan Project. By the close of World War II, it was evident that fundamental knowledge of atomic and nuclear physics had tipped the balance of world power. The Manhattan Project vividly demonstrated the importance of basic research and its linkages to some of the most urgent national priorities. Basic research programs in atomic, nuclear, and radiation physics, and in related disciplines of chemistry and applied mathematics, were foremost among those brought forward from the Manhattan Project.

The all-out effort to create the world's first nuclear weapon created a vast research and development apparatus—including large, multi-purpose facilities that became the nation's first national laboratories—under the control of the War Department's Army Corps of Engineers. In 1946, the Atomic Energy Act transferred responsibility for nuclear research and development from the War Department to a new independent civilian agency, the Atomic Energy Commission (AEC). The tools needed to carry out this mission were of a scale that required the federal government to construct and operate them. Throughout the 1940s and 1950s, the AEC created a network of national laboratories to host machines, such as particle accelerators and colliders and arrays of isotope-separating centrifuges, that became the foundation of this new nuclear science. Many of the Commission's activities were unprecedented and exploratory. The Commission's

charter directed it, in part, to ensure continuity of the ongoing activities and to carry out a diversified program of basic research.

Motivated by the Arab oil embargo, lawmakers terminated the AEC and placed its research functions under the newly created Energy Research and Development Administration (ERDA) in 1974. ERDA consolidated existing energy research activities across the AEC and other agencies; its basic research portfolio included nuclear, solar, fossil, and geothermal energy, as well as conservation, synthetic fuels, and power transmission. In 1977, the establishment of DOE gathered under one authority most of the federal government's energy-related research, policy, and regulatory activities (with the exception of regulation of the nuclear power industry). The Department of Energy Organization Act of 1977 specifically created the Office of Energy Research. In 1998, the Energy and Water Development Appropriations Act changed the name of the Office of Energy Research to the Office of Science (SC). Today, SC continues its longstanding leadership of fundamental scientific research for energy and is the largest U.S. Federal sponsor of basic research in the physical sciences.

### **Functions**

SC accomplishes its mission and advances national goals by supporting: 1) research at the frontiers of science—discovering nature's mysteries, from the study of subatomic particles, atoms, and molecules that are the building blocks of the materials of our everyday world, to the DNA, proteins, and cells that are the building blocks of entire biological systems; 2) science for energy and the environment—advancing a clean energy agenda through fundamental research on energy production, conversion, storage, transmission, and use, and through advancing our understanding of the earth and its climate; and 3) the 21<sup>st</sup> century tools of science—providing the Nation's researchers with state-of-the-art scientific user facilities considered the most advanced tools of modern science.

SC also has stewardship and primary oversight responsibility for the majority of DOE's national laboratories, stewarding 10 of 17 laboratories, including: Ames Laboratory (Ames), Argonne National Laboratory (ANL), Brookhaven National Laboratory (BNL), Fermi National Accelerator Laboratory (FNAL), Lawrence Berkeley National Laboratory (LBNL), Oak Ridge National Laboratory (ORNL), Pacific Northwest National Laboratory (PNNL), Princeton Plasma Physics Laboratory (PPPL), SLAC National Accelerator Laboratory (SLAC), and Thomas Jefferson National Accelerator Laboratory (TJNAF).

- ***Office of Science Research.*** SC manages a fundamental research portfolio through six core program offices: Advanced Scientific Computing Research; Basic Energy Sciences; Biological and Environmental Research; Fusion Energy Sciences; High Energy Physics; and Nuclear Physics. The six SC research program offices are responsible for scientific program planning, including engaging the S&T communities; program budget planning; program execution; and management across the relevant scientific disciplines. The research program offices are also responsible for the selection and evaluation of their research and project portfolios that collectively make up the approximately \$5 billion in annual funding that is awarded as grants or cooperative agreements to universities and colleges, or as funding to the 17 DOE national laboratories operated under the Management and Operating (M&O) contracts.

- *Advanced Scientific Computing Research (ASCR)*. ASCR supports research to discover, develop, and deploy computational and networking capabilities to analyze, model, simulate, and predict complex phenomena important to the United States. ASCR applied mathematics and computer science research as well as research on the linked challenges of capable exascale and data-intensive science, and computational partnerships under the Scientific Discovery through Advanced Computing (SciDAC) program, support the computational needs to advance basic science and clean energy. ASCR also supports 4 scientific user facilities: the National Energy Research Scientific Computing Center (NERSC) and the Energy Sciences Network (ESnet); the Oak Ridge Leadership Computing Facility (OLCF) at ORNL; and the Argonne Leadership Computing Facility at ANL.
- *Basic Energy Sciences (BES)*. BES 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. BES supports a large portfolio of core research in chemical sciences, geosciences, biosciences, and materials sciences and engineering, as well as the Energy Frontier Research Centers (EFRCs) in key areas related to Departmental priorities, such as the Subsurface Technology and Engineering RD&D and the Advanced Materials crosscutting initiatives. BES supports the Fuels from Sunlight and the Batteries and Energy Storage DOE Energy Innovation Hubs. BES also provides for the operations of five x-ray light source facilities, five nanoscale research centers, and two neutron scattering facilities, and is currently supporting the upgrades to two of the x-ray light sources facilities, the Linac Coherent Light Source-II (LCLS-II), and Advanced Photon Source (APS) Upgrade to advance research capabilities to maintain U.S. competitiveness in this area.
- *Biological and Environmental Research (BER)*. BER supports fundamental research and scientific user facilities to achieve a predictive understanding of complex biological, climatic, and environmental systems for a secure and sustainable energy future. BER supports core research in genomic science and the three DOE Bioenergy Research Centers (BRC), and supports research to understand microbiome interactions in diverse environments. BER also supports core research to understand climate-relevant atmospheric and ecosystem processes, field research and modeling to understand the dynamic physical, biogeochemical, microbial, and plant processes interactions, including those processes involved in the energy-water nexus. BER supports the operations of three scientific user facilities: the DOE Joint Genome Institute (JGI), the Environmental Molecular Sciences Laboratory (EMSL), and the Atmospheric Radiation Measurement Climate Research Facility (ARM).
- *Fusion Energy Sciences (FES)*. FES supports research to expand the fundamental understanding of matter at very high temperatures and densities, and to build the scientific foundation for fusion energy. FES supports continued progress on the U.S. Contributions to ITER Project and core research in general plasma science and experimental and theory research on the fundamental science of magnetic confinement. FES also supports the operation of the DIII-D tokamak operated by General Atomics in San Diego, CA, and National Spherical Torus Experiment Upgrade (NSTX-U) at PPPL.
- *High Energy Physics (HEP)*. HEP 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. HEP's portfolio of fundamental research and enabling facilities spans the three "frontiers" of particle physics: the Energy Frontier, the Intensity Frontier, and the Cosmic Frontier. HEP supports major facilities and experiments such as the Tevatron Accelerator Complex and upgraded Neutrinos at the Main Injector (NuMI) beamline of NuMI Off-axis  $\nu_e$  Appearance (NOvA) Experiment and the Facility for Advanced Accelerator Experimental Tests. It's also supporting the design and construction of the Muon to Electron Conversion Experiment (Mu2e); the Long Baseline Neutrino Facility (LBNF)/Deep Underground Neutrino Experiment (DUNE) project; next-generation dark-energy and dark-matter experiments; and the Major Items of Equipment for the Large Hadron Collider (LHC) upgrades of the ATLAS (A Large Toroidal LHC Apparatus) and Compact Muon Solenoid (CMS) detectors at CERN in Geneva Switzerland. HEP is also the steward for accelerator R&D for DOE and the nation, collaborating with BES, NP, as well as interagency partners.

- *Nuclear Physics (NP)*. NP supports experimental and theoretical research to discover, explore, and understand all forms of nuclear matter. NP provides for core research at universities and DOE national laboratories to support high priority research of the nuclear physics community, as well as the development of cutting-edge approaches for producing isotopes critical to the nation. NP supports operations of three scientific user facilities: the Relativistic Heavy Ion Collider (RHIC) for explorations of spin physics and intriguing new phenomena observed in quark gluon plasma formation; the Argonne Tandem Linac Accelerator System (ATLAS) utilizing newly completed instrumentation; and the Continuous Electron Beam Accelerator Facility (CEBAF), which is completing its 12 GeV Upgrade. NP is also supporting the construction of the Facility for Rare Isotope Beams (FRIB), which will provide world-leading capabilities for nuclear structure and astrophysics research.
- ***Additional Programs and Activities***. SC also manages and supports the following additional programs and activities: the Workforce Development for Teachers and Scientists program, the DOE Small Business Innovation Research Small Business Technology Transfer programs, Science Laboratories Infrastructure, and Safeguards and Security.
  - *Workforce Development for Teachers and Scientists (WDTS)*. The WDTS program mission is to help ensure that DOE has a sustained pipeline of science, technology, engineering, and mathematics (STEM) workers to carry out its mission, whether at DOE laboratories, academia, or federal program offices. This is accomplished through support of undergraduate student internships, graduate student thesis research, and visiting faculty research opportunities at the DOE laboratories. WDTS is also responsible for annual, nationwide, middle- and high-school science competitions culminating in the National Science Bowl® in Washington, D.C.
  - *Small Business Innovation Research (SBIR) Program/ Small Business Technology Transfer (STTR) Programs*. The Federal agencies with annual R&D appropriations greater than \$100 million for extramural work are required by statute to operate a SBIR Program and STTR Program to support innovative research and technology development performed by small businesses. SC manages the DOE SBIR/STTR Programs on behalf of the Department, with the exception of ARPA-e, in close coordination with all of the

contributing six SC research program offices and the DOE applied technology offices – the Offices of Fossil Energy (FE); Energy Efficiency and Renewable Energy (EERE); Nuclear Energy (NE); Environmental Management (EM); Defense Nuclear Nonproliferation (DPP); and Electricity Delivery and Energy Reliability (ED). The 12 participating programs are responsible for topic selection, reviewer assignment, award selection, and project oversight. The SBIR/STTR Programs Office is responsible for issuing topics and solicitations, managing the review and selection process, working with the SC Integrated Service Center to award SBIR/STTR Phase I and Phase II grants, issuing annual reports to the U.S. Small Business Administration, performing outreach, and setting overall policy for the Department’s SBIR and STTR Programs.

- *Science Laboratories Infrastructure (SLI)*. The SC SLI supports scientific and technological innovation at the SC-stewarded DOE laboratories by funding and sustaining mission-ready infrastructure, and fostering safe and environmentally responsible operations. The program provides state-of-the-art facilities and infrastructure that are flexible, reliable, and sustainable in support of scientific discovery. SLI supports ongoing projects that will provide new laboratory buildings, renovated facilities, and upgraded utilities. While significant improvements to SC laboratory infrastructure have been made, it is important to maintain a strong level of investment and continue making improvements across the SC national laboratory complex. SC, through SLI, participates in the DOE-wide infrastructure crosscut, which is part of DOE’s strategy for addressing critical infrastructure needs across the DOE laboratory complex.
- *Safeguards and Security (S&S)*. The SC S&S program is designed to ensure appropriate security measures are in place to support the SC mission requirement of open scientific research, and to protect critical assets within SC laboratories. This is accomplished by providing physical controls that will mitigate possible risks to the laboratories’ employees; nuclear and special materials; classified and sensitive information; and facilities. The SC S&S program also provides funding for cybersecurity for the laboratories’ information technology systems to protect electronic data while enabling the SC mission.
- **Program Planning**. Successful management of SC’s large and complex scientific research portfolios and facilities is a result of the implementation of best practices in program planning, and program and project management. These practices include: (1) employing the best experts—program managers, project directors, contracting officers and other specialists who are experts in their respective fields; (2) conducting multiyear program planning and budgeting; (3) engaging with the broader S&T communities from universities, national laboratories, and industry in both planning and evaluation processes, including through dedicated Federal Advisory Committees; (4) openly competing research activities and projects to encourage the most capable performers to apply; (5) using external merit-based peer review both to inform selection decisions and to assess ongoing research and project performance; and (6) engaging awardees and contractors collectively on a regular basis to encourage exchange of results and ideas.

SC’s engagement with the broader S&T communities and stakeholders to obtain input in planning efforts is extensive and is accomplished through a number of different processes and mechanisms, including:

- SC-led scientific and technical workshops;
- Reviews and studies by the SC Federal Advisory Committees;
- External studies by organizations such as the National Academies;
- Interagency Committees and Working Groups;
- Requests for Information (RFIs) posted in the Federal Register; and
- SC program manager participation at national meetings and conferences.

SC has established a Federal Advisory Committee for each of the six SC research programs offices, which are governed by the Federal Advisory Committee Act (FACA) of 1972 (Public Law 92-463) and all applicable FACA amendments, federal regulations, and executive orders. The committees include experts from universities, national laboratories, and industries and provide valuable, independent advice to SC upper management regarding the scientific and technical issues that arise in the planning, management, and implementation of the research programs.

- ***Program Management and Evaluation.*** Merit-based peer review provides the foundation for which SC selects and evaluates the quality and impact of the research and scientific facilities that it supports. SC's sponsored activities, whether at universities, national laboratories, or private sector organizations, are evaluated at multiple stages. Proposals solicited and received by SC are peer reviewed and the results of peer review inform selection decisions for funding. SC engages active researchers from academia, national labs, and/or the private sector to serve as reviewers who participate as volunteers. SC's merit review system is defined by 10 CFR 605. While 10 CFR 605 governs financial assistance (grants and cooperative agreements), SC applies its principles to national laboratory reviews as well. SC evaluates ongoing basic research activities and facility operations using merit-based peer review; the extent to which this is done may vary depending on the size of the award or project. For large and/or multi-institutional research activities and on-going DOE laboratory research activities and research facility operations, external peer reviews are periodically conducted to assess management and/or scientific progress.

Construction projects and Major Items of Equipment (MIE) are governed by the requirements of DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. SC, through the SC Office of Project Assessment, in collaboration with the sponsoring SC program office, conducts regular project reviews to help ensure projects remain on schedule and within budget. These reviews have been an integral part of SC's success in maintaining cost and schedule baselines of its large, complex construction and MIE projects.

Lastly, through the use of its Federal Advisory Committees, SC evaluates its own business practices in order to maintain high standards for program and project management, and obtain external advice for continuous improvement. SC charges each of its six Federal Advisory Committees on a periodic basis to establish a Committee of Visitors (COV) to assess the efficacy and quality of the processes used by the respective program office to solicit, review, recommend, monitor, and document funding actions and to assess the quality of the resulting portfolio and make recommendations.

- ***Laboratory Stewardship (Planning and Evaluation).*** SC conducts a formal laboratory strategic planning process annually whereby each of its ten national laboratories prepare written strategic ten-year plans that form the basis for detailed discussions during in-person

meetings at DOE HQ between laboratory leadership and SC leadership on the laboratories' future directions, immediate and long-range challenges, and resource needs. SC's annual laboratory planning (ALP) process has been recognized as a best practice in the Department. In FY 2016, through the coordination of the Office of the Under Secretary for Science and Energy, SC's ALP process was updated and expanded to be adopted by the three applied energy technology program offices (EERE, NE, and FE) who steward national laboratories.

Each year, SC conducts an evaluation of the scientific, technological, managerial, and operational performance of the M&O contractors of its ten national laboratories. The evaluations provide the basis for determining annual performance fees and the possibility of winning additional years on the M&O contract through an "Award Term" extension. The evaluations also serve to inform the decisions the Department makes regarding whether to extend or to compete the M&O contracts. The current SC laboratory appraisal process has been in place since FY 2006. The appraisal process improves the transparency of evaluations, raises the level of involvement by the SC leadership, increases consistency in the way the laboratories are evaluated, and more effectively incentivizes contractor performance by tying performance to fee earned, contract length, and the public release of grades.

### **Recent Organization Accomplishments**

SC's recent significant organization accomplishments include:

- ***Scientific Discoveries and Findings.*** SC manages a research portfolio of over 3,000 active research awards. The primary accomplishments from SC-funded research and facilities are the resulting scientific discoveries and findings, which are predominately captured in the archival, peer-reviewed scientific literature. Recent scientific discoveries and accomplishments are on the SC webpage: <http://science.energy.gov/news/highlights/>
- ***Delivery of New Scientific User Facilities.*** SC supports the design, construction, and operation of unique open access scientific user facilities that offer the scientific community and industry unmatched capabilities. SC currently operates over 25 such facilities, including particle and nuclear physics accelerators and colliders; light sources and neutron scattering facilities; some of the fastest high-performance computers in the world for open science; nanoscale research centers; and observational capabilities for environmental and atmospheric modeling. In 2015, SC completed the construction and commissioning of the National Synchrotron Light Source II (NSLS II) at BNL on time and within budget. NSLS II is a state-of-the-art synchrotron light source that allows for scientists to probe the fundamental properties of matter and materials, paving the way to new scientific discoveries and innovations.
- ***Capital Asset Project Performance.*** SC continues to lead DOE in project performance for capital asset projects, as measured by the Government Accountability Office's (GAO) project success metrics, which were initiated in FY 2008. SC has delivered 100% of its projects within 110% of their original approved cost baselines. In FY 2016, SC has 30 active, capital asset projects (post Critical Decision-0), with Total Project Costs greater than \$10 million. The NSLS-II Project Team was awarded the 2015 Secretary of Energy's Achievement Award, and the Federal Project Director of the Year award was given to the FPD.
- ***Research and Development Awards.*** In 2015, 33 of the 100 annual awards given out by R&D Magazine were won by researchers at DOE national Laboratories. The R&D 100

awards, sometimes called the “Oscars of Innovation,” are given annually in recognition of exceptional new products or processes that were developed and introduced into the marketplace during the previous year. Twenty-one of those 33 DOE researchers were at SC national laboratories.

### **Leadership Challenges**

SC’s leadership challenges include:

- ***ITER.*** ITER (Latin for “the way”) is an international research and development (R&D) project for the construction and operation of a large-scale international fusion energy research facility near Cadarache, France, with the goal of demonstrating the technical viability of magnetic-confined fusion energy. The seven members that signed the 2007 ITER agreement are the European Union, United States, China, India, Russia, Japan, and Korea. The project is now estimated to achieve “first plasma” in 2025. Since the agreement, the costs of the project have risen substantially from a range of \$1.45 to \$2.2B in costs for the U.S. to a current range of \$4 to \$6.5B, and the planned first plasma date has slipped from 2019 to no earlier than 2025. In May of 2016, in response to language in the FY 2016 Consolidated Appropriations Act, DOE Secretary Moniz recommended in a report to Congress that U.S. remain a Member of ITER through FY 2018, and committed DOE to reassess progress and provide a second recommendation in December 2017 regarding continued U.S. participation. The report to Congress also pledged to baseline the U.S. ITER Project in-kind contributions in FY 2017. (See separate transition paper on ITER.)
- ***Exascale.*** It is critical to National security and economic competitiveness to maintain the DOE’s Exascale Computing Initiative (ECI). In 2016, DOE initiated research and development activities to deliver an exascale ( $10^{18}$  operations per second) computing capability by the mid-2020s. This activity, referred to as the ECI, is a partnership between the DOE Office of Science (SC) and the DOE National Nuclear Security Administration (NNSA) that addresses DOE’s science and national security mission requirements. Currently, within SC and NNSA, the total leadership computing capability (combined capability of existing DOE high-performance computers) is about 50 petaflops. Upgrades underway and further supported by the FY 2017 budget request will increase DOE’s aggregate capability to approximately 500 petaflops by 2018. Recent and ongoing analyses of computing requirements across SC and NNSA establish an aggregate mission need of 2-10 exaflops of capacity by the mid-2020s. There are significant challenges associated with achieving this level of capacity due to the physical limits of existing computing technology and concomitant limitations in software design. Naive scaling of current high performance computing technologies would result in systems that are untenable in their energy consumption, data storage requirements, complexity to program effectively, and other factors. Unlike previous upgrades to DOE’s Leadership Computing Facilities, an exascale system capable of meeting critical national needs cannot be developed through incremental improvement of existing systems.

Over the past six decades, U.S. computing capabilities have been maintained through continuous research and the development and deployment of new computing systems with rapidly increasing performance on applications of major significance to government, industry, and academia. Maximizing the benefits of High Performance Computing (HPC) in the coming decades will require an effective national response to increasing demands for

computing power, emerging technological challenges and opportunities, and growing economic dependency on and competition with other nations. Early this summer, China eclipsed the U.S. in scientific supercomputing. This is the first time that the U.S. has not dominated high performance computing since the beginning of the computer era. On June 20, 2016, China unveiled its newest supercomputer, the 125 petaflop Sunway TaihuLight taking the #1 position in the TOP500 ranking, displacing to #2 its Tianhe-2, which had occupied #1 since June 3013. More importantly, China overtook the U.S. with the total number of machines on the list and is likely to win the prestigious Gordon Bell Prize in November, based on scientific applications run on the Sunway TaihuLight. By all significant measures – top ranked, total number of supercomputers in the TOP500, and aggregate total computing power, software capable of sustained performance – China now dominates the U.S. in supercomputing. To counter this, SC is developing a plan to accelerate the development and deployment of exascale systems and a suite of scientific applications that effectively converge this capability with recent advances in large-data analytics and computer-assisted learning. (See separate transition paper on Exascale.)

### **Critical Events and Action Items**

#### **3-month events**

- **ITER:** A DOE approval decision at the level of the DOE Deputy Secretary will need be made regarding the US ITER First Plasma Subproject Baseline (Critical Decision – 2) by January 2017. An SC office of Project Assessment review will be part of the baseline process.
- **Exascale.** Pursuant to DOE Order 413.3B, the next phase of this effort will require the DOE Deputy Secretary, as the Acquisition Executive, to approve the Alternatives Analysis (Critical Decision 1) by the end of 2016.

#### **6-month events**

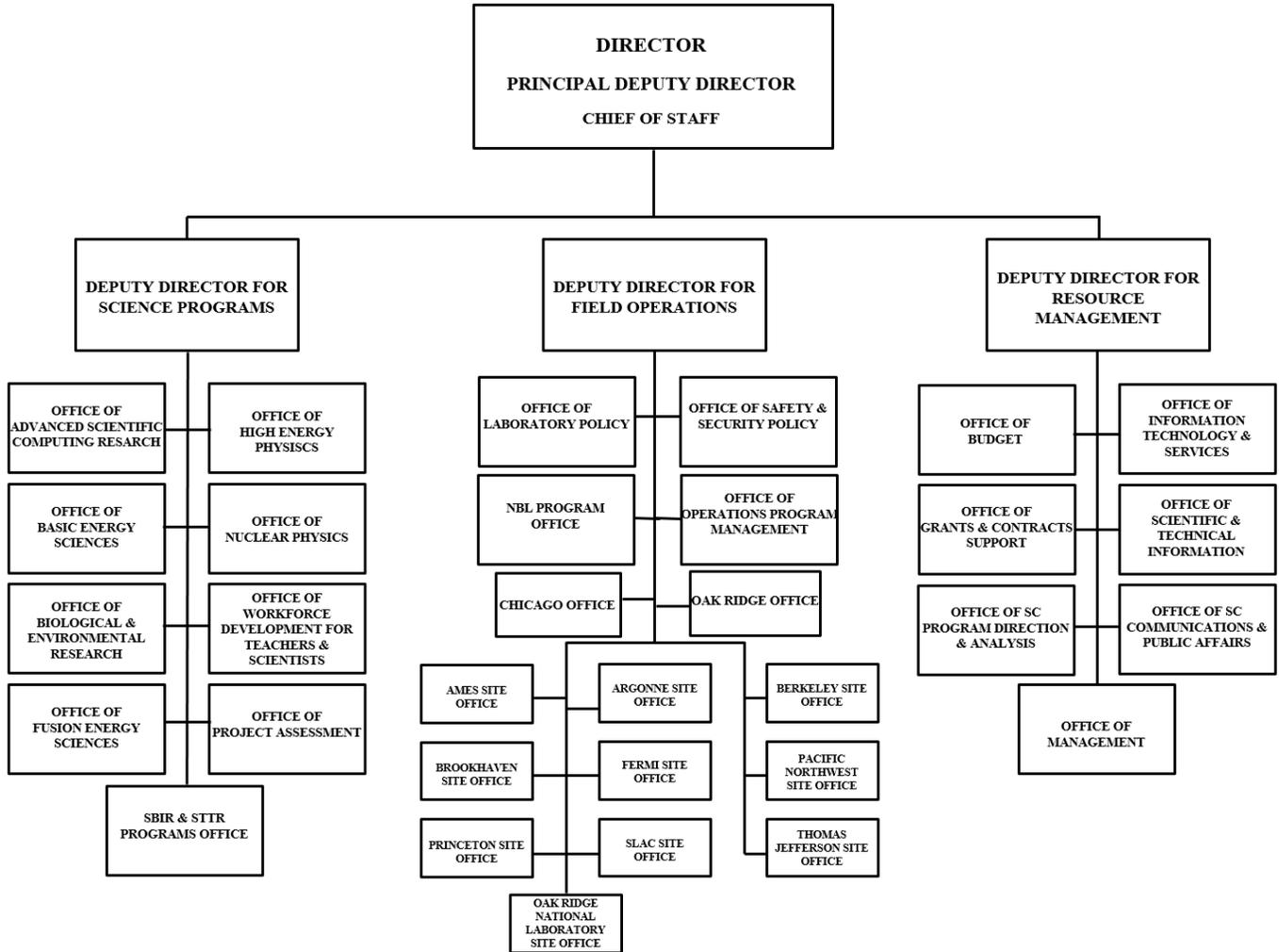
- **ITER:** In Spring 2017, a proposed Ministerial-level ITER Council Meeting will take place to secure the support of the ITER Member countries of ITER Organization (IO) project baseline.

#### **12-month events**

- **ITER:** In December 2017 to early 2018, DOE will reassess its recommendation to Congress that the U.S. remain in ITER based on project progress.

**Organizational Chart**

**OFFICE OF SCIENCE**



# Office of Technology Transitions

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN 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.

**Strategic 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.

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

### Organization Information

**Name:**

Office of Technology Transitions (TT)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-2000

**Website:**

<http://energy.gov/technologytransitions/office-technology-transitions>

**Point-of-Contact E-mail Address:**

[Rochelle.Blaustein@hq.doe.gov](mailto:Rochelle.Blaustein@hq.doe.gov)

### **Supporting the DOE Mission**

Technology transfer is a component of DOE's overall mission to promote scientific and technological innovation that advances the economic, energy, and national security interests of the country. To accomplish this, the Office of Technology Transitions (TT) develops and implements statutory responsibilities of the Department on technology transfer; oversees and coordinates technology transitions involving Departmental programs; works with corporate staff offices to ensure that best practices in technology transitions are identified and implemented; and facilitates the exchange of information on innovative technology and commercialization practices among the Department's program offices and national labs.

## **Mission Statement**

Expand the commercial impact of DOE’s portfolio of research, development, demonstration, and deployment (RDD&D) activities.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2017 Budget Request	\$8.4 million

**NOTE:** Starting in FY 2015, throughout FY 2016, and during the FY17 Continuing Resolution, funding to start up and operate OTT (Salaries and Benefits, Travel, Technology Transition Activities, Support Services, and Other Related Expenses) to execute its mission of technology transitions is provided via an assessment within science and the applied energy programs, including ARPA-E.

## **Human Resources**

FY 2016 Full Time Equivalents (FTEs): 18.

## **History**

The DOE has had technology transfer related functions and personnel periodically over the last 30 years, and has been authorized to conduct technology transfer activities since the passage of Stevenson-Wydler Technology Innovation Act of 1980. However, it wasn’t until The Energy Policy Act of 2005 (EPAAct 2005) that a DOE technology transfer function was officially established within the Department. Title X, Section 1001(a-c) of EPAAct 2005 instructs the Secretary of Energy to appoint a Technology Transfer Coordinator (TTC) to serve as the “principal advisor to the Secretary on all matters relating to technology transfer and commercialization.”

Since passage of EPAAct 2005, DOE had been under scrutiny by Congress and external stakeholders for its technology transfer related work. Letters from members of Congress on the implementation of the Technology Commercialization Fund and a 2014 Inspector General report on the implementation of the technology transfer provisions for EPAAct 2005 made the case for a centralized technology transfer office.

In February 2015, the Secretary of Energy created the Office of Technology Transitions (TT), and recast the Technology Transfer Coordinator as the Director of TT in order to coordinate and optimize how the Department transitions early-stage R&D to applied energy technologies through technology transfer, commercialization, and deployment activities. TT reports to the Office of the Under Secretary for Science and Energy, and is responsible for developing the Department’s strategic policy and vision for expanding the commercial impact of DOE’s RDD&D portfolio. The Director of TT also reports to the Secretary as the statutory language of the Technology Transfer Coordinator requires.

TT is also responsible for the statutorily-created Energy Technology Commercialization Fund (TCF), a nearly \$20 million fund that leverages the R&D funding in the applied energy programs to pursue high impact commercialization activities. TT implemented the first forward-looking TCF since established by law in 2005, and made the first round of awards in June 2016. The TCF focuses on commercializing promising energy technologies from any of the 17 National

Laboratories and is funded by applying the statutorily directed 0.9% assessment against the applied research and development budget for the Applied Energy Program Offices – Energy Efficiency and Renewable Energy (EE), Fossil Energy (FE), Nuclear Energy (NE), Electricity Delivery and Energy Reliability (OE) and Advanced Research Projects Agency-Energy (ARPA-E); however, only EE, FE, NE, and OE are required to pay into the TCF.

In addition, the White House launched the Clean Energy Investment Initiative in February 2015 to catalyze expanded private sector investment in climate change solutions, including innovative technologies with breakthrough potential to reduce carbon pollution. To support this initiative, the Department of Energy committed to establishing the DOE Clean Energy Investment Center (CEIC), within the Office of Technology Transitions. In January 2016, DOE launched the CEIC to catalyze private, mission-oriented investment in energy technologies and to address the significant gap in U.S. clean technology investment. CEIC focuses on closing the gap between investors and early-stage energy technologies that has historically been dominated by poor performance from venture capitalists who had high expectations for energy investments, but little knowledge of the actual industry. CEIC provides a single point of access for investors looking to fund clean energy technologies; technical assistance; information on early-stage projects and companies; and connections to additional relevant U.S. government programs.

### **Functions**

- ***Technology Commercialization Fund (TCF)***. A part of the core TT function to oversee the expenditure of DOE technology transfer funds, the TCF is a nearly \$20 million funding opportunity that leverages the R&D funding from the applied energy programs to mature promising energy technologies with the potential for high impact. These funds are matched with funds from private partners to promote promising energy technologies from the national laboratories for commercial purposes.
- ***Clean Energy Investment Center***. The TT Clean Energy Investment Center advances private, mission-oriented investment in clean energy technologies that address the present gap in U.S. clean tech investment and enhances the availability of the Department’s resources to investors and the public. The Center is launching the following activities in 2017:
  - **Lab Partnering Service (LPS)** - Serves as a one-stop tool to spur partnerships between the National Labs and investors by providing investors, and the public, a single point of access to subject matter experts and the latest reports and data on clean energy technology.
  - **Technical Assistance** - The Center will share research and analysis produced by DOE and its 17 national laboratories on relevant developments in clean energy technology.
  - **Project Data Access** - A library of information on individual projects that will increase awareness of and access to the DOE portfolio of investable clean energy opportunities. The Center aggregates and makes available public information on entities currently engaged in partnerships with DOE.
- 
- ***Data Collection and Analysis***. Data collection and analysis is another TT core function. Every year, TT tracks more than 70 technology transfer-related metrics from across all of

DOE's laboratories, sites, and facilities to create statutorily-mandated reports to Congress – the “Technology Transitions Execution Plan” and the “Report on Technology Transfer and Related Technology Partnering Activities at the National Laboratories and Other Facilities.” Some of the data tracked includes the number of Cooperative Research and Development Agreements, and new inventions, patent applications, invention licenses, copyright licenses, and royalty income earned. Data collection and analysis activities help establish clear goals and objectives for the national laboratories, other partners, and the Department by facilitating the evaluation of best practices and effective metrics.

- ***Evidence-Based Evaluations.*** TT also conducts evidence-based evaluations to assess how DOE's long-term investments in science and technology have grown into critical technologies that support the economic, energy, environment, and national security missions of the Department. TT analyzes and evaluates programs and collects metrics for technology transitions across the Department. Evaluation metrics, outputs and outcomes, and other information from national laboratories and DOE grantees are analyzed to understand the Department's impact on the commercial sector. Studies are conducted on the programs and activities, such as the Agreements for Commercializing Technology pilot, to inform DOE decision-making and policy-setting. Additionally, in-depth case studies are conducted on specific technology areas to be used to evaluate the impact of DOE's research, development, demonstration, and deployment portfolio.
- ***Strategic Programs and Policy Development.*** TT engages with DOE laboratories, site offices, program offices, and stakeholders to promote rapid technology transfer to U.S. commercial sectors. TT collaborates with numerous internal and external audiences to achieve its mission of expanding the commercial impact of DOE's research and development portfolio.

Internally, TT works with employees at DOE's national labs, site offices, and program offices to develop policies that address those areas and advance the Department's technology transfer mission. The statutorily-created Technology Transfer Working Group is one of the important groups that TT oversees, and assists the office and provides a valuable forum of experienced tech transfer professionals that exchange information about best practices and areas for improvement. TT works with the Technology Transfer Policy Board, which includes representation from DOE's program offices that fund and oversee the important research; the National Laboratory Tech Transfer Working Group; and the Laboratory Policy Council for insight and perspective about the key issues and priorities at the national laboratories.

Externally, TT conducts stakeholder roundtables, workshops, and other meetings in Washington, DC, as well as across the country. Communication and relationships with universities, investors, and companies is crucial to TT's mission. The office works to engage the private sector more by developing programs and activities that can help break down barriers surrounding DOE's labs and resources. Additionally, TT encourages regional economic development by holding workshops, and engaging and connecting laboratory leaders to state and regional organizations.

### **Recent Organization Accomplishments**

TT's recent significant organization accomplishments include:

- ***Clean Energy Investment Center Launch.*** Established the Clean Energy Investment Center and in 2016 conducted robust investor-engagement including over 100 meetings with investors, three Laboratory Investor Knowledge Series (LINKS) events, and five Innovation Interfaces with private companies.
- ***Technology Commercialization Fund Administration.*** Administered the Department's first forward-looking Technology Commercialization Fund in FY 2016. 54 out of the 104 project proposals were selected totaling \$16.1M in federal funding. Of the 12 Labs that submitted proposals, all received at least one award. The total matching funds from private sources contributed was \$17.1M from 58 individual private partners.
- ***Technology Transfer Execution Plan.*** Completed and released the first DOE Technology Transfer Execution Plan in October 2016. The Plan is an annual requirement of EPAct 2005 that DOE has not met until now. It is designed to guide and strengthen the Department's technology transfer efforts and reinforce the importance of supporting these activities occurring across DOE's laboratories, facilities and programs.
- ***Established the TT Office.*** Established TT as an independent DOE office, including hiring 11 FTEs and 1 Oak Ridge Institute for Science and Education (ORISE) Fellow, and developing and submitting an FY 2017 budget request.

### **Leadership Challenges**

TT's leadership challenges include:

- ***Defining Technology Transitions.*** TT has a broad mission that encompasses the traditional activities of technology transfer. However, fulfilling TT's mission and succeeding in bridging the gaps between early-stage R&D and commercialization activities requires looking beyond traditional technology transfer, and includes identifying strategic investments, and leveraging and managing commercialization initiatives.
- ***Resource Constraints.*** As a new office with a broad mission, TT has drawn a lot of attention for its innovative thinking and ability to implement projects. However, TT is unable to fully develop and implement several projects due to limited personnel and financial resource constraints.

### **Critical Events and Action Items**

#### **3-month events**

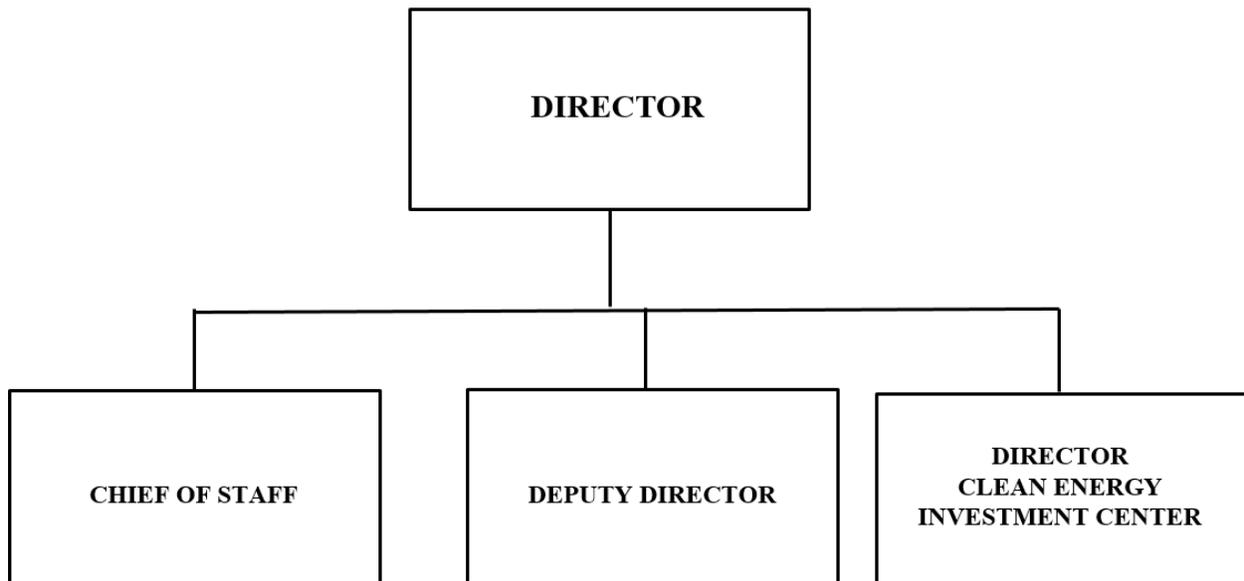
- Administer the Energy TCF for applied RD&D for high-impact commercial applications and release laboratory solicitations for the FY17 Technology Commercialization Fund.
- Award and launch a third-party longitudinal evaluation of the TCF.
- Develop and launch the first round of the Lab Awards program.
- Launch and announce new effort to align resources for prizes and challenges.
- Compile and release the DOE FY16 technology transfer data to the National Institute of Standards & Technology (NIST).

#### **6-month events**

- Conduct a Clean Energy Investment Center Summit.
- Develop a 5-year strategic plan for DOE's prizes and challenges.
- Select and award first round of FY17 TCF projects.

**Organizational Chart**

# OFFICE OF TECHNOLOGY TRANSITIONS



# Office of the Under Secretary for Management and Performance

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

**Name:** Office of the Under Secretary for Management and Performance

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### **Supporting the DOE Mission**

The Office of the Under Secretary for Management and Performance supports Goal 3 of the DOE's Strategic Plan as the Department's primary management organization, coordinating project management and the mission support functions of the Department, and overseeing the cleanup of the legacy waste of the Cold War. The Under Secretary leads and manages nine organizations with responsibility for achieving these goals with a combined \$6.7 billion enacted budget in FY 2016. These organizations include: the Offices of Environmental Management (EM), Legacy Management (LM), Environment, Health, Safety, and Security (EHSS), Chief Information Officer (CIO), Project Management Oversight and Assessments (PM), Chief Human Capital Officer (HC), Management (MA), Economic Impact and Diversity (ED), and Hearings and Appeals (OHA).

The Office of the Under Secretary institutes enterprise-wide solutions to common challenges faced by program offices across

the complex, such as information management, acquisition, and human resources. The Under Secretary also serves as the Department's Chief Acquisition Officer, Chief Sustainability Officer, Chair of the DOE Operations Committee, Co-Chair of the Executive Management Committee for the Manhattan Project National Historical Park, Chair of the Laboratory Operations Board, and in several Chief Operating Officer functions.

### **History**

Until 2013, the majority of the offices under the oversight of the Under Secretary for Management and Performance reported to the Office of the Secretary. The Offices of Environmental Management and Legacy Management reported to a different Under Secretary. In 2013, the Secretary implemented several organizational changes, including realignment of these programs into their current configuration and re-naming the Under Secretary offices. The Under Secretary for Science was re-named the Under Secretary for Science and Energy, while the Under Secretary was re-named the Under Secretary for Management and Performance and established as the primary management and operating office of the Department.<sup>1</sup> The Under Secretary offices were reorganized to consolidate mission support functions and to clarify and strengthen the lines of authority and accountability for these functions. The Under Secretary for Management and Performance oversees the Department's cleanup mission with the Offices of Environmental Management and Legacy Management, resolves project management challenges, and coordinates department-wide initiatives. The Under Secretary manages improvements to infrastructure across the Department and changes to the Department's Directives and Orders.

The Chief Human Capital Officer, the Chief Information Officer, and the Director of the Office of Civil Rights continue to have direct access to the Office of the Secretary in order to provide broad policy advice and other functions, as specified by statute or regulation. Day-to-day operations for these offices are under the oversight of the Under Secretary.

### **Program Highlights**

As a result of the improved alignment and coordination among the Management and Performance program offices—as well as to more strategically engage the National Laboratory enterprise—the Under Secretary has initiated a number of key activities and processes, including:

- DOE Operations Committee – established to assure coordination of Department-wide management initiatives by convening senior-level representatives to resolve issues and provide operational leadership.
- Laboratory Operations Board – provides advice and analysis on laboratory management, operations, and administration, strengthening the relationship between headquarters and the national laboratories.
- Internal Evaluations – conducts performance evaluation studies of selected Departmental programs and operations to document impacts and benefits, and develop recommendations for improvement.

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<sup>1</sup> Pursuant to the Government Performance and Results Modernization Act of 2010, the Deputy Secretary continues to serve as the Chief Operating Officer, and pursuant to the National Nuclear Security Administration Act signs all Directives and Orders that apply Department-wide.

- Manhattan Project National Historical Park – collaborated with the National Park Service to establish a jointly-run National Historical Park encompassing three Manhattan Project sites, overseen by a Joint Project Management Team and Executive Management Committee.

### **DOE Operations Committee**

The DOE Operations Committee was established by Secretary Moniz and Deputy Secretary Sherwood-Randall in 2016 to assure coordination of Department-wide management initiatives at the Deputy Under Secretary level; resolve issues in executive correspondence, Departmental directives and other cross-departmental materials; and provide operational guidance and direction on other matters as assigned or otherwise required. The Under Secretary (or, if none is confirmed, the Deputy Under Secretary for Management and Performance) chairs the Operations Committee, and its membership includes the Deputy Under Secretary for Science and Energy, the Principal Deputy Administrator for NNSA, the Chief Financial Officer, and Chief of Staff representatives from the Office of the Secretary.

The Chair of the DOE Operations Committee works closely with the Deputy Secretary in the Deputy Secretary's capacity as the Chief Operating Officer of the Department. The Office of the Under Secretary for Management and Performance has primary responsibility for issuing reports and other documents related to the operations and management of the Department, unless statutory or other key considerations require those documents to be signed by the Secretary or Deputy Secretary.

### **Laboratory Operations Board**

The Laboratory Operations Board (LOB) was chartered in October 2013 with a charge "to strengthen and enhance the partnership between the Department and the National Laboratories, and to improve management and performance in order to more effectively and efficiently execute the missions of the Department and the National Laboratories." The LOB holds monthly meetings via VTC, and meets quarterly in person (twice a year in D.C. and twice a year at a laboratory). The LOB is chaired by the Under Secretary for Management and Performance, managed by a LOB Director, and its membership includes COOs of the programs with labs; the Deputy Under Secretary for Science and Energy; two representatives from the lab COO and Chief Research Officer groups; the Director of the Office of Management; a representative from the Field Office Managers; and a representative from a Management and Operating contractor.

One of the LOB's early efforts illustrates the enterprise-wide impact of the group: the LOB led a first-ever enterprise wide assessment of general purpose infrastructure across all 17 National Laboratories and NNSA sites and plants, using newly-established metrics to provide a uniform assessment of infrastructure such as utilities, HVAC systems, and office buildings. This initiative provided the basis for an additional \$106 million requested by DOE, and funded by Congress in the FY 2016 appropriations, targeted for general purpose infrastructure projects. In addition, the Secretary directed that each program's annual proposed investments in infrastructure should halt the growth of deferred maintenance. Since then, the LOB has led DOE on other operations and management issues, such as leading the Department's implementation of its response to the recommendations from the Commission to Review the Effectiveness of the National Energy Laboratories; overseeing major changes to the Department's Directives process, which is responsible for Departmental Orders; and piloting a new Leadership Development Rotational

Program that offers DOE Federal and laboratory mid-level and senior employees opportunities to rotate to laboratory or Federal sites.

**Budget**

The FY 2017 Budget Request funds a number of initiatives that identify and institutionalize improvements and efficiencies in Departmental operations, to include evidence-based reviews on project management; human resource delivery and talent management; information technology infrastructure; and investments to improve Departmental infrastructure.

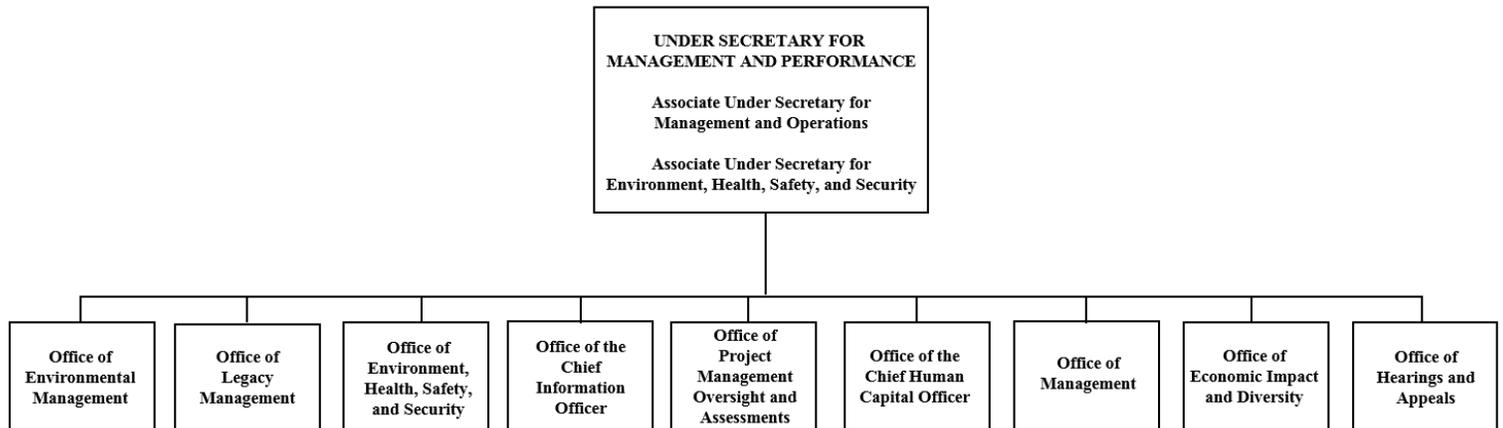
The Budget Request includes over \$6 billion for Environmental Management, to address its responsibilities for the cleanup of large quantities of liquid radioactive waste; spent nuclear fuel; contaminated soil and groundwater; and deactivating and decommissioning excess facilities used by the nation’s nuclear weapons program.

<b>Program</b>	<b>FY 2015 Enacted Budget (M)</b>	<b>FY 2016 Enacted Budget (M)</b>	<b>FY 2017 Request (M)</b>
<b>EM</b>	\$5,800	\$6,200	\$6,100
<b>LM</b>	\$171.8	\$167.1	\$154.3
<b>EHSS</b>	\$180.9	\$180.9	\$197.2
<b>CIO</b>	\$71.9	\$73.2	\$93
<b>PMOA</b>	0	0	\$18
<b>CHCO</b>	\$24.5	\$24.5	\$25.4
<b>MA*</b>	\$62.9	\$65	\$59.1
<b>ED</b>	\$9	\$10	\$11.3
<b>OHA</b>	\$5.2	\$5.5	\$5.9
<b>TOTAL</b>	\$6,300	\$6,700	\$6,600

\*In FY16, PMOA and the Under Secretary’s immediate office were funded through MA.

**Organizational Structure**

**UNDER SECRETARY FOR  
MANAGEMENT AND PERFORMANCE**



# Office of the Chief Information Officer

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

#### **Organization Information**

##### **Name:**

Office of the Chief Information Officer (IM)

##### **Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

##### **Telephone Number:**

202-586-0166

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##### **Point-of-Contact E-mail Address:**

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#### **Supporting the DOE Mission**

The Office of the Chief Information Officer (IM) supports the Department in achieving its critically important national security, scientific, and energy missions. IM leads establishment and management of robust information sharing and safeguarding capabilities to ensure the security of information from increasingly sophisticated cyber threats. IM pursues information resources modernization and adoption of innovative capabilities that enable advanced analytic techniques; information management and cybersecurity best practices; and enhanced partnerships with stakeholders

#### **Mission Statement**

The IM mission is to lead the Department of Energy's (DOE) cyber coordination across the extended DOE enterprise, including strategic policy approaches and implementation that include information sharing (mission enablement) and information safeguarding (mission assurance). IM increases transparency and cooperation across the DOE enterprise to enhance collaboration on cyber programs,

investments, and incident responses by continued emphasis on streamlining DOE governance bodies to ensure equal participation by the DOE enterprise in support of the broader Energy sector. IM matures the DOE enterprise information resources, focusing on both information and information technology, leadership, and management.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$71.9 million
FY 2016 Enacted Budget	\$73.2 million
FY 2017 Budget Request	\$93.1 million

**Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 113

**History**

The IM leads cyber information sharing and information safeguarding for the Department of Energy. The DOE CIO reports directly to the Secretary and Deputy Secretary for purposes of carrying out responsibilities under 44 U.S.C. §§ 3501-3521, while reporting to the Under Secretary for Management and Performance for all other responsibilities.

**Functions**

- ***Human Capital and Administrative Management.*** The Office of the Deputy CIO for Resources Management supports the mission through human capital, finance, and budget, and acquisition management initiatives that aid in the effective use and advancement of CIO resources.
- ***Enterprise Policy, Portfolio Management, and Governance.*** The Office of the Deputy CIO for Enterprise Policy, Portfolio Management, and Governance is a strategic information management and cyber organization aligned with DOE mission and strategy, and creates business value for stakeholders and customers. Delivers value to the Department by providing leadership, policy, guidance, management, integration, and governance. In alignment with the Information Sharing pillar in the Cyber Vision, supports information sharing, discovery, access, and availability, and data analytics.
  - ***Senior Agency Official for Records Management.*** The CIO serves as the SAO for records management, developing and implementing relevant OMB and NARA guidance consistent with the DOE operating environment.
  - ***Senior Agency Official for Privacy.*** The CIO serves as the SAO for privacy, implementing relevant, law and guidance to ensure the proper handling, protection, and reporting of Privacy Act information.
- ***Cybersecurity.*** The Office of the Deputy CIO for Cybersecurity supports the DOE mission with specific attention to cybersecurity by effectively managing the enterprise-wide organizational risk associated with the operation of unclassified and classified information systems through a distributed model that provides resiliency in the face of evolving threats.

- ***Architecture, Engineering, Technology and Innovation.*** The Office of the Deputy CIO for Architecture, Engineering, Technology and Integration advocates for an innovation-driven enterprise implementation, and defines and maintains enterprise architecture (EA) principles, standards, and policies. Works with enterprise architects to analyze current architecture and business needs and identify deficiencies, and issues recommendations on new and emerging trends in the IT industry and the Federal Government.
- ***Enterprise Operations and Shared Services.*** The Office of the Deputy Chief Information Officer for Enterprise Operations and Shared Services supports the overarching DOE mission by providing information technology support services that are reliable, secure, and cost-effective, and satisfy business needs. Provisions approximately 15,000 DOE Federal employees and contractors with IT services and develops enterprise solutions which may be extendable to the DOE enterprise.

### **Recent Organization Accomplishments**

IM's recent significant organization accomplishments include:

- ***2016 DOE Cyber Strategy.*** Through the DOE Cyber Governance, including the Deputy Secretary Chaired Cyber Council, the Department released an enterprise-wide unifying DOE Cyber Strategy that enables responsible information sharing and safeguarding best practices to ensure the success of the Department's missions, and applies privacy protections to information sharing operations.
- ***Integrated Joint Cybersecurity Coordination Center (iJC3).*** The iJC3 integrates cybersecurity across the Department in mutual, comprehensive defense of the DOE enterprise. The iJC3 will unify the breadth and depth of cyber technical expertise across DOE, remove redundancy, increase effectiveness, and holistically document and communicate cyber threats and leverage cyber capabilities enterprise-wide. In alignment with the 2016 DOE Cyber Strategy, the iJC3 is designed to both manage cyber risk across the Department using threat-informed cyber intelligence, and to mature and strengthen the Department's cyber posture and response. Previously independent cyber centers and specialized expertise will now be integrated in a collaborative, intelligence driven, enterprise distributed approach to cyber operations, defense, and response that engages DOE's full capabilities and protects the entirety of the DOE attack surface to include all program offices, national laboratories, plants, field offices, and the Power Marketing Administrations (PMAs). The iJC3 combines situational awareness of threats, operational status of networks, and indicators of known malicious activity to decrease discovery time and speed response time.
- ***Strong Multifactor Authentication Implementation.*** In June of 2015, the Office of Management and Budget (OMB) directed accelerated implementation of strong Multifactor Authentication (MFA) across all Federal Departments and Agencies. The DOE MFA Implementation Approach provided comprehensive guidance, scope, and detailed DOE entity-level plans to achieve strong MFA for all standard and privileged user accounts by September 30, 2016. DOE tracks strong MFA progress through DOE entity-level reporting of six major milestones via the electronic Capital Planning Investment Control (eCPIC) tool. DOE is required to provide monthly updates to OMB. The Deputy Secretary Memo on MFA was released on May 26, 2016.

### **Leadership Challenges**

IM's leadership challenges include:

- ***Integrated Joint Cybersecurity Coordination Center Implementation.*** Full implementation of the Integrated Joint Cybersecurity Coordination Center (iJC3) is a critical priority in 2017. The program, consisting of 11 Enterprise Cybersecurity Capabilities, reached Initial Operating Capability (IOC) on August 31, 2016. Continued implementation – including consistent coordination across DOE program offices, sites, plants, and Labs – is critical to protecting the Department.
- ***IT Infrastructure Modernization.*** Modernize the Department's IT infrastructure in a time of budget restraint. In FY2016 and for FY2017, IM worked with the Chief Financial Officer to develop requests to address the need to modernize and secure the DOE infrastructure. These plans included initiatives such as moving datacenters to the cloud, refreshing headquarters infrastructure, and providing enterprise licenses for cybersecurity tools.
- ***Federal Information Technology Acquisition Reform Act Implementation.*** The implementation of the Federal Information Technology Acquisition Reform Act – a coordinated IM, Chief Acquisition Officer, and Chief Financial Officer effort – will be ongoing in 2017. Key milestones include implementing regular meetings of the full investment review board functions through the Information Management Governance Board and rolling out standard processes for IT acquisition requests.
- ***Personnel Recruitment.*** The Department, like all Federal agencies, is challenged to attract and retain qualified cyber (IT and cybersecurity) talent. IM anticipates continued challenges to attract and hire qualified candidates to fill vacancies.

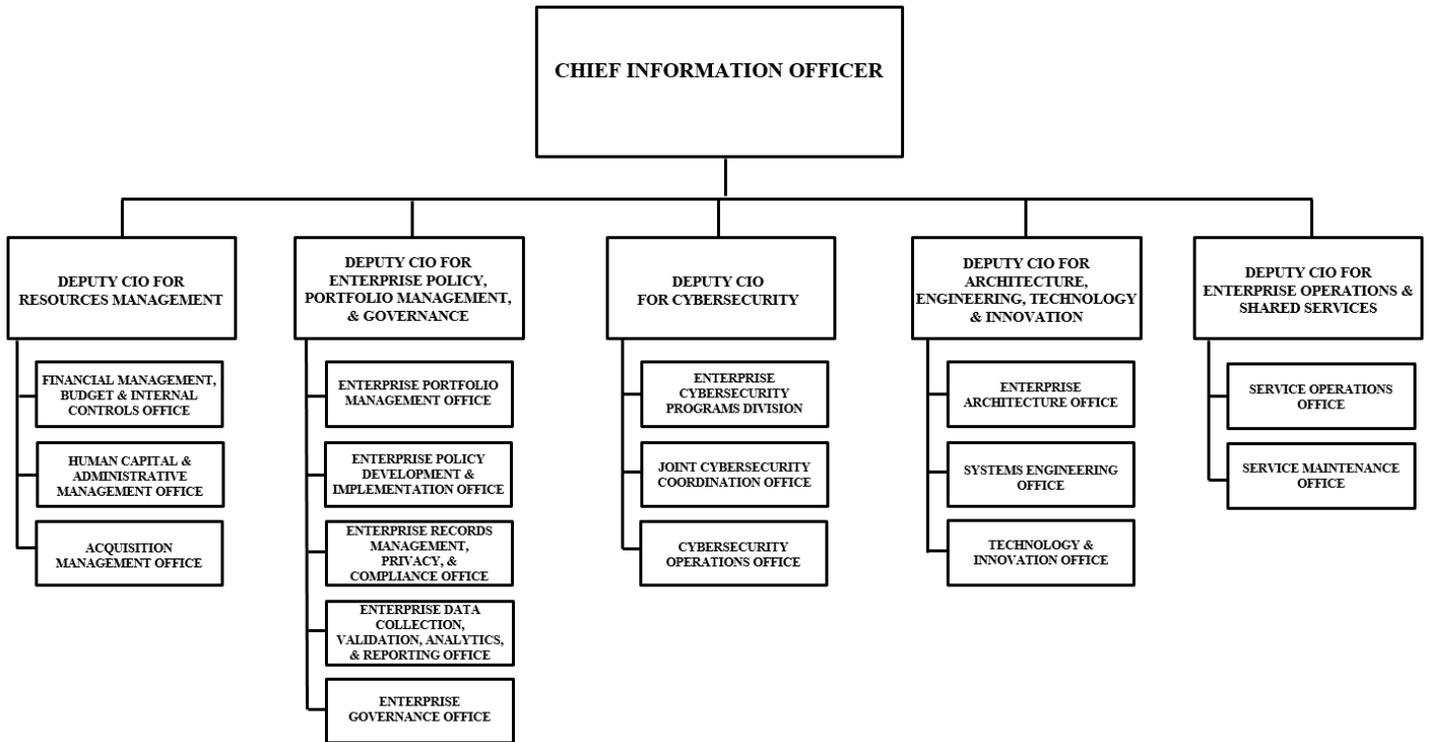
### **Critical Events and Action Items**

#### **3-month events**

- Complete implementation of strong multifactor authentication (January 2017).

**Organizational Chart**

**CHIEF INFORMATION OFFICER**



# Office of Economic Impact and Diversity

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

### Organization Information

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Office of Economic Impact and Diversity (ED)

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**Mission Statement**

The Office of Economic Impact and Diversity (ED) advises the Secretary on the impact of energy policies, regulations, and Department of Energy programs on minority communities, minority institutions, and specific segments of the U.S. population. The Office is tasked with facilitating involvement of minority serving institutions, minority businesses, and other organizations in all aspects of energy, and monitoring and strengthening DOE programs and policies by implementing a wide range of initiatives that address underrepresentation of minorities, women, and American Indians in the Department's programs, and the energy workforce.

The Office ensures compliance at DOE with Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, Section 501 of the Rehabilitation Act of 1973, the

Equal Pay Act of 1963, the Genetic Information Nondiscrimination Act of 2008, and related civil rights regulations. External compliance reviews of institutions receiving federal financial assistance from DOE are under Title VI of the Civil Rights Act and Title IX of the Education Amendments of 1972. The Office is also responsible to the Secretary of Energy for planning and executing a strategy that promotes a diverse workforce and an inclusive work environment as directed by Executive Order 13583, *Establishing a Coordinated Government-wide Initiative to Promote Diversity and Inclusion in the Federal Workforce*, along with implementation guidance provided by the Office of Personnel Management. On behalf of the Secretary of Energy, the Office is responsible for planning and leading DOE’s Minorities in Energy (MIE) Initiative.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$9.0 million
FY 2016 Enacted Budget	\$10.0 million
FY 2017 Budget Request	\$11.3 million

**Human Resources**

FY 2016 Authorized Full-Time Equivalent (FTE): 37

**Functions**

ED develops and executes policies that support full participation of minority and tribal communities, businesses, and educational institutions in energy programs, while supporting a high-performing DOE workforce through fairness, opportunity, redress, and an overall inclusive culture. ED’s core functions include:

- ***Minorities in Energy.*** Manages the Minorities in Energy (MIE) initiative to ensure enduring DOE support of Minority Serving Institutions (MSIs), underrepresented communities, and minority businesses and their participation in key Departmental initiatives to facilitate the advancement of the nation’s competitiveness and innovation within the energy sector and science, technology, engineering and mathematics (STEM) fields.
- ***Minority Education and Community Development.*** Develops programs to increase the participation and collaboration of MSIs in DOE programs. Documents DOE programmatic, funding, and contractual involvement with MSIs as required by Executive Orders. Increases capacity building and fosters long-term relationships with underrepresented communities through community economic development activities.
- ***Minority Business and Economic Development.*** Administers the Energy Sector Business Opportunity Program to raise awareness of energy sector opportunities by providing outreach and technical assistance to diverse business enterprises. Collaborates with DOE programs and fosters external partnerships to leverage and align federal resources to advance partnerships that support a diverse energy workforce and economic development in the

energy sector. Works with DOE programs to develop strategies to support technology transfer, as well as commercialization opportunities for diverse businesses.

- ***Diversity and Inclusion.*** Leads the development and implementation of a comprehensive strategic plan focused on workforce diversity and workplace inclusion as key components of DOE’s human resource strategies in accordance with Executive Order 13583. Identifies and recommends best practices, implemented in an integrated manner, to build an inclusive organization characterized by equal participatory work processes and decision-making, hiring, leadership development, equitable rewards systems, mitigation of implicit bias, and shared accountability.
- ***Civil Rights.*** Administers DOE policies, practices and procedures under Titles VI and VII of the Civil Rights Act of 1964, as amended; the Age Discrimination in Employment Act of 1967; Section 501 of the Rehabilitation Act of 1973; the Equal Pay Act of 1963; the Genetic Information Nondiscrimination Act of 2008; and related civil rights regulations. Conducts external compliance reviews of institutions receiving federal financial assistance under Title IX of the Education Amendments of 1972, Title VI of the Civil Rights Act of 1964, and related Executive Orders. Responsibilities include processing complaints based on unlawful discrimination.
- ***Equal Employment Opportunity.*** Provides services and support to DOE Headquarters and field sites to promote equal opportunity, progressively integrate equal opportunity principles into the strategic mission, and proactively prevent discrimination in accordance statutes and directives. Support includes providing training and education to DOE employees, managers and supervisors on preventing discrimination in the workplace; identifying and acting on institutional barriers to EEO; facilitating the employment of a diverse workforce; developing affirmative action plans; preparing legally mandated external reports; undertaking proactive measures to prevent unlawful discrimination; and employing a Disability Program Manager.

### **Recent Organizational Accomplishments:**

ED’s significant, recent accomplishments include:

- ***STEM Education and Workforce Development.*** Partnered with government agencies, national laboratories, and non-profit organizations to co-host STEM engagement activities across the country for students and educators from underserved communities. Activities included STEM Mentoring Cafés impacting over 900 students, parents, and educators, and “My Brother’s Keeper Day” at the Lab, impacting 1,250 students. These programs expose students to STEM and energy careers while engaging students in hands-on learning experiences and/or tours of National Laboratory facilities. Additional efforts included interagency STEM education through the White House Council on Women and Girls and publishing of DOE’s Women@Energy series, highlighting over 300 profiles of women in STEM fields across the DOE complex.
- ***Minority Education and Community Development.*** Advanced educational outcomes for minority and tribal populations via partnerships with the White House Initiatives on minority education, including STEM education events in Indian Country and roundtable discussions with Federal agencies on engaging the Historically Black Colleges and Universities (HBCU) community. Created the Advancing Research and Technology in the Sciences (ARTS)

initiative to assist the Department in fostering relationships with and providing technical assistance to Minority Serving Institutions. In April 2016, approximately 40 institutions participated in an annual site visit to DOE headquarters. In addition, developed a technical database of MSI and DOE Lab resources to facilitate research collaborations.

In 2015 and 2016, attracted more than 160 student interns to the Department through the annual Minority Educational Institution Student Partnership Program (MEISPP). The interns spent the summer in positions throughout the DOE complex, including National Laboratories.

- ***Minority Business and Economic Development.*** In collaboration with the Minority Business Development Agency, developed a Lab-to-Market pilot program to catalyze regional innovation ecosystems that stimulate job creation and business growth opportunities for minority business enterprises and Minority Serving Institutions. Also created an Energy Sector Business Opportunity Program to provide technical assistance to minority businesses, educate them on trends and opportunities, and make industry connections. Educated more than 350 business employees through a conference on *Oil and Gas* and a conference on *Renewable Energy and Emerging Technology*.

Led DOE's Southwest Louisiana (SWLA) Regional Partnership in collaboration with local government and community leaders, supporting their goal to encourage economic growth by harnessing regional energy development. As the convener, DOE identified resources across federal agencies, helped communities navigate technical and financial assistance opportunities for increasing local capacity, tailored local solutions, and developed a Regional Business Participation Plan and Communications Plan.

Developed a framework for community and industry engagement by creating a Community Benefit Agreement Toolkit to help local governments and community organizations harness private sector energy development to drive economic growth. The toolkit describes Community Benefit Agreements (CBAs), and includes a webinar, FAQs, CBA examples, and a resource guide.

- ***Diversity and Inclusion.*** Implemented the OneDOE Campaign and related initiatives that develop and sustain an inclusive work environment and support a high performing and diverse workforce, including OPM's New Inclusion Quotient training, for 15 diversity managers and headquarters personnel to provide employees with best practices that lead to a more inclusive workplace and focus the dialogue on organizational performance. Building an inclusive organization includes engaging senior management, driving employee engagement and organizational performance, raising awareness, and eliminating systemic challenges.

Reinvigorated Employee Resource Groups (ERGs) at the Department of Energy to serve as resources for the DOE community and the Office of Diversity and Inclusion on topics related to employee engagement, recruitment, and retention.

- ***Civil Rights and Equal Opportunity.*** Reestablished the DOE Office of Equal Employment Opportunity in Fiscal Year 2016. The Office of Civil Rights and Equal Opportunity is now the umbrella organization for the existing Office of Civil Rights and the Office of Equal Employment Opportunity. The Office of Civil Rights increased the number of Title IX

Compliance Reviews conducted at universities receiving federal financial assistance from the DOE by 33 percent.

### **Leadership Challenges**

ED's main leadership challenge includes:

- ***Terminating the Bank Deposit Financial Assistance Program (BDFAP)***. This program was developed to expand the Nation's minority and women-owned small business enterprises and was funded entirely by settlement money from violations of the Emergency Petroleum Allocations Act of 1973. DOE was granted authority to manage this money until the final disbursement. In keeping with the intent of the program, DOE purchased Certificates of Deposit (CDs) from eligible minority financial institutions beginning in the 1980s. These institutions, in turn, used funds from the purchased CDs to provide loans to minority and women-owned small business enterprises. On December 8, 2016, the Department of Energy will begin the process of removing CDs, upon maturity, from the 61 participating institutions, leading to termination of the BDFAP by July 2017. Although DOE notified the public and banks about terminating the program in the summer of 2016, some of the participants may express additional concern during the CD removal process.

### **Critical Events and Action Items**

#### **3-month events**

- Coordinate with the Southwest Louisiana Regional Partnership to develop on-line tools to connect Louisiana businesses to industry opportunities. Support the National Resource Network's project to build a K-12 career pipeline to high demand jobs.
- Reinvigorate DOE's Diversity & Inclusion Executive Council to advise the Secretary on diversity and inclusion efforts across the complex.

#### **6-month events**

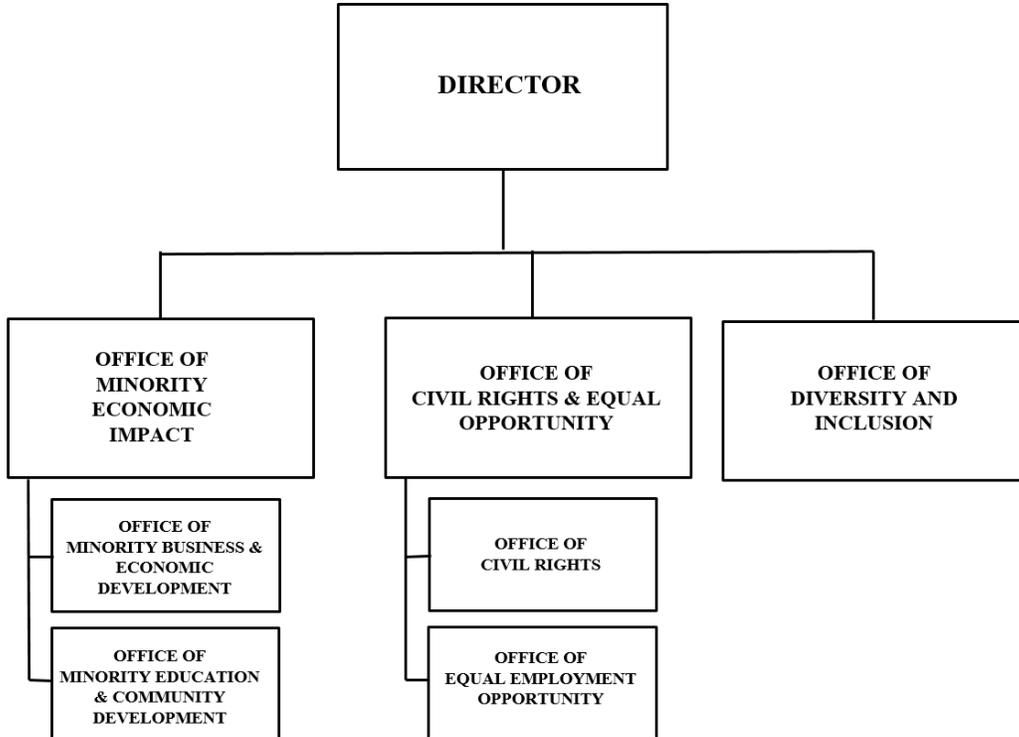
- Partner with the Minority Supplier Development Council (MSDC) to plan and cohost two energy sector business opportunity sessions in FY 2017. Dates and locations TBD.

#### **12-month events**

- Establish and implement a comprehensive plan and process to institutionalize the Minorities in Energy Initiative, ensuring continuous opportunities for minority communities to engage in Department programs and the national energy sector.

**Organization Chart**

**OFFICE OF ECONOMIC IMPACT AND DIVERSITY**



# Office of Environment, Health, Safety and Security

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

**Strategic Objective 11:** Operate the DOE enterprise safely, securely, and efficiently.

### Organization Information

#### Name:

Office of Environment, Health, Safety and Security (AU)

#### Address:

1000 Independence Avenue, SW  
Washington, D.C. 20585

Additional offices in Germantown, MD

#### Phone Number:

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#### Website:

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### Supporting the DOE Mission

DOE has a wide portfolio of missions and operations with many unique and significant hazards (e.g., nuclear, chemical, biological, industrial) and security risks (e.g., classified information and nuclear weapon material). AU plays a key corporate role in enabling DOE to perform its mission in a safe and secure manner in order to protect DOE's workers, the public, the environment, and national security assets.

AU works closely with stakeholders

(including DOE Program and Field Office management, subject matter experts, and labor and community representatives) to: develop and improve environmental, health, safety and security policy and guidance; foster continuous improvement before incidents occur; and provide technical assistance, coordination, and integration to support all DOE organizations in the resolution of environmental, health, safety and security issues.

AU's unique position and expertise provides it with an overview of environmental, health, safety and security concerns from across DOE Headquarters, field sites, and contractor organizations. This wide perspective allows AU to provide crosscutting expert advice and implementation assistance for the protection of DOE workers, the public, and the environment, as well as the Department's material and information assets. AU also represents the Department in national and international environmental, health, safety, and security matters to assure the Department's interests are represented.

### **Mission Statement**

AU is DOE's central organization responsible for developing environmental, health, safety, and security policy, and for providing corporate-level leadership and strategic vision to coordinate and integrate these vital programs into accomplishing DOE's mission. AU is responsible for policy development and technical assistance; safety analysis; and corporate safety and security programs. In addition, the Associate Under Secretary for Environment, Health, Safety and Security advises the Under Secretary and Deputy Under Secretary for Management and Performance on all matters related to environment, health, safety, and security across the complex.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$182.9 million
FY 2016 Enacted Budget	\$181.0 million
FY 2017 Budget Request	\$197.2 million

### **Human Resources**

FY 2016 Authorized Full-Time Equivalent (FTE): 260.

### **History**

From the inception of DOE (and its predecessor Agencies, e.g., the Atomic Energy Commission), DOE has had an organization reporting directly to the Secretary, Deputy Secretary, or an Under Secretary responsible for developing and supporting implementation of policies and requirements to ensure the protection of workers, the public, the environment, and the security of DOE assets. This has been and remains a critical function, given that DOE operates facilities with

significant hazards and significant national security assets. These hazards include high level radioactive waste and toxic chemicals. National security assets include classified information and material related DOE's nuclear weapon surety mission.

AU was created in May 2014, as part of a broad DOE reorganization. The Department's environmental, health, safety, and security policy offices, along with the Headquarters Security Operations, were consolidated within the Under Secretary for Management and Performance, reporting to a new Associate Under Secretary for Environment, Health, Safety and Security. AU continues to manage DOE's longstanding environmental, health, safety, and security programs, and provides specialized expertise and support to DOE Program and Field Offices to protect DOE workers, the public, the environment, and DOE national security assets.

DOE has an excellent safety record, is a leader in environmental management, and has enhanced its multiple levels of protection to ensure national security. However, significant safety and security challenges remain at DOE, and DOE continues to learn and improve based upon sharing of best practices and lessons-learned from events (such as the accident at the Waste Isolation Pilot Plant). AU works closely with the Program Offices and Field Offices to support efforts to improve safety and security performance and to foster improvements throughout the DOE complex.

## **Functions**

AU's major programmatic activities include:

- ***Policy Development.*** Leads the Department's development of environmental, health, safety, and security policies and requirements, and supports the effective and efficient implementation of policies and requirements to assure DOE complies with statutory, regulatory, or executive order requirements in accomplishing its mission.
- ***Policy Implementation Assistance.*** Works proactively with DOE Program and Field Offices to provide high-quality, customer-oriented assistance to enable effective implementation of environmental, health, safety, and security requirements. Supports the field in resolving environmental, health, safety, and security issues. Provides consultations on requests for exemptions from DOE requirements. Supports DOE's National Training Center in developing and conducting environmental, health, safety, and security training that is tailored to DOE needs and missions.
- ***Environment, Health and Safety Leadership.*** Provides leadership and support for improvements in environmental, safety, and health performance throughout the DOE Complex through its various corporate roles such as: Designated Agency Safety and Health Officer for DOE's Federal Employee Occupational Safety and Health (FEOSH) program; chair of the Nuclear Safety Committee; Champion for Integrated Safety Management (which is the Department's framework for the safe performance of work and promoting a strong safety culture); co-chair of DOE's

Safety Culture Improvement Panel; and lead for designing programs by which DOE is reducing the environmental footprint of its operations.

- ***Security Operations.*** Provides personal protection to the Secretary and Deputy Secretary of Energy, where warranted, and other executive personnel as designated by the Secretary. Manages the DOE Headquarters protective force and physical security program to protect personnel, facilities, property, and classified information. Manages the enterprise-wide effort to help DOE programs deter and detect insider threat actions by federal and contractor employees.
- ***Classified Information Protection.*** Serves as the focal point for identification of classified information within the Department. Also serves as the single denial authority for classified information requested under the Freedom of Information Act which prevents inadvertent releases of classified information. Supports the National Declassification Center and ensures that information protected under the Atomic Energy Act remains protected at the National Archives.

Other key AU activities include:

- ***Corporate Environment and Safety Programs.*** Manages corporate programs that assist the DOE complex with ensuring that environmental and safety requirements are being met, including:
  - DOE's Analytical Services Program, which ensures that the analytical environmental laboratories that DOE utilizes to support disposal of low-level radioactive waste meet regulatory requirements.
  - The DOE Laboratory Accreditation Program, which implements performance standards for DOE contractor's radioactive dosimetry and radiobioassay programs.
  - The DOE Filter Test Facility, which inspects and tests all the high efficiency particulate air filters used at DOE sites to ensure confinement of radioactive material.
- ***Health Studies.*** Manages and conducts studies to increase scientific knowledge on the health effects of exposure to ionizing radiation and other industrial hazards:
  - ***Domestic*** - Studies on health effects to DOE workers and to the public living in communities near DOE sites.
  - ***International*** - Studies, mandated by Congress or required by international agreement in Japan, Marshall Islands, Russian Federation, and Spain.
  - ***United States Transuranic and Uranium Registries*** - Research on the potential health effects of transuranic elements based on evaluation/study of DOE workers who volunteered for this program.
- ***DOE Chief Medical Officer.*** Serves as the Department's Chief Medical Officer, keeping fully abreast of emerging national and international developments in public and occupational medical issues.
- ***Occupational Illness Compensation Program.*** Supports the implementation of the

Energy Employees Occupational Illness Compensation Program Act by providing employment status and occupational exposure information, as well as facility operational history to the Department of Labor, the National Institute for Occupational Safety and Health, and the Presidential Advisory Board.

- ***Former Worker Medical Screenings.*** Provides medical screening examinations to former workers who may have been exposed to harmful conditions as a result of working for DOE. As of September 2015, over 110,000 medical examinations have been conducted by the program.
- ***Operating Experience Program.*** Manages DOE's Corporate Operating Experience Program to identify and disseminate performance indicators, lessons learned, and operating experience for use in preventing adverse events and improving safety performance at DOE facilities.
- ***Employee Concerns Program.*** Manages DOE's Employee Concerns Program (ECP), which encourages the expression of employee concerns and provides DOE federal, contractor, and subcontractor employees with a process to have concerns addressed. Manages DOE's Differing Professional Opinion Program, which addresses the resolution of technical environment, safety, and health concerns that could not be resolved at the local level.
- ***Voluntary Protection Program.*** Operates DOE's Voluntary Protection Program (VPP), utilizing DOE's Integrated Safety Management (ISM) framework, which encourages DOE and NNSA contractors to pursue excellence in worker safety and health beyond compliance with rules, orders, and standards. The program parallels the Occupational Safety and Health Administration's VPP.
- ***Nuclear Safety Research.*** Manages DOE's corporate Nuclear Safety Research and Development Program, and supports a broad range of projects to enhance nuclear safety in the design, construction, and operation of DOE nuclear facilities.
- ***Liaison to Defense Nuclear Facilities Safety Board (DNFSB).*** Coordinates interactions with the DNFSB to facilitate effective communications between the Board and DOE Senior leadership to address Board's nuclear safety concerns at the Department's defense nuclear facilities.
- ***Security Technology.*** Provides technical security expertise to internal and external organizations to identify opportunities to enhance the security protection programs and develops and promotes deployment of new technologies to improve security.
- ***Medical Disqualification Reviews.*** Provides for and coordinates Independent Reviews of Protective Force Medical Disqualifications pursuant to 10 CFR Part 1046, *Medical, Physical Readiness, Training, and Access Authorization Standards for Protective Force Personnel.*

## **Recent Organizational Accomplishments**

AU's recent significant organizational accomplishments include:

- ***Environmental Stewardship.*** AU has led DOE's efforts to reduce its emissions of sulfur hexafluoride (SF<sub>6</sub>), the world's most potent greenhouse gas, helping the Department reduce SF<sub>6</sub> emissions by more than 50% since 2008. AU has been recognized for its sustainable environmental stewardship work, including the Sustainable Purchasing Leadership Council Leadership Award, the Green Electronics Council EPEAT Purchaser and Leadership Awards, and the White House GreenGov Climate Champion Award.
- ***Consolidated Audit Program.*** In 2015, the AU-managed Analytical Service Program (ASP) completed over 28 audits of analytical laboratories and commercial waste treatment, storage and disposal facilities to ensure the facilities are in compliance with Federal and DOE requirements and are producing results adequate to meet DOE needs. The ASP Mixed Analyte Performance Evaluation Program provided performance testing samples to 89 domestic laboratories and 47 international laboratories in 2015. The performance tests assist laboratories in improving their analytical performance and alert DOE line management of poor performers.
- ***U.S. Transuranium and Uranium Registries.*** In 2016, DOE/AU reached a major milestone of the U.S. Transuranium and Uranium Registries (USTUR)—five-decades of study of the potential health effects to DOE workers from their work with plutonium and uranium. USTUR is a highly regarded national and international program evaluating the deposition and movement of radioactive materials through the human body (biokinetics). This year the Health Physics Society held a special, full-day technical session on USTUR, the transactions of which will be published in a special issue of the Health Physics Journal in 2017. Over the past five decades, USTUR research has been featured in more than 500 scientific publications, and numerous conferences, public lectures, and seminars.
- ***Worker Safety and Health.*** In 2016 AU performed several important activities to support improvements to DOE worker safety and health including:
  - Published a Notice of Proposed Rulemaking to amend the Department's beryllium rule.
  - Performed outreach visits and DOE-wide teleconferences to support implementation of DOE's worker safety and health rule.
  - Institutionalized best practices from implementation of ISM and worker safety and health program in policy, assistance, and training.
  - Made significant improvements to VPP protocols for application to and award of VPP status and converted the protocols to a technical standard.
- ***Employee Concerns Program.*** In 2016, AU assumed responsibility for managing the DOE-wide ECP designed to provide federal, contractor, and sub-contractor employees with an independent avenue to raise employee concerns, and to support a strong safety culture where employee concerns can be raised without fear of

retaliation. AU has worked with its counterparts in the Program and Field Offices, and Headquarters employee support offices to begin to develop a DOE-wide ECP training for use by DOE federal and contractor ECPs' managers and staff. The ECP has also conducted introductory meetings with Headquarters employee support offices to discuss respective roles and responsibilities and how to accomplish them in a coordinated manner. Regular teleconferences with the ECP's counterparts in the Field Offices have been held to exchange information, share lessons learned, and promote mutual support and cross-program exchange efforts to enable prompt attention to employee concerns as they are raised.

- ***Safety Culture.*** In 2015, AU led the establishment of the Department's Safety Culture Improvement Panel, chartered by the Deputy Secretary, to create a permanent, high-level organization devoted to promoting safety culture; provide cross-organizational leadership focused on continuous safety culture improvement; and create an ongoing forum to exchange information and ideas that will establish, monitor, and sustain measures supporting a strong safety culture. This also strengthens DOE's implementation of ISM.
- ***Nuclear Safety Research and Development.*** AU assumed responsibility for the Nuclear Safety Research and Development Program in FY 2013. Since that time, it has received 89 research proposals and has funded 15 projects. Funded projects include development of advanced HEPA filters, improved modeling of the transport of radioactive material in nuclear facility for use in safety analyses, and investigation of the behavior of nuclear material storage containers during fires. AU is also responsible for the management of a multi-office-sponsored project with the objective of advancing the state-of-the-art in non-linear seismic modeling. That project was initiated in FY 2015 and is scheduled for completion in FY 2020.
- ***Senior Level Security Committee.*** In 2014, AU led an initiative to form the Security Committee, comprised of security experts representing each Under Secretary, to identify corporate security strategies and guide security policy development. The Security Committee currently develops recommendations regarding Department-wide security policies, facilitates coordination of effective security strategies across the Department, and provides a forum for addressing cross-organizational issues and challenges.
- ***Insider Threat Program.*** AU is the lead office for the Designated Senior Official for Insider Threat and in 2015 stood up the Insider Threat Program (ITP) Management Office (ITPMO). The ITPMO works in conjunction with Program and staff offices throughout DOE to establish an enterprise-wide Insider Threat Program aimed at preventing insiders from doing harm to the people and assets entrusted to the Department's care.
- ***Design Basis Threat.*** AU is leading the effort to replace the Graded Security Protection Policy – DOE's long-term, performance-based security planning metric – with a new Design Basis Threat (DBT) Order which establishes requirements for the DOE complex. The DBT is informed by current intelligence data provided by the Intelligence Community. The DBT incorporates the principles of risk management and provides a more balanced and sustainable

security plan reflecting a better understanding of the current threat. It has been coordinated with the Nuclear Regulatory Commission, the Office of Naval Reactors, and the Electricity Information Sharing and Analysis Center Physical Security Advisory Group. The draft DBT has been briefed to the House and Senate Armed Services Committees.

### **Leadership Challenges**

AU's challenges include the following:

- ***Employee Concerns Program.*** AU is revising policies and procedures for the ECP, which AU recently assumed responsibility for, and is leading implementation to ensure that employees have confidence in using the ECP without fear of reprisal. As part of implementation, AU will develop and roll-out needed training. AU did not receive additional resources for handling existing ECP cases and has been using detailed or loaned staff. AU will develop recommendations to ensure adequate staffing is available on a permanent basis.
- ***Policy Development.*** The Commission to Review the Effectiveness of the National Energy Laboratories issued a report citing concerns that DOE requirements documents (e.g., directives) are in some cases overly prescriptive and recommended that DOE overhaul its directives process to reduce unnecessary burden on the laboratories. AU has about 60 out of DOE's 216 directives and is working with the DOE leadership team to make improvements to ensure DOE has an effective set of environmental, health, safety, and security directives.
- ***Relationship with Defense Nuclear Facilities Safety Board.*** Maintaining a good working relationship with the DNFSB is important for facilitating improvements in DOE nuclear safety and requires effective, ongoing communication at the senior management level to ensure understanding of DNFSB concerns.
- ***Reducing DOE's Carbon Footprint through Reduction of SF<sub>6</sub> Emissions.*** While DOE has reduced SF<sub>6</sub> emissions by more than 50% since 2008, the Department is still responsible for 7% of total US SF<sub>6</sub> emissions, a pollutant with a global warming potential of more than 22,000 times that of CO<sub>2</sub>. Identifying methods for achieving the mission objectives with a reduced environmental and greenhouse gas footprint is an ongoing challenge across the agency.
- ***Disposal of Scrap Metals from Radiological Areas.*** DOE is challenged by a 2000 Secretarial determination that encumbered any scrap metals originating in DOE radiological areas (as defined by 10 CFR 835, *Occupational Radiation. Protection*) from release from DOE control until the Department implemented several performance improvements, which exceed those used in the commercial licensed sector. Although these improvements have been implemented as directed, DOE continues to prohibit the release of radiologically cleared scrap metal which forces DOE sites to pay for its disposal rather than accruing the financial and environmental benefits of releasing it for recycle.

- ***Effective Implementation of Oversight of Analytical Laboratories.*** The increased demands on oversight of analytical laboratories are resulting in budget challenges. AU is evaluating alternatives for streamlining and improving the oversight activities and cost sharing alternatives with the laboratories.
- ***Insider Threat.*** Implementing an enterprise-wide insider threat monitoring program is challenged by DOE's lack of enterprise-wide processes; a culture of independence versus interdependence; and the myriad of technical difficulties associated with merging data from existing DOE systems run by many separate federal and contractor organizations.
- ***Executive Protection.*** Recent world events; a higher profile of DOE and the Secretary; and a larger volume of travel have demanded an increase in resources dedicated to the protection of the Secretary. Increased tempo for shorts spurts is expected; however, additional resources will be required for the team to sustain robust protective long-term operations if the risk remains at its current level.
- ***Design Basis Threat (DBT).*** Implementing the new DBT – which prescribes the performance metrics for the protection of nuclear weapons, nuclear weapons components, special nuclear material, national critical infrastructure, national laboratories, sites and facilities, personnel and other Departmental assets – will be a critical challenge in 2017. AU will work closely with the Program Offices and DOE Chief Security Officers on this effort.
- ***Corporate Security Strategy.*** The 2012 incursion by three peaceful anti-nuclear activists at the Y-12 National Security Complex strongly impacted the DOE security community and prompted multiple internal and external reviews revealing significant security leadership and organizational culture issues. AU is leading efforts to build a strong enterprise-wide security community that can address these issues. As the secretariat of the DOE Security Committee (composed of the Chief Security Officers and others), AU helps set the agenda and ensure crosscutting issues are tracked to completion. AU has also studied protective force readiness and complacency and is exploring practical ways to have a positive impact on response effectiveness.
- ***Technical Security.*** AU is working with the Chief Information Officer and the Chief Security Officers to increase the integration of technical security and cyber security to enhance overall risk management and asset protection.

### **Critical Events and Action Items**

#### **3-month events**

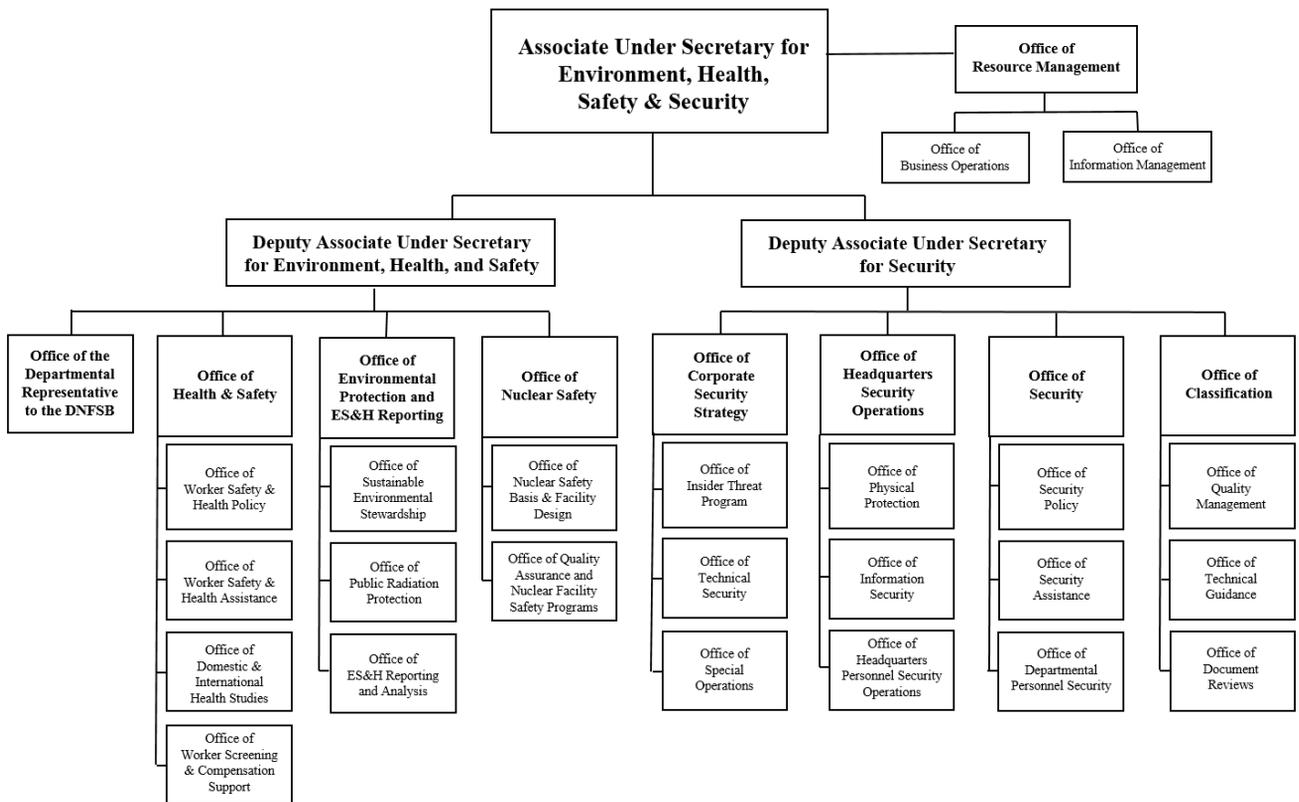
- ***Annual Special Nuclear Material Certification.*** Annually certify to Congress that Category I and II Special Nuclear Material is secure. Due to Congress on December 1 each year. (Reference 50 USC §2657, *Annual Report and Certification on Status of Security of Atomic Energy Defense Facilities*).

#### **6-month events**

- Meet with DNFSB.** The DNFSB is led by five presidential appointees who provide advice and recommendations to the Secretary on nuclear safety issues that could impact adequate protection of public health and safety at defense nuclear facilities. It has proven beneficial for the incoming Secretary to have a short meeting with DNFSB within the first 3-6 months of taking office. There are several current DNFSB Recommendations being implemented by DOE which impact DOE missions.

**Organization Chart**

**Associate Under Secretary for the Office of Environment, Health, Safety and Security**



# Office of Environmental Mangement

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

### Organization Information

**Name:**

Office of Environmental Management (EM)

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### Supporting the DOE Mission

Fifty years of nuclear weapons production and energy research generated millions of gallons of liquid radioactive waste; millions of cubic meters of solid radioactive waste; thousands of tons of spent nuclear fuel and special nuclear material; and large quantities of contaminated soil and water. Established in 1989, the Environmental Management (EM) program works to achieve the successful cleanup of this Cold War legacy. In a commitment to the safety and protection of workers and communities, EM pursues a safety culture built on trust, mutual respect, worker engagement, and communication, fostering an atmosphere that advocates continuous learning, promotes a questioning attitude, and employs effective resolution to reported problems.

EM supports the Department of Energy's Strategic Plan to continue the safe cleanup of radioactive and chemical waste resulting from Manhattan Project and Cold War activities. DOE

has been working for over 25 years to clean up the radioactive and chemical contamination left by five decades of weapons production and nuclear energy research during the Manhattan Project and the Cold War. While much has been completed, some of the highest risk and most technically complex work remains. The challenges include designing, building, starting up, and operating complex, hazardous, and unique nuclear facilities. Successful cleanup depends on overcoming technical, quality assurance, schedule, regulatory, and management challenges.

The Department leverages past experience, applying best practices and lessons learned; identifies, develops, and deploys practical technological solutions derived from scientific research; and looks for innovative and sustainable practices that make cleanup more efficient.

EM continues to pursue its cleanup objectives safely within a framework of regulatory compliance commitments and best business practices. The rationale for cleanup prioritization is generally based on achieving the highest risk reduction benefit per radioactive content (activities focused on wastes that contain the highest concentrations of radionuclides and sites with the highest radionuclide contamination). Taking many variables into account, EM has generally prioritized cleanup activities in the following areas: radioactive tank waste management; special nuclear materials and used nuclear fuel management; facility decontamination and decommissioning; transuranic and solid waste management; soil and groundwater remediation; and site services such as program support; mission innovation and technology; post closure administration; community and regulatory support; and maintenance and repair activities.

**Mission Statement**

The EM mission is to complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research.

**Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$5,861.0 million
FY 2016 Enacted Budget	\$6,218.5 million
FY 2017 Budget Request	\$6,119.1 million

**Human Resources**

FY 2016 Authorized Full Time Equivalentents (FTEs): 1,460.

**History**

In 1942, the U.S. Government launched an effort to develop the first atomic bombs, which came to be known as the Manhattan Project. Conducted in secret, the Manhattan Project eventually employed more than 130,000 people at research and production sites located across the United States. These sites included the Los Alamos research site in New Mexico as well as production facilities in Hanford, Washington, and Oak Ridge, Tennessee.

During the Cold War, the U.S. expanded nuclear weapons research and production, building sites such as the Savannah River Plant in South Carolina, the Idaho National Laboratory in Idaho, and the Rocky Flats Plant in Colorado. The U.S. nuclear stockpile reached more than 30,000 nuclear weapons. Research and production of weapons resulted in large volumes of nuclear waste and other materials that posed unique radiation hazards; unprecedented volumes of contaminated

water and soil; and a vast number of contaminated structures ranging from reactors to chemical plants for extracting nuclear materials to evaporation ponds. At that time, the United States did not have the environmental protection expertise, processes, or regulations that exist today. Therefore, large amounts of nuclear waste were generated, stored, and disposed in ways that we now consider to be unacceptable, such as in single-shell underground tanks.

In 1989, in order to address the cleanup of nuclear waste across the Nation's weapons complex, DOE created the Office of Environmental Restoration and Waste Management, which later was renamed the Office of Environmental Management (EM). Prior to 1989, separate offices within DOE had responsibility for nuclear and non-nuclear-related cleanup at all sites and facilities, and it was difficult to coordinate and prioritize these activities without central management. By establishing the EM Program, DOE centralized its cleanup responsibilities and demonstrated its commitment to environmental cleanup.

During the early years of DOE's cleanup efforts, the Department worked to lay the groundwork for what the EM program is today, working to maintain safety at former nuclear weapons production sites while negotiating federal and state environmental compliance agreements. DOE also concentrated on characterizing waste and nuclear materials and assessing the magnitude and extent of environmental contamination.

In the mid-1990s, the EM program moved from characterization and urgent risk reduction activities to making significant cleanup progress across the DOE complex. Major progress was made in soil and groundwater remediation; high-level waste (HLW) processing for permanent disposal; spent nuclear fuel (SNF) and excess nuclear material disposition; transuranic (TRU), low-level and mixed low-level waste disposal; and deactivation and decommissioning (D&D) of excess facilities. Cleanup activities at a number of small sites were completed, as well as at one of the larger weapons component fabrication sites—the Pinellas Plant in Florida.

In the 2000s, EM completed the cleanup and closure of four major nuclear weapons production sites: Rocky Flats in Colorado, Weldon Spring in Missouri, and Fernald and Mound in Ohio. Later in the decade, the American Recovery and Reinvestment Act allowed EM to realize significant footprint reduction at major sites such as Hanford and the Savannah River Site.

Over the last 27 years, EM realized significant accomplishments and risk reduction across the DOE cleanup program, including:

- Safely consolidating and storing the majority of nuclear materials in the EM complex from several sites and states (e.g., Rocky Flats and Hanford) at the Savannah River Site.
- Safely packaging for final disposition the majority of spent nuclear fuel in the EM complex.
- Greatly reducing the number of Material Access Areas (buildings or other areas containing special nuclear materials) across the EM complex, which significantly reduces operating costs. Special nuclear materials are fissile materials (materials capable of sustaining a nuclear fission chain reaction) such as plutonium-239, uranium-235, and uranium-233.
- Disposing of approximately 75 percent of the low-level radioactive waste and mixed-low-level waste (low-level waste that also contains hazardous waste such as heavy metals or chemical contaminants of concern) across the EM complex, and approximately half of

the contact-handled (CH) transuranic (TRU) waste across the EM complex. Generally, TRU waste consists of clothing, tools, rags, residues, debris, soil, and other items contaminated with radioactive elements, mostly plutonium. These man-made elements have atomic numbers greater than uranium, thus trans-uranic, or beyond uranium on the Periodic table of Elements. CH-TRU waste can be safely handled by workers under controlled conditions without any shielding other than the containers itself. CH-TRU waste will make-up approximately 96 percent of the total volume of waste to be disposed at WIPP. The remaining four percent will be remote-handled TRU waste, which emits more penetrating radiation than CH-TRU waste, and must be handled and transported in lead-shielded casks.

- Completing remediation of approximately 75 percent of the soil and groundwater release sites across the EM complex.
- Completing D&D activities at more than half of the radioactive and industrial facilities across the EM complex.

Going forward, EM will continue to aggressively pursue the safe cleanup and closure of its remaining 16 sites.

### **Functions**

- ***Waste Management.*** EM's waste management activities involve planning and optimizing tank waste processing and nuclear materials, including spent nuclear fuel. EM offices that focus on waste management develop policy and guidance, and provide technical advice on the tank waste system and nuclear materials.
- ***Site and Facility Restoration.*** EM's site and facility restoration activities include performing program management functions to identify and advance strategies to plan and optimize EM soil and groundwater remediation; deactivation and decommissioning (D&D); and facility engineering projects and processes to ensure optimized management of these projects and technical practices. EM establishes policy for transition of contaminated facilities from initial shutdown, to D&D, to eventual disposition, consistent with laws and regulations.
- ***Program Management.*** EM provides program management support across the EM complex that support a varied array of EM services, all with the goal of continuously improving performance. The focus is to assure effective project, acquisition, and contract management; manage the safeguards, security and emergency preparedness activities; and to manage, integrate, and coordinate planning and budget support. EM also manages technology development initiatives to reduce life cycle costs and improve efficiency of cleanup.
- ***Communications and Engagement.*** EM's various communications and engagement programs are responsible to develop guidance, monitor, and oversee EM's interactions with intergovernmental groups, advisory boards, tribal nations, and other affected entities, communities, and stakeholders. Communications and engagement activities represent EM's cleanup mission to Congress, OMB, state, Tribal, and local governments and other stakeholders.

### **Recent Organization Accomplishments**

EM's recent significant organization accomplishments include:

- ***Columbia River Cleanup.*** Completed the bulk of the cleanup along the 220-square-mile Columbia River corridor at Hanford ahead of schedule and under budget. This entailed the demolition of more than 500 facilities, the remediation of more than 1,200 waste sites, the removal of approximately 16 million tons of waste and the “cocooning,” or placement into interim safe storage, of six former production reactors. A seventh reactor located along the Columbia River corridor, B Reactor, has been preserved and is now a part of the Manhattan Project National Park.
- ***Plutonium Finishing Plant Deactivation.*** Deactivated and made ready for demolition the Plutonium Finishing Plant (PFP) at Hanford. Long seen as one of the most dangerous buildings in the DOE cleanup program, the PFP was used during the Cold War to produce hockey-puck sized plutonium “buttons” and plutonium oxide powder for use in nuclear weapons production.
- ***Direct Feed Low Activity Waste Strategy.*** Developed and implemented a new phased approach to commissioning and starting up the Hanford Waste Treatment and Immobilization Plant (WTP)—known as Direct Feed Low Activity Waste (DFLAW)—that is expected to result in actual waste processing to begin as soon as 2022.
- ***High Level Radioactive Waste Retrieval.*** Completed retrieval of high-level radioactive waste from 15 of Hanford’s aging single-shell tanks for storage in the site’s more robust double-shell tanks, pending processing at the WTP for final disposition.
- ***Uranium Mill Tailing Disposal.*** Disposal of 8 million tons of uranium mill tailings from the Moab site in Utah under the Uranium Mill Tailings Remedial Action Project. That is half of the estimated total 16 million tons to be shipped to an engineered disposal cell near Crescent Junction, Utah.
- ***Los Alamos Environmental Cleanup.*** Established the new EM Los Alamos Field Office to allow EM to assume management responsibility for the legacy cleanup at Los Alamos National Laboratory. DOE transferred management responsibility to EM from the National Nuclear Security Administration (NNSA) to enable increased efficiencies in the environmental cleanup through employment of specialized contractors and synergies with other EM operations. The Department has also recently negotiated and finalized a new Consent Order with the state of New Mexico to govern how legacy cleanup work will be performed at Los Alamos going forward.
- ***Gaseous Diffusion Building Demolition.*** Completed the demolition of three former gaseous diffusion uranium enrichment process buildings at Oak Ridge—Buildings K-25, K-31, and K-27. These were the last of the five former uranium enrichment process buildings at the Oak Ridge East Tennessee Technology Park (ETTP). With demolition of the former uranium enrichment process buildings, ETTP is the first former gaseous diffusion enrichment site in the world to be successfully decommissioned.
- ***Salt Waste Processing Facility Completion.*** Completed the construction of the Salt Waste Processing Facility at the Savannah River Site. Anticipated to be in operation by end of 2018, this facility is intended to significantly increase EM’s ability to process and prepare for final disposition radioactive waste taken from Savannah River’s set of underground high-level waste tanks.

- **High-Level Waste Tank Closure.** Completed the closure of eight of Savannah River's underground high-level waste tanks.
- **Defense Waste Processing Facility Operations.** Marking the 20<sup>th</sup> anniversary of operations at the Defense Waste Processing Facility (DWPF) at Savannah River. The DWPF is the nation's only operating nuclear waste vitrification facility, and DWPF has removed approximately 58.6 million curies from SRS liquid waste since its startup.
- **Paducah Gaseous Diffusion Plant Transition.** Transitioned the Paducah Gaseous Diffusion Plant in Kentucky back to DOE control from the site's previous leaseholder, USEC Inc. (now known as Centrus Energy Corp.). This has allowed DOE to move forward with deactivation activities to prepare the plant for eventual demolition.

### **Leadership Challenges**

EM's leadership challenges include:

- **Balancing Competing Priorities with Constrained Funding.** Balancing competing priorities while achieving progress in a constrained funding environment, with the current EM mission expected to take several decades to complete. Growing obligation to fund legacy pensions at EM cleanup sites (e.g., Savannah River Site), resulting in less funds available to support mission accomplishment.
- **Cost of Regulatory Commitments.** Addressing the gap between anticipated funding levels and the cost of current regulatory commitments in approximately 40 federal and state compliance agreements governing work at EM sites, as well as renegotiating these compliance agreements when necessary.
- **Personnel Recruitment and Retention.** Recruiting and maintaining a highly skilled staff and ensuring adequate knowledge transfer with 65 percent of the federal workforce over 49 years old and 45 percent eligible to retire in the next 5 years.
- **Contract and Project Management Continuous Improvement.** Continuing to further improve contract and project management practices.
- **Cleanup Contract Awards.** Awarding several billion dollars in procurements for most major cleanup contracts across the EM program over approximately the next five years (anticipated to be worth several billion dollars).
- **Infrastructure Modernization.** Managing and addressing infrastructure needs across the EM program.
- **Constructing, Commissioning, and Operating Waste Processing Facilities.** Successfully constructing, commissioning, and operating large, complex, and first-of-a-kind waste processing facilities (e.g., Waste Treatment and Immobilization Project at Hanford, Integrated Waste Treatment Unit at Idaho).
- **New Cleanup Technologies.** Developing and leveraging new cleanup technologies to allow EM to perform its work more safely, more efficiently, and cost-effectively (e.g., addressing highly mobile and persistent contaminants, such as mercury and technicium).

- ***High Risk Contaminated Facilities Cleanup Prioritization.*** Prioritizing and planning for cleanup of highest risk excess contaminated facilities in EM and across the DOE complex (e.g., Y-12 at Oak Ridge).
- ***Uranium Enrichment D&D Strategy.*** Establishing a long-term financing strategy to continue to support uranium enrichment D&D activities.

### **Critical Events and Action Items**

#### **3-months:**

- ***Waste Emplacement Activities at WIPP.*** Disposal of transuranic waste at WIPP has been suspended since the 2014 radiological event at the site. Since then, EM has taken a number of actions to prepare to resume waste emplacement. EM had targeted waste emplacement activities to begin at WIPP in late December 2016. Depending on the outcome of remaining recovery actions, additional time may be needed to ensure the facility can safely resume emplacement operations.
- ***Complete Retrieval of High Level Waste from Hanford Double-Shell Tank (DST) AY-102.*** Tank AY-102 is one of the 28 underground DSTs at Hanford. In 2012, a small amount of waste was discovered leaking from the primary vessel into the annulus, the space between the inner and outer shells, with no indication waste leaked to the environment. Last March, EM and Hanford tank farms contractor Washington River Protection Solutions transferred approximately 95 percent of the waste from AY-102 to another DST. Under an agreement reached with the state of Washington, DOE is required to complete the retrieval no later than March 4, 2017.
- ***Award of New Savannah River Liquid Waste Contract.*** In January-March 2017 timeframe, EM expects to award a new contract to provide liquid waste remediation services at the Savannah River Site. The total estimated value of the contract is up to approximately \$6 billion (B) over the prospective period of performance of up to ten years, including the option periods. The current liquid waste services contract at SRS is held by Savannah River Remediation LLC, and expires on June 30, 2017.

#### **12-months:**

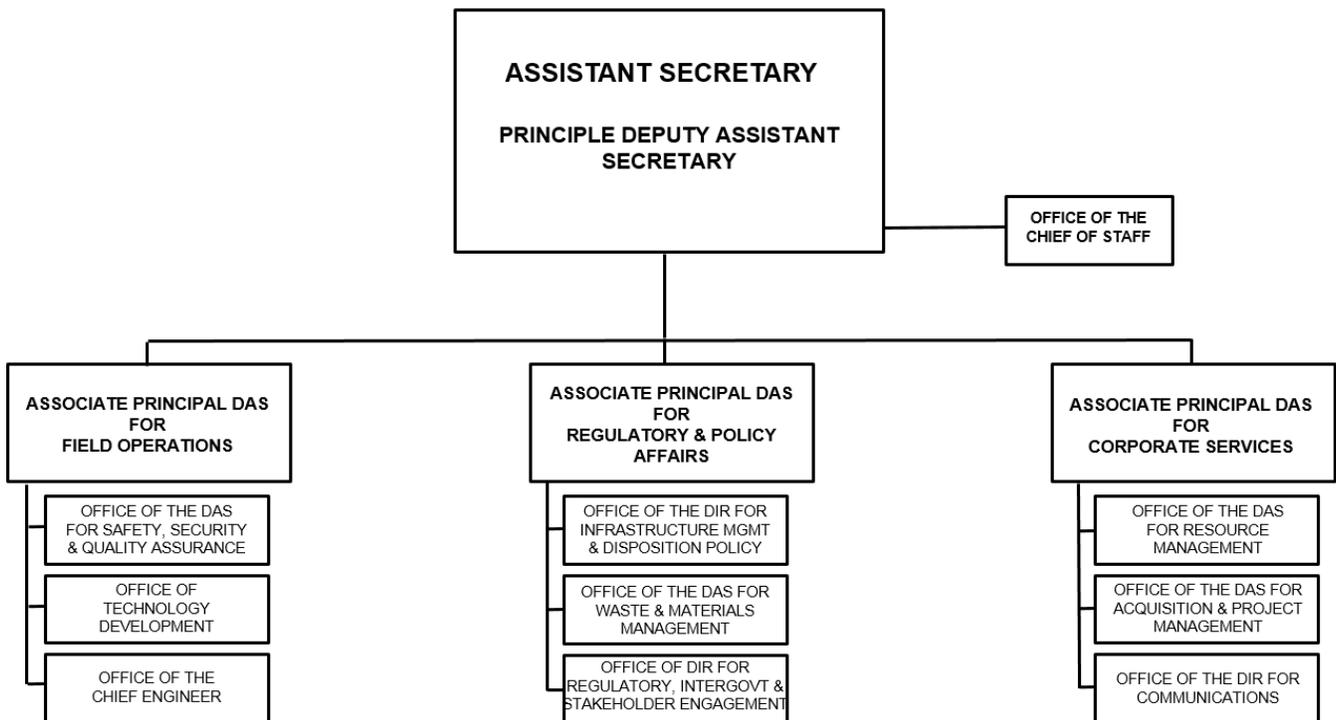
- ***Award of New Paducah Deactivation and Remediation (D&R) Contract.*** In FY-2017, EM expects to award a new contract to provide D&R services at the Paducah Gaseous Diffusion Plant. The new contract is expected to be worth \$1B to \$3B over the total prospective period of performance of ten years, including option periods. The current deactivation and remediation services contract at PGDP is held by Fluor Federal Services, and expires on July 21, 2017.
- ***Award of New Los Alamos Legacy Cleanup Contract.*** In FY-2017, EM expects to award a new contract to continue legacy cleanup mission at the Los Alamos National Laboratory. The total estimated value of the contract is approximately \$1.7B over the prospective ten-year period of performance, including option periods. The current contract is held by Los Alamos National Security, LLC; if all options are exercised, it expires on September 30, 2017.
- ***Complete Demolition of the Plutonium Finishing Plant at Hanford to Slab-on-Grade.*** In July 2016, EM announced that it was unlikely that it would meet the regulatory milestone for completing demolition of PFP by September 30, 2016, due to several factors, including

encountering additional hazards during facility preparation activities than those anticipated. In response, changes in how work was performed were implemented to further strengthen worker safety. EM subsequently reached an agreement with the EPA and the Washington State Department of Ecology to move the milestone to September 30, 2017.

- ***Lawsuit Related to Tank Vapors, Office of River Protection.*** Over longstanding workers concerns about tank vapors, the Attorney General of the State of Washington and Hanford Challenge filed lawsuits on imminent and substantial endangerment under the State’s permitting for RCRA. The trial is currently anticipated to occur in September 2017.
- ***Initiation of Radioactive Operations at the Integrated Waste Treatment Unit (IWTU).*** The IWTU is intended to treat the last of the remaining radioactive liquid tank waste at DOE’s Idaho Site using a steam reforming process. Facility startup has been delayed due to the need to resolve technical issues discovered during cold commissioning. EM notified the state of Idaho that it would not meet the milestone to begin treating radioactive waste at the IWTU by September 30, 2016. EM and Idaho Cleanup Project contractor Fluor Idaho have not identified a revised date for startup.

**Organizational Chart**

## ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT



# Office of Hearings and Appeals

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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. HG promotes excellence and integrity in Departmental management and performance operations through the various adjudications conducted by the Office relating to personnel security clearance eligibility, personnel safety, and regulatory compliance.

### Organization Information

#### Name:

Office of Hearings and Appeals (HG)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

950 L'Enfant Plaza, SW  
Washington, DC 20585

#### Telephone Number:

(202) 287-1566

#### Website:

<http://www.energy.gov/oha/office-hearings-and-appeals>

#### Point-of-Contact E-mail Address:

[fred.brown@hq.doe.gov](mailto:fred.brown@hq.doe.gov)

### Supporting the DOE Mission

The Office of Hearings and Appeals (HG) supports a more economically competitive, environmentally responsible, and resilient U.S. energy infrastructure through its role relating to DOE's Energy Conservation Program for Consumer Products, codified at 10 CFR Parts 430 and 431. Under this program, DOE has established and continues to establish minimum energy efficiency standards for numerous residential and commercial products. These energy efficiency standards not only save money and provide consumers with the benefits of improved, more efficient technology, but results in substantial environmental benefits by reducing carbon emissions. HG has been delegated authority to rule upon Applications for Exception

from the product efficiency standards to ensure that manufacturers will not suffer a serious hardship, gross inequity, or unfair distribution of burdens as a result of compliance.

HG also promotes nuclear security through its role in conducting hearings and issuing decisions under 10 CFR Parts 710 and 712. Both of these programs determine who may handle classified matter or special nuclear material, or have access to nuclear facilities. Part 710 proceedings involve eligibility of DOE employees (contractor and federal) to hold a DOE access authorization (a security clearance). In these proceedings, HG Administrative Judges conduct a hearing on the record, receive evidence, and issue a decision either granting or denying (in the case of an initial applicant), or restoring or revoking (in the case of an incumbent), the individual's security clearance. HG performs a similar function under Part 712, the Human Reliability Program, which establishes standards to ensure that individuals with unescorted access to nuclear materials meet the highest standards of reliability and physical and mental suitability.

HG supports Management and Performance in discharging its responsibilities under 10 CFR Part 708, pursuant to which HG investigates complaints, conducts hearings, and considers appeals filed by contractor employees ("whistleblowers") who allegedly suffer reprisal as a result of making a protected disclosure (e.g. reporting a matter related to public health and safety). In addition, HG's serves as a resource to all DOE components and contractors to explore efficient and cost-effective ways of preventing conflicts and resolving disputes, without the formalities and costs of litigation. HG provides mediation services and promotes the use of dispute prevention and alternative dispute resolution techniques at all levels of the DOE complex.

### **Mission Statement**

HG's mission is to conduct fair and efficient hearings, to issue decisions of the Department of Energy with respect to any adjudicative proceedings which the Secretary may delegate, and to support the use of alternative means to resolve disputes in DOE's activities.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$5.2 million
FY 2016 Enacted Budget	\$5.5 million
FY 2017 Budget Request	\$5.9 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalentents (FTEs): 22.

### **Functions**

HG is the quasi-judicial arm of DOE for conducting hearings and issuing initial Departmental decisions with respect to adjudicative proceedings which the Secretary has delegated. The procedures HG uses vary, depending on the type of case involved. HG procedures are flexible and easily adaptable to new situations to minimize "start-up" times and to produce high-quality work in new areas. HG's procedural regulations are codified at 10 CFR Part 1003. Primary HG areas of jurisdiction include:

- ***Personnel Security, 10 CFR Part 710.*** Under DOE's personnel security program, HG conducts administrative hearings and issues decisions concerning individuals' eligibility to hold a DOE security clearance, for access to classified information or special nuclear material.
- ***Human Reliability Program, 10 CFR Part 712.*** This regulation provides the policies and procedures to ensure that individuals who occupy positions affording unescorted access to certain nuclear materials, nuclear explosive devices, facilities and programs meet the highest standards of reliability and physical and mental suitability. HG conducts hearings and issues recommendations with regard to individuals seeking certification under this program.
- ***Whistleblower Cases, 10 CFR Part 708.*** Under the DOE Contractor Employee Protection Program, 10 CFR Part 708, HG conducts investigations and hearings, and considers appeals concerning whistleblower claims filed by DOE contractor employees.
- ***Freedom of Information Act (FOIA) and Privacy Act Appeals, 10 CFR Parts 1004 and 1008.*** HG considers appeals of agency denials of requests for information under the FOIA and Privacy Act and issues final agency decisions.
- ***Exceptions and Special Redress.*** HG rules upon Applications for Exception filed by firms seeking relief from DOE's energy efficiency standards for consumer products (10 CFR Part 430 and 431). HG also considers petitions for special redress filed by parties requesting relief from DOE regulatory requirements in other miscellaneous proceedings.
- ***Alternative Dispute Resolution.*** HG's Office of Conflict Prevention and Resolution (OCPR) serves as a resource to all DOE components and contractors to explore efficient and cost-effective means of preventing conflicts and resolving disputes, without the formalities and costs of litigation. OCPR directs the DOE Headquarters Mediation Program.
- ***Hydroelectric Production Incentives Program.*** In Section 242 of the Energy Policy Act of 2005, Congress established a program to support the expansion of hydropower energy development through an incentive payment procedure based upon electric energy generated and sold by qualified hydroelectric facilities. Under the Hydroelectric Production Incentives Program, administered by the DOE Office of Energy Efficiency and Renewable Energy, the full or partial denial of an incentive payment may be appealed to HG. HG has adjudicated such appeals since the Program was established in FY 2014.
- ***Alternative Fuel Transportation Program, 10 CFR Part 490.*** Section 133 of the Energy Independence and Security Act of 2007 (EISA, Public Law 110-140) mandates that DOE establish a regulatory program to promote the acquisition of alternative fuel vehicles (AFVs) by State governments and certain alternative fuel providers. Under the Alternative Fuel Transportation Program established by DOE, codified at 10 CFR Part 490, a party seeking an exemption from the AFV purchase requirements may file for an exemption with HG. Since 2000, HG has considered several such requests for exemption filed by State governments and utilities.
- ***Medical and Physical Fitness Qualification Standards.*** In September 2013, DOE established standards for medical, physical performance, training, and access authorizations for protective force (PF) personnel employed by contractors providing security services to

the Department. Under these standards, codified at 10 CFR Part 1046, a PF employee who receives a certification disqualification may request a final review by HG.

- ***Worker Safety and Health Program.*** 10 CFR Part 851 establishes a worker health and safety program to ensure that DOE contractors and their workers operate a safe workplace. Part 851 includes procedures for investigating whether a safety violation has occurred; for determining the nature and extent of any such violation; and for imposing an appropriate remedy or civil penalty. Under section 851.43, a contractor that receives a final notice of violation imposing a civil penalty may petition HG for review of the final notice.
- ***Fact-Finding Reviews and Management Inquiries.*** HG conducts fact-finding reviews and management inquiries on behalf of various Departmental elements, and issues reports of its findings. These fact-finding reviews concern sensitive DOE personnel matters, sometimes at a high level, that may require disciplinary or other remedial action by DOE management.

### **Recent Organization Accomplishments**

HG's recent significant organization accomplishments include:

- ***Personnel Security Decisions.*** The HG average processing time for issuing personnel security decisions (calculated from receipt of the hearing transcript) has dropped 78% in the past 8 years, from a high of 73 days in 2008 to a current average of 16 days.
- ***Freedom of Information Act (FOIA) and Privacy Act Appeals Decisions.*** HG FOIA and Privacy Act average case-processing time is now at 10 working days, less than half of our average for the last ten years. This processing time for FOIA appeals is among the lowest of all Executive agencies.
- ***Mediations.*** In FY 2015, HG conducted an increased number of mediations (18), achieving a settlement rate of 61%. For the first time, over 50% of our mediations were conducted by HG Administrative Judges and mediation staff.
- ***Technology.*** HG has successfully increased its use of technology to reduce costs and its carbon footprint by:
  - Utilizing video-teleconferencing (VTC) to conduct personnel security hearings. Approximately 90% of HG hearings are now held by VTC, resulting in a reduction of travel costs by more than 89% versus 2009 spending. The concomitant decrease in travel time for HG Administrative Judges has resulted in higher productivity.
  - Implementing an electronic case filing system, drastically reducing paperwork, and minimizing printing and photocopying expenses.
  - Adopting WebEx technology for training, greatly increasing government-wide participation, and reducing travel expenses.

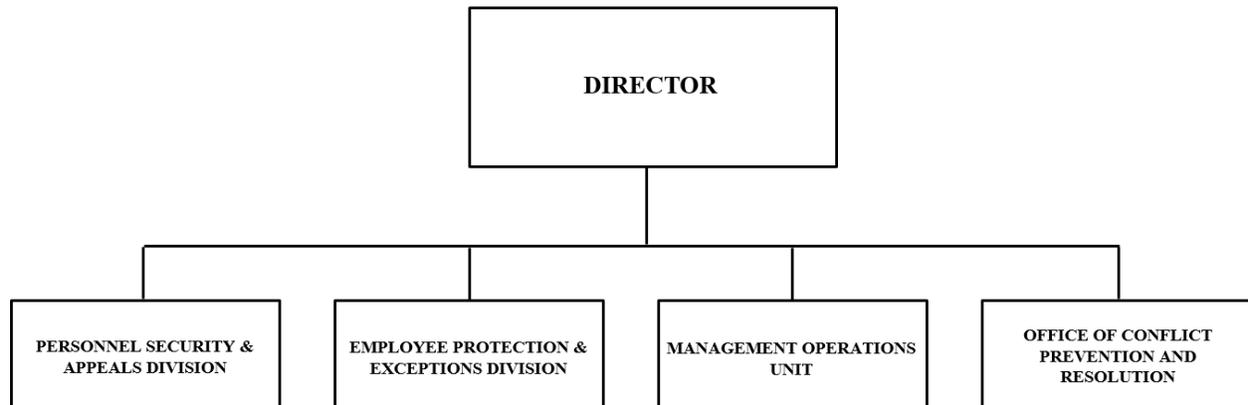
### **Leadership Challenges**

HG's leadership challenges include:

- **Succession Planning.** A large number of retirements are anticipated in the coming 5-10 years, creating a potential challenge in succession planning. HG is currently hiring three new attorneys to help address this challenge.
- **Security Clearance Adjudication.** OPM has an increased backlog of security clearance investigations. As this backlog is reduced, HG will receive an increased number of security clearance cases for adjudication.
- **New Standards Exceptions.** The Office of Energy Efficiency and Renewable Energy continues to adopt new efficiency standards. As the effective dates for these new standards approach, HG will receive an increased number of petitions from appliance manufacturers for exception relief.
- **Alternative Dispute Resolution.** HG is currently focused on enhancing the Alternative Dispute Resolution Program Department-wide; encouraging greater use of mediation; enhancing efficiency and effectiveness of the program; and ensuring more consistency in settlements across the Department. Continued support from DOE leadership is essential to the success of this initiative.

**Organizational Chart**

**OFFICE OF HEARINGS AND APPEALS**



# Office of the Chief Human Capital Officer

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

### Organization Information

**Name:**

Office of the Chief Human Capital Officer (HC)

**Address:**

1000 Independence Avenue SW,  
Washington, DC 20585

**Telephone Number:**

202-586-1234

**Website:**

<http://energy.gov/hc/>

**Point-of-Contact E-mail Address:**

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### **Supporting the DOE Mission**

The Office of the Chief Human Capital Officer (HC) supports DOE's strategic objective of attracting, managing, developing, and retaining the best federal workforce to meet future mission needs. HC supports DOE's mission accomplishment by providing human resources services, management, strategy, and solutions, including analytics; workforce and succession planning; recruitment and hiring; engagement and retention; competency development; training and development; and diversity and inclusion.

### **Mission Statement**

Supporting DOE's mission through workforce services, solutions, and innovations.

## **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$24.5 million
FY 2016 Enacted Budget	\$24.5 million
FY 2017 Budget Request	\$25.4 million

## **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 146.

## **History**

The *Chief Human Capital Officers Act of 2002* required the establishment of Chief Human Capital Officers (CHCO) in the 24 Executive departments and agencies. The DOE CHCO is responsible for the strategic alignment of the DOE workforce to the mission of the Department, and for maintaining and directing its human resource management programs and policies. The CHCO advises and assists agency officials in carrying out Departmental responsibilities of selecting, developing, training, and managing a high-quality federal workforce in accordance with merit-system principles. The CHCO also serves as the chief policy advisor on all human capital management activities and issues.

The CHCO reports to the Under Secretary of Management and Performance. However, as the Chair of the Executive Resources Board (ERB), the CHCO reports to the Secretary and Deputy Secretary directly on ERB matters.

Until recently, DOE's human capital functions were decentralized across the Department, with 18 separate HR Offices aligned to different program offices within DOE. The decentralized service delivery model resulted in duplication of functions, driving up the cost and reducing both the efficiency and effectiveness of the services provided. At the end of FY 2013, DOE's cost for human resources services was \$92.5 million, resulting in an average cost per employee serviced that was three to four times higher than the federal average.

Since FY 2013, HC has been working to adopt a hybrid service delivery model that centralizes accountability for human resources under the CHCO while consolidating operations through the creation of shared service centers (SSC) that are supported by a decentralized approach to customer service and a corporate approach to human capital management programs and strategic support.

Beginning in FY 2016, HC began to restructure the DOE HR line of business and has implemented four SSCs, aligned by the Under Secretary for Management and Performance portfolio, the Under Secretary for Science and Energy portfolio, the Bonneville Power Administration, and the other Power Marketing Administrations, to provide HR services to DOE's workforce. In FY 2017, HC will continue to evaluate options for restructuring and improving HR services provided to the Under Secretary for Nuclear Security/National Nuclear Security Administration. In addition, in FY 2014 and FY 2015, HC lead an effort to restructure the HR operations at Bonneville Power Administration (BPA) in line with the service delivery model as a result of audits by the Inspector General, Office of Personnel Management, and HC. Changes to the hybrid service delivery model have resulted in improved HR effectiveness and lowered the risk of HR related audit findings for the Department.

As part of this implementation, HC initiated several efforts to improve the capabilities of the HR line of business' people, processes, and technology. This, along with the modified structure, has resulted in a reduction of \$23.5 million in cumulative cost for DOE's human resources line of business from FY 2013 to FY 2015, per OMB benchmarking data. This reduction has provided opportunities for Departmental Elements to reinvest in mission priorities. Additional cost savings are expected to be realized as implementation is completed in FY 2017.

### **Functions**

- ***Human Capital Policies and Strategies.*** Develop, implement, and administer human capital policies and strategies throughout the Department, including recruitment; staffing; position management; benefits; employee and labor relations; performance management; and personnel actions processing.
- ***Strategic and Operational Services.*** Provide strategic and operational centralized HR services, including (but not limited to) staffing; recruitment; employee relations; compensation; benefits; position classification and allocation; and performance management.
- ***Legislative and Regulatory Support.*** Seek out and translate legislative and regulatory direction into Departmental strategies, policies, and programs to address DOE human capital needs.
- ***Accountability Audits.*** Conduct human capital accountability audits across DOE to assess HR programs' adherence to legal and regulatory requirements.
- ***Workforce Development Programs.*** Manage workforce development programs and evaluate their effectiveness to ensure they are properly improving performance of the DOE workforce.
- ***Critical Workforce Competency Analysis.*** Provide resources to define, assess, and close critical workforce competency skill gaps across the Department.
- ***Shared Service Center Oversight.*** Provide corporate oversight of the Shared Service Centers and subordinate offices ensuring consultative HR advice and solutions are offered to management officials and employees in all operational aspects of human capital management.

### **Recent Organization Accomplishments**

HC's recent significant organization accomplishments include:

- ***Improving the Growth of DOE Leadership.*** HC has focused on improving leadership competency and strengthening accountability for achieving mission results, while improving executive hiring and onboarding processes, and preparing the workforce for future mission needs. Some of these activities include:
  - ***SES Hiring Reform.*** HC is conducting an evaluation of its comprehensive 120-day time-to-hire model, a streamlined resume-based hiring process for executives that is more aligned to hiring practices found in private companies and has resulted in a significant reduction in time to hire. This model was developed to address DOE's FY 2014 time to hire for SES positions, which was approximately 269 days from the time the job was approved for recruitment until the start date of the executive. To date, the average time-to-hire has been reduced to approximately 170 days.

- *Talent Management Study*. HC is currently implementing recommendations from its FY 2016 Talent Management Study, which was undertaken to identify the resources and investments in training and leadership development activities across the DOE enterprise, and to determine if a consistent strategy could be adopted for the Department. The results from the study and recommendations were shared with leadership in early FY 2016.
- *Leadership Development Rotation Program (LDRP)*. In FY 2016, approximately 13 individuals are participating in the pilot cohort of the Leadership Development Rotation Program (LDRP) that offers DOE federal and laboratory employees opportunities to rotate to laboratory or Federal sites on short-term, project-based assignments. HC and DOE's national laboratories designed and implemented the LDRP to strengthen collaboration between the laboratories and DOE, build a pipeline of emerging leaders who possess a broad understanding of DOE's diverse missions, and expand career development opportunities.
- ***Strengthening DOE's Workforce***. HC has committed to hiring the best talent, developing DOE's employees, and optimizing performance with an emphasis on employee engagement, workplace improvement, and workforce flexibilities. Significant accomplishments include:
  - *Employee Engagement*. DOE-wide initiatives are underway to address the need for increased and sustained efforts to strengthen employee engagement and organizational performance.
    - One focus in FY 2015 and FY 2016 included improving participation in the annual Federal Employee Viewpoint Survey (FEVS) to more accurately measure employee perceptions about the factors that influence employees' desires to remain at the agency and help accomplish the mission. Through focused efforts, DOE successfully increased the Department's response rate over 18% in FY 2015 to a total response rate of 68%, and sustained this participation in FY 2016, with a total response rate of 65%. Additionally, DOE has been recognized as the most improved large agency with respect to employee engagement, as measured by FEVS. In 2016, DOE led all Large Agencies for increases in overall Engagement and all three engagement sub factors, as well as for increases in overall Inclusion and all five Habits of Inclusion
    - HC recently implemented the Workforce Improvement Network (WIN), an employee-driven network focused on identifying workplace improvement opportunities at the local level with an emphasis on improving communications and outreach; health, safety, wellness, and facilities; recreation and employee services; and recruitment, networking, and retention.
  - *Corporate Recruitment*. DOE has historically lacked a corporate approach to recruiting and outreach; as a result, redundancies have been created that increase the cost of outreach and recruitment and make it difficult to measure the effectiveness of the recruiting function. HC established a corporate recruitment and outreach office charged with developing an enterprise-wide strategy and addressing common recruiting challenges. HC continues to assess recruitment processes and maximize the use of hiring flexibilities and innovative solutions to hire talent quickly (e.g., on-the-spot hiring events). HC has also established external recruiting-related partnerships with professional

associations and educational organizations to educate students about DOE's work and to recruit career professionals from diverse talent pipelines.

- ***Improving Human Resources Service Delivery.*** HC has improved HR competency, processes, and systems to provide effective, efficient results and excellent customer service to DOE's federal workforce. HC has improved HR service delivery across the enterprise through the implementation of a new HR servicing model; improvements in hiring efficiency and effectiveness; improved HR information technology tools and systems; strengthened communication; and improved customer service. Examples include:
  - ***HR Service Delivery.*** In FY 2013, HC conducted a Department-wide study that revealed that DOE's HR service delivery model was costly, inefficient, and inconsistent. As a result, HC implemented a plan to transition the Department from a highly decentralized HR servicing model to a hybrid approach that utilizes a blend of shared services and on-site HR expertise to support DOE's diverse missions. HC has also strengthened professional accountability for HR line of business by providing HR delegations directly to HR professionals and aligning reporting relationships for HR personnel under HC. Per OMB benchmarking data, since FY 2013 under the new service delivery model, DOE has reduced total HR cost by \$23.5M, reduced the cost per employee serviced by 26%, improved the servicing ratio, and improved accountability by establishing clear reporting relationships and delegations of authority between HC and HR professionals.
  - ***Human Capital Talent.*** HC has implemented an employee development program to assess and develop the competencies and talent of the HR community across DOE. Competency assessment and skill gap assessments have been conducted for the majority of the DOE HR line of business, and competency-based development plans and training are being provided to improve HC talent and invest in the HR profession.
  - ***HR Information Technology Improvements.*** HC has implemented a number of HR IT improvements to enhance and standardize DOE's HR information tools and systems. This includes the launch of a position classification module to streamline the hiring process, an intranet to centralize HR information, and a customer relationship management tool to track customer interactions and provide transparency into activities across the HR line of business.

## **Leadership Challenges**

HC's leadership challenges include:

- ***Workforce Succession.*** The Department employs approximately 14,000 federal employees spread across 85 sites in 28 states. Over 35% of DOE's current federal employees will be eligible to retire by FY 2020, including many of its most experienced and highly skilled employees. Furthermore, newer generations are greatly underrepresented in the DOE. In order to maintain a workforce with the science, technology, engineering, and mathematic (STEM) skills and experience required to meet DOE's highly complex and technical mission, HC faces the challenge of leading the Department in workforce planning and improvement of outreach and recruitment programs that will be successful in obtaining a new generation of diverse and talented employees.

## **Critical Events and Action Items**

### **3-month events**

- *Senior Executive Service Reform*. Implement and evaluate SES reform activities identified in Executive Order 13714, *Strengthening the Senior Executive Service*, including streamlining the SES hiring process; hiring the best talent in SES leadership positions; strengthening SES development; increasing rotational opportunities; and improving SES accountability, recognition, and awards. While DOE will implement many of these initiatives in FY 2016, DOE must continue to evaluate the effectiveness of its SES programs to make continual improvements in the hiring, development, and recognition of its SES corps.

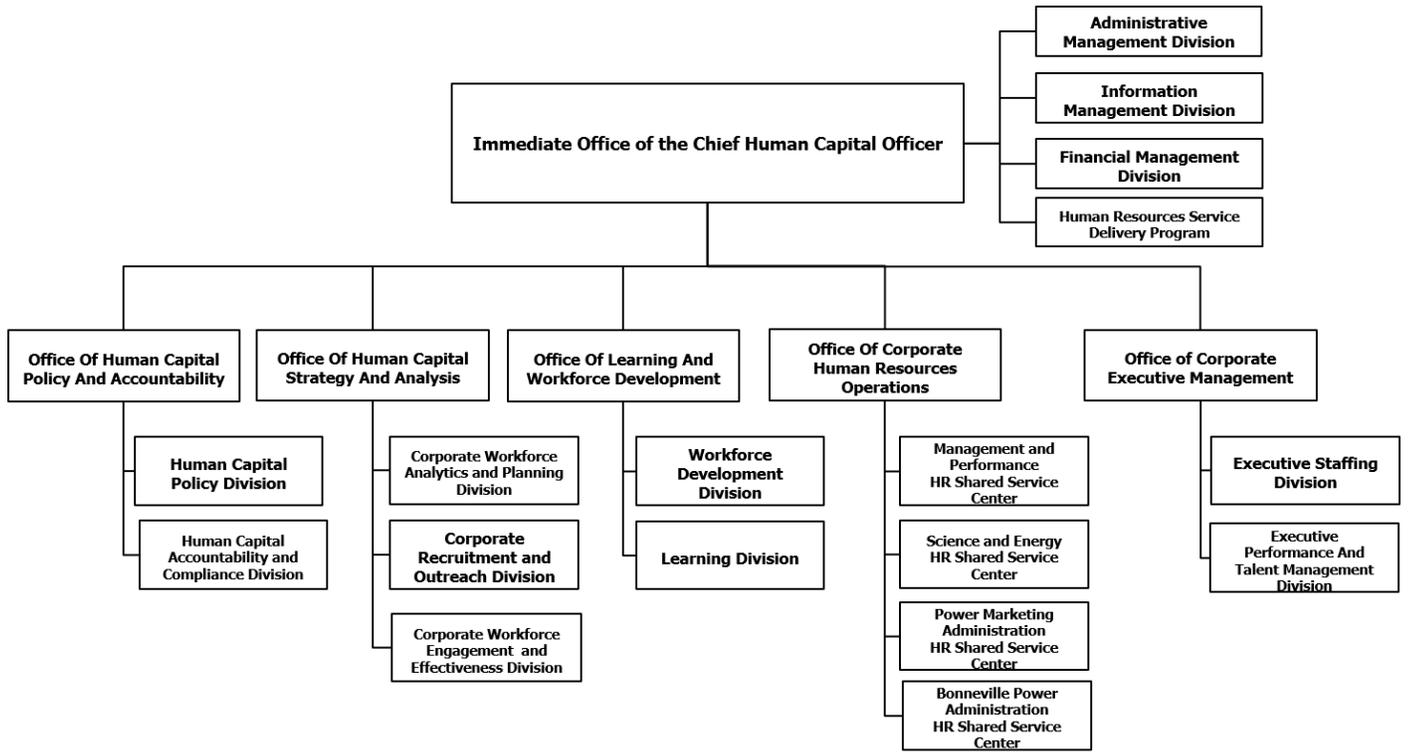
### **6-month events**

- *HR Service Delivery*. Design and implement the HR servicing structure and processes for the National Nuclear Security Administration (NNSA).
- *Talent Management*. Implement identified strategies/recommendations to strengthen Talent Management and Recruitment and Outreach. In FY 2016, HC completed a comprehensive study aimed at uncovering existing barriers to more effective and efficient execution of talent management, and recruitment and outreach programs across DOE.
- *Employee Engagement Action Plan*. Analyze employee feedback data from the Federal Employee Viewpoint Survey to support Departmental and organizational action planning designed to strengthen employee engagement and improve organizational performance.

### **12-month events**

- *Enterprise Learning Management System*. Evaluate and migrate to a new, cloud-based learning management system (LMS) to better meet strategic talent development needs. The LMS must be scalable, contemporary, customizable, user-friendly, and meet Federal talent development requirements.
- *Performance Management*. Evaluate the viability of transitioning DOE to a pay-for-performance personnel system.

# Organizational Chart



# Laboratory Operations Board

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

#### Name:

Laboratory Operations Board (LOB)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-7700

#### Website:

<http://www.energy.gov/office-under-secretary-management-and-performance>

#### Point-of-Contact E-mail Address:

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### Supporting the DOE Mission

DOE operates a nationwide system of 17 National Laboratories that comprise the most comprehensive research network of its kind in the world. A priority for Secretary Moniz has been to reset the relationship between DOE and its National Laboratories. Independent reports issued over the past few years – including the Congressionally-mandated Commission to Review the Effectiveness of the National Energy Laboratories (CRENEL) – have indicated that DOE oversight of its laboratories has become increasingly transactional rather than strategically mission-driven.

The Laboratory Operations Board (LOB) is a key part of the Department's effort to strengthen the partnership between DOE and its National Laboratories. Working in coordination with the Laboratory Policy Council, the LOB provides the

primary enterprise-wide forum (including senior Federal and Laboratory employees) for addressing operational and management improvements in areas that impact the National Laboratories.

### **Mission Statement**

The objectives of the LOB are to strengthen and enhance the partnership between DOE and the National Laboratories, and to improve management and performance in order to more effectively and efficiently execute the missions of the Department and the National Laboratories.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2016 Enacted Budget	\$843K
FY 2017 Budget Request	\$843K

### **Human Resources**

FY2016 authorized Full-Time Equivalent (FTEs): 3

### **Functions**

The LOB is chaired by the Under Secretary for Management and Performance, is managed by a LOB Director, and its membership includes senior Federal and Laboratory employees (list below). The LOB undertakes such studies and activities as its membership proposes and agrees, operating by consensus, and/or as requested by the Secretary or the LPC, which is chaired by the Secretary.

The LOB contributes to an enterprise-wide effort to identify, manage, and resolve issues affecting the management, operations, and administration of the National Laboratories. It facilitates and monitors the Department's implementation of actions to strengthen the DOE-laboratory relationship. The LOB promotes best practices in this area across the enterprise, and works to support DOE programs to: consistently and effectively partner with the laboratories, delegate authorities to the laboratories where warranted, and invest in leadership development for both Federal and laboratory staff.

The LOB is responsible for certain enterprise-wide initiatives, including the following:

- ***CRENEL Implementation.*** The LOB is the primary Departmental entity responsible for tracking the Department's efforts to implement the commitments to strengthen the DOE-laboratory partnership, as outlined in the Department's February 2016 report to Congress in response to CRENEL.
- ***Annual State of the National Laboratories Report.*** This annual report to Congress describes the National Laboratory system, discusses its role and value, and identifies the actions being pursued to enhance the vitality of the Laboratory system to help ensure that it continues to provide best-in-class science and technology research and solutions to meet the near-term and long-term missions of the Department. The LOB facilitates the collaborative effort of the Under Secretary offices to develop and issue this report.

- ***Annual State of General Purpose Infrastructure Report.*** This report is developed by the Infrastructure Executive Committee, a LOB-chartered subgroup.
- ***Biannual Excess Facilities Report*** (Plan for Deactivation and Decommissioning of Nonoperational Defense Nuclear Facilities). This biannual report to Congress is developed by the Excess Contaminated Facilities Working Group, a LOB-chartered subgroup.

### **Recent Organization Accomplishments**

The LOB and Laboratory Policy Council have proven to be successful partnership forums where issues can be raised and solutions can be debated with relevant stakeholders engaged. In reviewing the DOE-laboratory relationship, the CRENEL Commission’s October 2015 report recognized that “there is significant improvement being made in this area ... which has resulted in much more open and effective collaboration between DOE and its laboratories in areas such as strategic planning and overall management. Likewise, the Laboratory Operations Board and other forums for collaboration of various groups within DOE and the laboratories is having very positive results.”

One of the LOB’s early efforts illustrates the enterprise-wide impact of the group: the LOB led a first-ever enterprise wide assessment of general purpose infrastructure across all 17 National Laboratories and NNSA sites and plants, using newly-established metrics to provide a uniform assessment of infrastructure such as utilities, HVAC systems, and office buildings. This initiative provided the basis for an additional \$106 million requested by DOE, and funded by Congress in the FY 2016 appropriations, targeted for general purpose infrastructure projects. In addition, the Secretary directed that each program’s annual proposed investments in infrastructure should be sufficient to halt the growth of deferred maintenance.

The LOB has led DOE on other operations and management issues such as overseeing major changes to the Department’s Directives process, which is responsible for Departmental Orders; clarifying roles and responsibilities at DOE as they relate to interaction with the laboratories; updating Departmental policies on Contractor Assurance Systems and Strategic Partnership Projects and promoting working groups to share best practices; and piloting a new Leadership Development Rotational Program that offers DOE Federal and laboratory mid-level and senior employees opportunities to rotate to laboratory or Federal sites.

### **Leadership Challenges**

- ***Sustained CRENEL Implementation Effort.*** Since DOE issued its February 2016 response to CRENEL, it has made substantial advances in transforming its relationship with the laboratories to a more strategic partnership. While many actions are complete, others are in progress or are ongoing commitments intended to strengthen the partnership.
- ***Continued Focus on Aging Infrastructure and Excess Facilities.*** The LOB-led effort brought an enterprise-wide focus to the challenges of aging DOE infrastructure and excess facilities. However, DOE still has a substantial backlog of deferred maintenance and excess facilities, which were the focus of a 2015 Inspector General report.

### **Critical Events and Action Items**

The LOB holds monthly meetings via VTC, and meets quarterly in person (twice a year in D.C. and twice a year at a laboratory). The quarterly in-person LOB meetings for FY2017 are as follows: December 8-9, 2016 (Jefferson Lab); March 16, 2017 (Washington, D.C.); June 15-16, 2017 (Brookhaven National Laboratory); September 14, 2017 (Washington, D.C).

In addition, the LOB is responsible for the following reports:

- ***Annual State of General Purpose Infrastructure Report.*** The inaugural report will be issued in 2016, and it will be issued on an annual basis by the end of each Fiscal Year.
- ***Annual State of the National Laboratories Report for Congress.*** The inaugural report will be issued in 2016, and it will be issued on an annual basis each fall.
- ***CRENEL effectiveness review.*** The LOB will conduct a review of the effectiveness of CRENEL Implementation before February 2018.
- ***Biannual Excess Facilities Report.*** The inaugural report will be issued in 2016, and the second report is due by March 2018.

### **Organizational Overview**

The LOB membership includes:

- Under Secretary for Management and Performance (Chair)
- Director of the Laboratory Operations Board
- Deputy Under Secretary for Science and Energy
- Chief Operating Officer (or as designated by the Administrator), National Nuclear Security Administration
- Associate Administrator for Safety, Infrastructure, and Operations, National Nuclear Security Administration
- Chief Operating Officer (or as designated by the Director), Office of Science
- Chief Operating Officer (or as designated by the Assistant Secretary), Office of Energy Efficiency and Renewable Energy
- Chief Operating Officer (or as designated by the Assistant Secretary), Office of Environmental Management
- Chief Operating Officer (or as designated by the Assistant Secretary for Fossil Energy), National Energy Technology Laboratory
- Chief Operating Officer (or as designated by the Assistant Secretary), Office of Nuclear Energy
- Director, Office of Management
- Associate Under Secretary (or as designated by the Associate Under Secretary), Office of Environment, Health, Safety, and Security
- Four representatives from the National Laboratories, including the Chair of the National Laboratory Chief Operating Officers group and the Chair of the National Laboratory Chief Research Officers group
- Chair of the Field Management Council
- One contractor representative from a Management and Operating contractor

# Office of Legacy Management

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

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

**Strategic Objective 9** – Manage assets in a sustainable manner that supports the DOE mission.

### Organization Information

**Name:**

Office of Legacy Management (LM)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-7550

**Website:**

<http://energy.gov/lm>

**Point-of-Contact E-mail Address:**

[tony.carter@hq.doe.gov](mailto:tony.carter@hq.doe.gov)

### Supporting the DOE Mission

The Office of Legacy Management (LM) supports the DOE mission and Goal 3 of the Strategic Plan in the following areas:

- **Protect human health and the environment.** LM activities include managing the long-term surveillance and maintenance at sites where remediation has been essentially completed, allowing the Office of Environmental Management to concentrate its efforts on continuing to accelerate cleanup and site closure, resulting in reduced risks to human health and the environment and reduced landlord costs.
- **Preserve, protect, and share records and information.** LM activities include providing a central records management capability. This work directly supports the administration of the Energy Employees Occupational Illness Compensation Program Act (EEOICPA) and is responsive to Freedom of Information Act

(FOIA) and Privacy Act (PA) requests. This enables more efficient operation of the other activities and is needed to defend the Department against future liability claims.

- **Safeguard Former Contractor Workers' Retirement Benefits.** LM funds pensions and post-retirement benefits (medical and life insurance) for over 12,000 former contractor workers and their spouses. By managing these activities, the Legacy Management program enables the Department to focus on further risk reduction by remediating other sites.
- **Optimize the use of lands and assets.** LM activities promote more efficient management of remediated resources. This allows more resources to be focused on further risk reduction.
- **Sustain management excellence.** In February 2007, the Office of Management and Budget (OMB) recognized LM as a High Performing Organization (HPO) for its accomplishing its mission in an effective and efficient manner. LM's designation was only the second HPO in the federal government.
- **Engage the Public, Government, and Interested Parties.** LM provides outreach to the public, intergovernmental collaboration, and effective dialog with tribal nations. Across the organization, LM management and staff recognize that engaging the public and governmental organizations is critical to achieving nearly all organization objectives.

LM has control and custody for legacy land, structures, and facilities, and is responsible for maintaining them at levels consistent with Departmental long-term plans.

### **Mission Statement**

The mission of the LM program is to fulfill the Department of Energy's post-closure responsibilities and ensure the future protection of human health and the environment.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$171.8 million
FY 2016 Enacted Budget	\$167.2 million
FY 2017 Budget Request	\$154.3 million

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 64.

### **History**

LM was first established as a stand-alone office by DOE in December 2003 to demonstrate its commitment to reducing the environmental consequences of past actions and expedite the cleanup of its sites. The creation of LM also allowed the Department to recognize and separate long-term surveillance and maintenance from cleanup project schedules and missions in order to demonstrate its commitment to the long-term care of sites that no longer have on-going missions.

### **Functions**

- **Long-Term Surveillance and Maintenance.** Protects human health and the environment through effective and efficient long-term surveillance and maintenance.
- **Legacy Records and Information Management.** Preserves, protects, and makes accessible legacy records and information.

- **Work Force Management.** Supports an effective and efficient work force structured to accomplish departmental missions.
- **Worker Pension and Medical Benefits.** Implements departmental policy concerning continuity of worker pension and medical benefits.
- **Legacy Land and Asset Management.** Manages legacy land and assets, emphasizing safety, reuse, and disposition.
- **Community Impact Mitigation.** Mitigates community impacts resulting from the cleanup of legacy waste and changing departmental missions.
- **Legacy Land and Asset Liaison.** Actively acts as liaison and coordinates all policy issues with appropriate departmental organizations.

### **Recent Organization Accomplishments**

LM's major accomplishments include:

- **Environmental Justice Strategy.** LM completed revisions and updates to an Environmental Justice Strategy in September 2016. The new strategy, developed through a Department-wide effort led by our Environmental Justice (EJ) Task Force, will guide the Department's efforts to fully integrate EJ throughout the DOE complex.
- **Navajo Nation Stakeholder Coordination.** In April 2016, LM held a series of very successful interactions with community members on the Navajo Nation, including a scoping meeting for National Environmental Policy Act compliance in Tuba City, Arizona; a two-day meeting with the federal agencies in the Five-Year Navajo Plan; a series of site tours; and a public open house at the Monument Valley, Utah, High School.
- **Abandoned Uranium Mines.** LM has succeeded in leveraging the 2014 Defense Related Uranium Mines report to Congress into a multi-agency collaborative effort to begin to address the legacy of abandoned uranium mines. This proactive approach is designed to avoid or minimize litigation and result in a more timely cleanup.
- **Uranium Leasing Program.** LM administers the Department's Uranium Leasing Program (ULP). DOE has awarded ten-year leases on 31 of 32 uranium lease sites to the private sector for the exploration, development, and production of uranium and vanadium ores. These lease tracts are located in the Uravan Mineral Belt in southwestern Colorado, between the communities of Gateway and Egnar, Colorado. The lease activity, in existence since the 1960's, has varied over the years based on the market value of uranium and vanadium ores. The production royalty bids, based on the highest royalty percentage bid on the fair-market value of ores produced, range from 7.67 to 36.6 percent of fair-market value that will be paid to the U.S. government as royalties. These 31 leases will help to promote domestic uranium mining.
- **Climate Change Documentary.** The Medical University of South Carolina, the Department of Energy, Allen University, and South Carolina Educational Television (ETV) produced and distributed a made-for-television dialogue on climate change and its impacts across the United States. Moderated by CNN Chief National Correspondent John King and featuring a diverse panel of experts on climate change and its impacts, *Climate Change: A Global Reality* first aired on ETV in July 2015.

- ***Licensing Support Network Electronic Information System.*** DOE's investigation of the Yucca Mountain site and its development of a license application generated massive amounts of technical and scientific information, as well as extensive analyses of that information. The Licensing Support Network document collection (LSNdc) contains 3.65 million documents, comprising more than 34 million pages of information. The LSNdc is an electronic information system created to support the Yucca Mountain License Application proceedings, and was determined to be a permanent record by the National Archives and Record Administration (NARA). In an effort to ensure the preservation of this historical and unique scientific collection of records, LM recently mitigated potential technical risk by migrating the LSNdc from legacy hardware to a more modern, supportable platform located at the Legacy Management Business Center in Morgantown, West Virginia.

### **Leadership Challenges**

LM's leadership challenges include:

- ***Uranium Leasing Program Injunction.*** Get the Court-ordered injunction on the Uranium Leasing Program lifted.
- ***High Performance Organization Designation.*** Continue to operate in a manner commensurate with the organization's designation as a High Performing Organization, including achieving staffing levels, maintaining an appropriate federal grade structure (13.0 average), and meeting program direction targets.

### **Critical Events and Action Items**

#### **3-month events**

- (b) (5)

#### **6-month events**

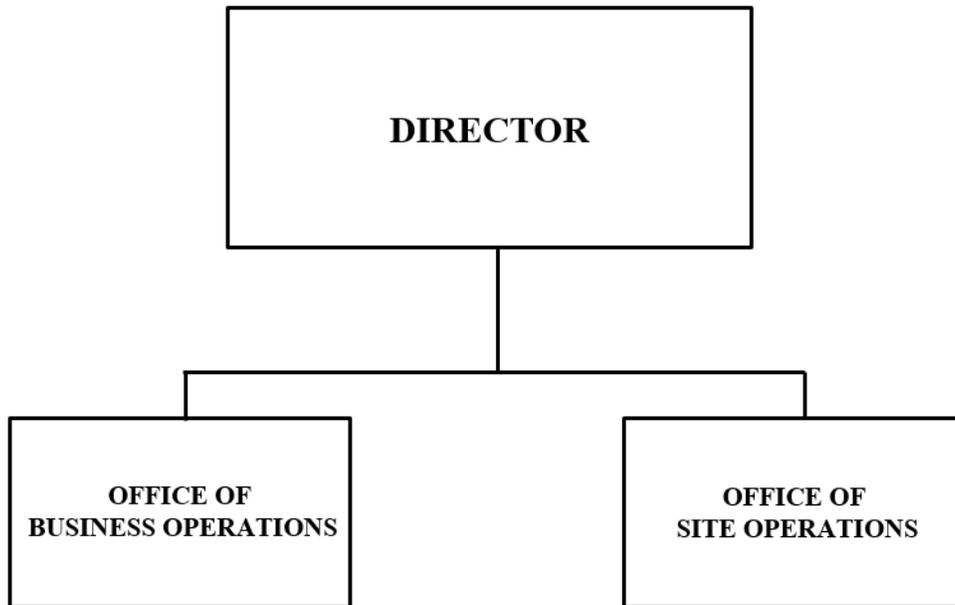
- The 10<sup>th</sup> Annual Environmental Justice Conference (March 2017).

#### **12-month events**

- The Grand Junction, Colorado 75<sup>th</sup> Anniversary and Long Term Surveillance and Maintenance Conference to be held at the site in Spring of 2018. Planning will begin in 2017.

Organizational Chart

# OFFICE OF LEGACY MANAGEMENT



# Office of Management

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

**Name:**

Office of Management (MA)

**Address:**

1000 Independence Avenue, SW  
Washington, DC 20585

**Telephone Number:**

202-586-2550

**Website:**

<http://management.energy.gov>

**Point-of-Contact E-mail Address:**

[laurie.morman@hq.doe.gov](mailto:laurie.morman@hq.doe.gov)

### Supporting the DOE Mission

The Office of Management (MA) supports the DOE mission by establishing policy and providing oversight for approximately \$25 billion in annual procurement obligations, \$85 billion in real property inventory, and \$74 million for DOE's aviation fleet. MA also provides procurement services to DOE headquarters organizations and serves as the Department's corporate lead for sustainability. Administrative functions include the management of headquarters facilities, executive correspondence control, Secretarial scheduling and advance, management of Departmental directives, and the delivery of other administrative services critical to the Department. MA also fulfills the statutory responsibilities of the Chief Freedom of Information Officer and the Department's Senior Procurement Executive.

## Mission Statement

Assure the effective management and integrity of Department of Energy programs, activities, and resources by developing and implementing Department-wide policies and systems in the areas of aviation management, acquisition management, asset management, sustainability, Freedom of Information, conference management, and administrative services. Provide a safe and environmentally secure environment for all HQ employees through the deployment of a disciplined Occupant Emergency Plan.

## Budget

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$62.9 million
FY 2016 Enacted Budget	\$65.0 million
FY 2017 Budget Request	\$59.1 million

## Human Resources

FY 2016 Authorized Full Time Equivalents (FTEs): 226.

## Functions

- ***Policy, Procedure and Standards Management.*** Develops, coordinates, and facilitates implementation of Department-wide policies, procedures, standards, and systems for all procurement; financial assistance; property; facilities and asset management; contractor human resource management; and sponsored strategic programs.
- ***Acquisition and Financial Assistance Services.*** Provides acquisition and financial assistance services to Headquarters program and staff offices.
- ***Emergency Response Designated Official.*** Serves as the Secretary's Designated Official for Headquarters Emergency Response.
- ***Emergency Planning.*** Prepares and maintains Occupant Emergency Plans for all Headquarters facilities.
- ***Real Property Officer.*** Serves as the Department's Real Property Officer.
- ***Senior Procurement Executive.*** Serves as the Department's Senior Procurement Executive.
- ***Aircraft Management.*** Provides recommendations to the Secretary of Energy for the safe, efficient, and reliable management of aircraft use by DOE. Approves the acquisition and disposal of DOE aviation assets.
- ***Sustainability Leadership.*** Provides overall leadership for the sustainability in Departmental operations.
- ***Budget and Administrative Support Services.*** Provides budget and administrative support services for the Office of the Secretary and other Departmental Elements.
- ***Document Management.*** Provides the central repository for all official documents of the Office of the Secretary; provides institutional memory for key Departmental actions and

decisions; provides advisory committee management support; manages Freedom of Information Action activities; serves as the Department's Federal Preservation Officer; and manages correspondence addressed to or sent from the Office of the Secretary.

- ***Directives System.*** Manages the Departmental directives system, which is DOE's mechanism for issuing policy requirements to DOE organizations and, in some cases, DOE contractors.
- ***Delegation of Authority.*** Manages the delegation of authority system.
- ***Conference Management.*** Manages the Departmental conference management activities.
- ***Travel Management.*** Manages official travel and establish policies and procedures with respect to employees travel and relocation allowances under 5 U.S.C., Chapter 57, and the Federal Travel Regulation.
- ***Exchange Visitor Program Management.*** Manages DOE participation in the Department of State's Exchange Visitor (J-1) Program.

### **Recent Organization Accomplishments**

MA's recent significant organization accomplishments include:

- ***Contractual Obligations Management.*** Provided successful oversight and management of contractual obligations, including over 13,000 transactions by approximately 630 contracting and procurement specialists across the Department for FY 2015.
- ***Exceeded Competitive Contracting Actions.*** Achieved a competition contracting percentage of 93% – the highest of all federal agencies.
- ***Increased Performance-Based Acquisitions.*** Incorporated Performance-Based Acquisition methodology into 86.4% of all eligible contract obligations – one of the highest in the Federal government.
- ***Freedom of Information Act Reductions.*** Reduced the FOIA backlog by 17% in FY 2016, exceeding the 10% reduction target.
- ***Requirements Development Reform.*** Reformed requirements development process for the Department.
- ***International Standard for Business Aircraft Operations (IS-BAO) Implementation.*** Leading efforts to implement the International Standard for Business Aircraft Operations (IS-BAO) for all DOE field element aviation operations. To date, the Nevada Field Office has been awarded Level III (the highest certification level) and the Office of Secure Transportation has achieved Level II certification. Additional DOE/NNSA aviation elements have committed to beginning the certification process beginning in FY 2017.
- ***Workplace Improvements.*** Implemented a variety of workplace improvements for the DOE Headquarters facilities, including employee collaboration centers at both Forrestal and Germantown.
- ***Revised Asset Management Plan.*** Completed revision of the Department's Asset Management Plan to incorporate both real and personal property; establish Departmental goals and guiding principles; and outline position responsibilities for property management.

- ***Real Property Efficiency Plan.*** Published the Department’s first Real Property Efficiency Plan outlining current and future planned actions in meeting the Office of Management and Budget’s Reduce the Footprint and Freeze the Footprint (RTF/FTF) goals.
- ***Real Property Alignment Improvements.*** Improved alignment of real property asset portfolio to meet current and future mission needs by incorporating major modifications to the Facilities Information Management System (FIMS). Modifications included the ability to assign core capabilities; detailed space types; contamination categories; condition and functional assessments; and cost estimates for improvements at an asset level.

### **Leadership Challenges**

MA’s leadership challenges include:

- ***Achieving Sustainability Goals.*** Achievement of sustainability goals competes with funding for mission and other requirements including deferred maintenance.
- ***Sale/Exchange of the Forrestal Complex.*** H.R. 4487, which passed the House and is under consideration in the Senate, contains language directing the replacement of the Department of Energy Headquarters through a sale or exchange of the Forrestal Complex.
- ***Aging Infrastructure.*** Given that much of DOE’s property portfolio reflects an aging infrastructure originating in the 1940s as part of the Manhattan Project, the challenge is to sustain, modernize, and effectively align real property assets with current and future mission requirements. DOE’s portfolio includes approximately 6.6 million gross square feet of excess, unutilized, and underutilized facilities, including approximately 5,000 excess contaminated facilities (nuclear reactors, chemical separation facilities, hot cells, and radiological laboratories).
- ***Oversight of Contractor Pension and Medical Benefit Plans.*** Departmental oversight of facility management contractor pension and medical benefit plans’ increasing costs and liabilities; volatility and unpredictability of defined benefit pension plan assets; and associated complex legal and tax issues create programmatic, acquisition, and financial management challenges for the Department.

### **Critical Events and Action Items**

#### **3-month events**

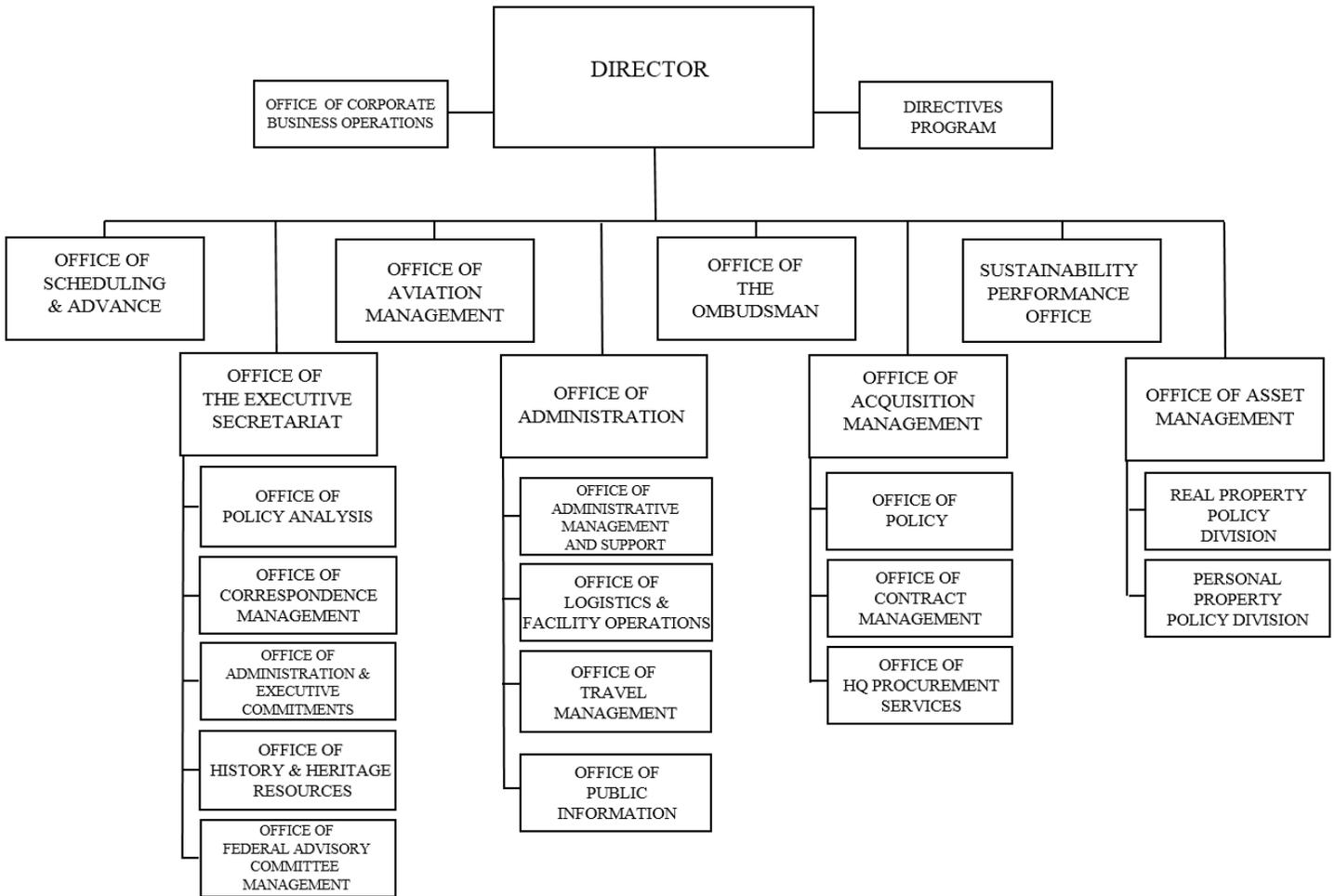
- Develop and publish the statutorily-required annual Conference Activities Report (January 2017).
- Release of the 2016 DOE Climate Adaptation Plan, in coordination with Energy Policy and Systems Analysis (EPSA) and other DOE offices.
- Complete end of year sustainability reporting to Office of Management and Budget/Council on Environmental Quality.

#### **6-month events**

- Finalize annual update to the Real Property Efficiency Plan.
- Complete annual Strategic Sustainability Performance Plan.

**Organizational Chart**

# OFFICE OF MANAGEMENT



# Office of Project Management Oversight and Assessments

## SUPPORTING THE DOE MISSION

### STRATEGIC PLAN GOAL 3: MANAGEMENT AND PERFORMANCE

Position the Department of Energy to meet the challenges of the 21<sup>st</sup> 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.

### Organization Information

#### Name:

Office of Project Management Oversight and Assessments (PM)

#### Address:

1000 Independence Avenue, SW  
Washington, DC 20585

#### Telephone Number:

202-586-3524

#### Website:

<http://www.energy.gov/projectmanagement/office-project-management-oversight-assessments>

#### Point-of-Contact E-mail Address:

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### Supporting the DOE Mission

The Office of Project Management Oversight and Assessments (PM) supports one of the Department's Agency Priority Goals, which is to "increase the focus on efficient and effective management across the DOE enterprise and improve performance in the areas of environmental cleanup, construction project management, and cybersecurity." In support of this goal, this office provides the project management policy, guidance, and oversight to enable senior leadership to make informed decisions for capital asset projects within a mature project management framework and governance. PM monitors the Department's progress using a project management success metric, which states, "On a three-year rolling basis, complete at least 90% of departmental projects baselined since the start of FY 2008

within the original scope baseline and not to exceed 110% of the cost as reflected in the performance baseline established at Critical Decision (CD)-2,” which is the decision point where project scope, cost and schedule commitments are established.

The following is an illustrative example of success PM has had in improving the effectiveness of project management performance across the Department. For the first time, since establishing a project management success metric, PM is forecasting a FY16 project management success rate of 91% for capital construction projects, exceeding the 90% goal established in 2008. This follows after decades of noted poor performance documented in numerous GAO reports, which highlighted project cost overruns nearly 50% of the time. With enhanced leadership support, reinforced with improved project management policies, the Department has turned the corner in the last several years, with PM playing a key leadership role.

### **Mission Statement**

PM’s mission is to provide corporate oversight and managerial leadership, and assist in the development and implementation of Department-wide policies, procedures, programs, and management systems pertaining to project management, professional development, and related activities.

The office is charged with providing the DOE senior leadership with timely, reliable, and credible information to enable the best informed project execution decisions.

### **Budget**

<b>Fiscal Year</b>	<b>Budget</b>
FY 2015 Enacted Budget	\$13.7 million
FY 2016 Enacted Budget	\$14.3 million
FY 2017 Budget Request	\$18.0 million

NOTE: Prior to FY 2017, funding for Office of Project Management Oversight and Assessments functions was included in the Office of Management budget and did not include the transfer of mission and functions from the Office of Environmental Management (EM) to PM to conduct Project Peer Reviews (PPRs) for EM projects \$100 million and greater.

### **Human Resources**

FY 2016 Authorized Full Time Equivalents (FTEs): 34.

### **History**

In FY 2015, the Under Secretary for Management and Performance reorganized and consolidated parts of the Office of Management (MA) and the Office of Environmental Management (EM) into one organization and created a new office entitled the Office of Project Management Oversight and Assessments (PM). This new office organizationally reports directly to the Under Secretary for Management and Performance. In addition, the Director of PM is directly accountable to the Deputy Secretary when performing the function as the Executive Secretariat of the Energy Systems Acquisition Advisory Board (ESAAB) and the Project Management Risk Committee (PMRC). The Deputy Secretary chairs the ESAAB and the PMRC, and the PMRC is the senior project management advisory committee to the ESAAB and other senior leaders.

This reorganization was prompted by the Secretary’s “Improving the Department's Management of Projects” Memorandum, dated December 1, 2014. It elevated the function and organizational position of project management. The memorandum also directed each Under Secretary to establish, if it did not already exist, a discrete project assessment office that does not have line management responsibility for project execution. These assessments offices conduct peer reviews of projects in their purview that have a total project cost of \$100 million or greater (or lower as deemed appropriate by the Under Secretaries). These offices were established to model the review process already established in the Office of Science, which is recognized as a best practice.

### **Functions**

- ***Executive Secretariat of the Energy Systems Acquisition Advisory Board and Project Management Risk Committee.*** Serve as a member and as Executive Secretariat of the Energy Systems Acquisition Advisory Board (ESAAB) and the Project Management Risk Committee (PMRC) for the Deputy Secretary. The Board and Committee reviews all capital asset projects with a Total Project Cost (TPC) of \$100 million or greater, focusing on those projects at risk of not meeting their performance baselines, and the Board makes critical decisions for capital asset projects with a TPC of \$750 million or greater.
- ***Independent Project Peer Reviews.*** Conduct independent Project Peer Reviews (PPRs) annually of EM active capital asset projects with a TPC of \$100 million or greater, on each project.
- ***External Independent Reviews.*** Conduct External Independent Reviews (EIRs) that validate the project performance baselines (to include scope, cost, and schedule) of all capital asset projects with a TPC of \$100 million or greater at specific critical decision gates.
- ***Independent Cost Reviews and Estimates.*** Conduct Independent Cost Reviews (ICRs) and/or prepare Independent Cost Estimates (ICEs) at critical decisions and upon re-baselining for capital asset projects with a TPC of \$100 million or greater, as required by statute.
- ***Earned Value Management System Certification and Surveillance Reviews.*** Conduct initial certification and periodic surveillance reviews to ensure contractor Earned Value Management Systems (EVMS), a project controls management system, for capital asset projects comply with industry standards (ANSI/EIA-748) and in accordance with contract requirements.
- ***Project Management Policy, Guidance and Oversight.*** Provide DOE policy, guidance and oversight for project management.
- ***Project Reporting.*** Manage the Department’s Project Assessment and Reporting System (PARS IIe), driving improvements. Maintain auditable project data central repository. Provide monthly project status report, extracted from PARS IIe, for senior leaders with independent assessments of capital asset projects with a TPC of \$10 million or greater.
- ***Project Documentation.*** Maintain independent central repository of all relevant project data in PARS IIe and project management performance metrics and share with senior leadership, OMB, GAO, and appropriate others, as requested.

- ***Project Management Career Development Program.*** Manage the Project Management Career Development Program (PMCDP), along with associated (17) mandatory and (13) elective courses, to provide the professional development, continuous training and certification of our Federal Project Directors (FPDs). Co-chair Certification Review Board, certifying FPDs at appropriate level.

### **Recent Organization Accomplishments**

PM's recent significant organization accomplishments include:

- ***Established the Project Management Risk Committee.*** As Executive Secretariat, facilitated the establishment of the PMRC. Reviewed 15 project critical decisions, two baseline change proposals, and several other actions over the past year. Also, reviewed 19 project peer review (PPR) charge memorandums and associated review committee rosters for upcoming reviews, and received out-briefs upon completion of each review.
- ***Strengthened the Energy Systems Acquisition Advisory Board.*** As Executive Secretariat, facilitated the strengthening of the ESAAB, transforming it from an ad hoc body to an institutionalized Board. Supported 14 ESAAB meetings in FY 2016.
- ***Created and Update Departmental Project Management Documentation.*** Created or updated critical Departmental directives, policies, guides, standard operating procedures, technical standards, and other documents to include DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.
- ***Independent Cost Reviews and Estimates.*** Conducted 24 Independent Cost Estimates (ICEs), Independent Cost Reviews (ICRs), and Independent Government Cost Estimates (IGCEs) in support of Critical Decisions (CDs) and Baseline Change Proposals (BCPs).
- ***Earned Value Management System Certification and Surveillance Reviews.*** Conducted four Earned Value Management System (EVMS) certification and surveillance reviews. Developed the EVMS Interpretation Handbook to synthesize and consolidate the extensive body of knowledge documents used in earned value reviews and provide consistency to reviews.
- ***Project Peer and Independent Project Reviews.*** Supported the major Programs by participating in 14 Project Peer Reviews (PPRs) and Independent Project Reviews (IPRs).
- ***Training Curriculum Delivery.*** Transitioned courses from classroom to virtual learning platform delivery, as appropriate. Developed on-line versions of "Project Management Essentials," "Planning for Safety," and "Facilitating Conflict Resolution" classes. This practice is a more efficient and cost effective way to reach a larger segment of the DOE professional workforce.
- ***Professional Development Program.*** Established a rigorous professional development program to provide Federal Project Directors (FPDs) with the experience, training, and knowledge needed to competently manage complex projects. To date, the Certification Review Board (CRB) has certified 311 FPDs, and 98% of projects are led by an appropriately certified FPD at the start of construction.
- ***Research and Technical Publication Assistance.*** Provided key members on two research and technical report publications sponsored by the Construction Industry Institute: (1)

Critical Factors for Commissioning and Start-Up; and (2) Successful Delivery of Mega Projects.

- **Annual Project Management Workshop.** Hosted annual DOE Project Management Workshop, attended by approximately 350 federal employees and contractors, and continued to facilitate the exchange of best practices and lessons learned.

### **Leadership Challenges**

PM's leadership challenges include:

- **Financial and Personnel Resources.** As a new office reporting to the Under Secretary for Management and Performance, PM needs to transfer, establish, obtain, and maintain adequate personnel and financial resources to address the dynamic priorities and improve project management complex-wide.
- **Improve Project Management Controls.** Improving project management controls – such as the Earned Value Management System (EVMS) employed by DOE contractors across the DOE complex – to ensure sustained, timely and reliable monthly project cost and schedule information.
- **Strengthen Project Assessment and Reporting.** Enhancing capabilities of Department's PARS II to provide efficient and effective cost/schedule analysis capabilities to highlight more current project issues.
- **EM Project Peer Reviews.** Leading a newly instituted process of conducting EM Project Peer Reviews (PPRs) of projects \$100 million or greater.
- **Improve the Project Management Career Development Program.** Improving PMCDP to enhance the skillset of DOE Federal Project Directors and project controls workforce.
- **Project Management Directives.** Maintaining PM directives (one Order and 18 Guides), incorporating all recent Secretarial policy memorandums.
- **Project Management Continuous Improvement.** Sustaining continuous improvement momentum in project management, senior leader engagement, and conformance with all Departmental project management requirements.
- **GAO High-Risk List.** Continuing efforts for removal from the GAO High-Risk List (for "Contract (Project) Management) for projects greater than \$750 million in the face of lingering, problematic "legacy projects," i.e., Waste Treatment and Immobilization Plant (WTP), Mixed Oxide Fuel Fabrication Facility (MOX), and others.

### **Critical Events and Action Items**

#### **3-month events**

- Brief the Deputy Secretary on GAO's High-Risk List to include the background, recent policy changes, project management success metrics, and strategy forward.

#### **6-month events**

- Begin holding Quarterly ESAAB meetings to review all capital asset projects \$100 million or greater.

**12-month events**

- Deputy Secretary will hold an Energy Systems Acquisition Advisory Board (ESAAB) meeting to review and approve Critical Decision (CD)-2/3, Approve Performance Baseline and Approve Start of Construction, of the Uranium Processing Facility (UPF) project.

**Organizational Chart**

**OFFICE OF PROJECT MANAGEMENT  
OVERSIGHT & ASSESSMENTS**

