

Department of Energy

FY 2020 Congressional Budget Request



Other Defense Activities
Departmental Administration
Inspector General
International Affairs
Working Capital Fund
Crosscutting Activities
Pensions

Department of Energy

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Volume 2

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FUNDING BY APPROPRIATION

	(\$K)				
	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted	
				\$	%
Department of Energy Budget by Appropriation					
Energy and Water Development, and Related Agencies					
Energy Programs					
Energy Efficiency and Renewable Energy	2,321,778	2,379,000	343,000	-2,036,000	-85.6%
Electricity Delivery and Energy Reliability	261,329	0	0	0	N/A
Electricity	0	156,000	182,500	+26,500	+17.0%
Cybersecurity, Energy Security, and Emergency Response	0	120,000	156,500	+36,500	+30.4%
Nuclear Energy	1,205,056	1,326,090	824,000	-502,090	-37.9%
Fossil Energy Programs					
Fossil Energy Research and Development	726,817	740,000	562,000	-178,000	-24.1%
Naval Petroleum and Oil Shale Reserves	4,900	10,000	14,000	+4,000	+40.0%
Strategic Petroleum Reserve	260,716	235,000	174,000	-61,000	-26.0%
Strategic Petroleum Account	8,400	10,000	27,000	+17,000	+170.0%
Northeast Home Heating Oil Reserve	6,500	10,000	0	-10,000	-100.0%
Total, Fossil Energy Programs	1,007,333	1,005,000	777,000	-228,000	-22.7%
Uranium Enrichment Decontamination and Decommissioning (D&D) Fund	840,000	841,129	715,112	-126,017	-15.0%
Energy Information Administration	125,000	125,000	118,000	-7,000	-5.6%
Non-Defense Environmental Cleanup	298,400	310,000	247,480	-62,520	-20.2%
Science	6,259,903	6,585,000	5,545,972	-1,039,028	-15.8%
Advanced Research Projects Agency - Energy	353,314	366,000	-287,000	-653,000	-178.4%
Nuclear Waste Disposal (26M in DNWF 050)	0	0	90,000	+90,000	N/A
Departmental Administration	189,652	165,858	117,545	-48,313	-29.1%
Indian Energy Policy and Programs	0	18,000	8,000	-10,000	-55.6%
Inspector General	49,000	51,330	54,215	+2,885	+5.6%
International Affairs	0	0	36,100	+36,100	N/A
Title 17 - Innovative Technology Loan Guarantee Program	30,892	13,000	-160,659	-173,659	-1,335.8%
Advanced Technology Vehicles Manufacturing Loan Program	5,000	5,000	0	-5,000	-100.0%
Tribal Energy Loan Guarantee Program	1,000	1,000	-8,500	-9,500	-950.0%
Total, Energy Programs	12,947,657	13,467,407	8,759,265	-4,708,142	-35.0%
Atomic Energy Defense Activities					
National Nuclear Security Administration					
Federal Salaries and Expenses	407,595	410,000	434,699	+24,699	+6.0%
Weapons Activities	10,642,138	11,100,000	12,408,603	+1,308,603	+11.8%
Defense Nuclear Nonproliferation	1,999,219	1,930,000	1,993,302	+63,302	+3.3%
Naval Reactors	1,620,000	1,788,618	1,648,396	-140,222	-7.8%
Total, National Nuclear Security Administration	14,668,952	15,228,618	16,485,000	+1,256,382	+8.3%
Environmental and Other Defense Activities					
Defense Environmental Cleanup	5,988,048	6,024,000	5,506,501	-517,499	-8.6%
Other Defense Activities	840,000	860,292	1,035,339	+175,047	+20.3%
Defense Nuclear Waste Disposal (90M in 270 Energy)	0	0	26,000	+26,000	N/A
Total, Environmental and Other Defense Activities	6,828,048	6,884,292	6,567,840	-316,452	-4.6%
Total, Atomic Energy Defense Activities	21,497,000	22,112,910	23,052,840	+939,930	+4.3%
Power Marketing Administrations					
Southeastern Power Administration	0	0	0	0	N/A
Southwestern Power Administration	11,400	10,400	10,400	0	N/A
Western Area Power Administration	93,372	89,372	89,196	-176	-0.2%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	0	N/A
Colorado River Basins Power Marketing Fund	-23,000	-23,000	-21,400	+1,600	+7.0%
Total, Power Marketing Administrations	82,000	77,000	78,424	+1,424	+1.8%
Federal Energy Regulatory Commission (FERC)	0	0	0	0	N/A
Subtotal, Energy and Water Development, and Related Agencies	34,526,657	35,657,317	31,890,529	-3,766,788	-10.6%
Excess Fees and Recoveries, FERC	-9,000	-16,000	-16,000	0	N/A
Title XVII Loan Guarantee Program Section 1703 Negative Credit Subsidy Receipt	0	-107,000	-15,000	+92,000	+86.0%
Sale of Northeast Gas Reserve	0	0	-130,000	-130,000	N/A
Sale of Northeast Home Heating Oil Reserve	0	0	-27,000	-27,000	N/A
Total, Funding by Appropriation	34,517,657	35,534,317	31,702,529	-3,831,788	-10.8%

Other Defense Activities

Other Defense Activities

Other Defense Activities

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Other Defense Activities
Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses, necessary for atomic energy defense, other defense activities, and classified activities, in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, *and purchase of not more than one passenger motor vehicle*, [\$860,292,000] \$1,035,339,000, to remain available until expended: *Provided*, That of such amount, [\$295,432,000] \$333,298,000 shall be available until September 30, [2020] 2021, for program direction: *Provided further*, That the unexpended balances of prior appropriations provided for the Formerly Utilized Sites Remedial Action Program in this Act or any previous Energy and Water Development Appropriations Act may be transferred to and merged with this appropriation account, and thereafter may be accounted for as one fund for the same time period as originally enacted. (Energy and Water Development and Related Agencies Appropriations Act, 2019.)

Explanation of Changes

Request includes funding for the Formerly Utilized Sites Remedial Action Program that had been funded by the U.S. Army Corps of Engineers in prior years.

Other Defense Activities
(\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Other Defense Activities	840,000	860,292	1,035,339	+175,047

Overview

The Other Defense Activities appropriation funds elements that relate to and support the defense-oriented activities within the Department. These include Environment, Health, Safety and Security (EHSS), Enterprise Assessments (EA), Specialized Security Activities (SSA), Legacy Management (LM), Hearings and Appeals (OHA), and Defense Related Administrative Support (DRAS). Funding from DRAS is used to offset administrative expenses for work supporting defense-oriented activities.

Highlights and Major Changes in the FY 2020 Budget Request

- The EHSS budget increase provides for an increase in headquarters security and operations costs; salary and benefits expenses; and database updates/support.
- The EA budget increase supports implementation of the Program Management Improvement Accountability Act requirements within the Department.
- The SSA budget assures coverage of national security related activities.
- The LM funding increase supports inclusion of the Formerly Utilized Sites Remedial Action Program, which had been funded by the U.S. Army Corps of Engineers in prior years.

Other Defense Activities
Funding by Congressional Control
(\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Environment, Health, Safety and Security	198,946	202,839	212,509	+9,670
Enterprise Assessments	74,931	76,770	81,279	+4,509
Specialized Security Activities	262,912	266,378	254,578	-11,800
Legacy Management	154,606	158,877	303,029	+144,152
Defense-Related Administrative Support	143,000	151,689	179,092	+27,403
Hearings and Appeals	5,605	3,739	4,852	+1,113
Total, Other Defense Activities	840,000	860,292	1,035,339	+175,047

Environment, Health, Safety and Security

Overview

The Office of Environment, Health, Safety and Security (EHSS) provides corporate leadership and strategic approaches in enabling the Department of Energy (DOE) mission and furthering the protection afforded the DOE workers, the public, the environment, and national security assets. This is accomplished through the maintenance of corporate-level policies and standards and providing implementation guidance; sharing operating experience, lessons learned, and best practices; and providing assistance and supporting services to line management with the goal of mission success as DOE's environment, health, safety and security advocate.

EHSS accomplishes its overall mission in the following focus areas:

Environment, Health and Safety Policy and Support:

- Protecting the health and safety of DOE's Federal and contractor workforce, addressing the health effects legacy of the Nation's nuclear weapons program, and conducting national and international health studies.
- Minimizing DOE's radiological and other environmental footprints and improving DOE's safety performance through analysis, policy development, and sharing lessons learned.
- Promoting the safe design, construction and operation of DOE's facilities, both nuclear and non-nuclear, and providing cross-organizational leadership in resolving related issues.

Security Policy and Support:

- Establishing effective policies, through a collaborative, enterprise approach, by which the national security assets entrusted to the Department are protected and secured.
- Furthering DOE's national security, nonproliferation and open governmental goals through the identification of classified, controlled and unclassified information.
- Providing specialized security services, to include protective force and personnel security, to DOE Headquarters facilities and securing the work environment for Federal and contractor personnel.

As the Department's environment, health, safety and security advocate, EHSS supports the Department by identifying the risks in these areas that could jeopardize DOE's mission. EHSS works closely with DOE line management who is ultimately responsible for ensuring that the Department's work is managed and performed in a manner that protects workers, the public, the environment, and the Department's material and information assets. As part of this partnership, EHSS develops and promulgates environment, health, safety and security policy and provides expert advice and implementation assistance to help line management accomplish the Department's mission in a safe and secure manner. EHSS also represents the Department in national and international environment, health, safety, and security matters.

EHSS plays a leadership role in meeting the Department's expectation that all of its organizations embrace a healthy organizational culture where safe and secure performance of work and involvement of workers are deeply, strongly, and consistently held by managers and workers. EHSS contributes to more efficient and cost-effective mission accomplishment by providing quality products and timely expertise aimed at eliminating or mitigating major risks that can lead to adverse impacts to mission. EHSS also informs Secretarial decisions and improves DOE performance by providing expert advice to the Department's senior nuclear safety and nuclear security decision makers.

**Environment, Health, Safety and Security
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Environment, Health, Safety and Security				
Environment, Health and Safety				
Worker Safety	5,013	5,013	5,084	+71
Nuclear Safety	5,804	5,841	5,841	+0
Environment	2,371	2,371	2,407	+36
Health Programs				
Domestic Health Programs				
Health Research	3,270	3,370	3,370	+0
Former Worker Medical Screening	19,850	19,850	19,850	0
Employee Compensation Program	5,340	6,340	6,840	+500
International Health Programs				
Russian Health Studies	2,750	2,750	2,750	0
Japanese Health Studies	14,000	14,000	14,000	0
Marshall Islands Program	6,300	6,300	6,300	0
Total, Environment, Health and Safety	64,698	65,835	66,442	+607
Security				
Insider Threat Program	3,000	3,000	3,000	0
Security Operational Support	6,462	6,562	7,319	+757
Classification, Declassification and Controlled Information	9,757	11,179	11,679	+500
Security Investigations	7,705	4,695	5,200	+505
Headquarters Security Operations	39,071	42,568	45,988	+3,420
Total, Security	65,995	68,004	73,186	+5,182
Total, Environment, Health, Safety and Security	130,693	133,839	139,628	+5,789
Program Direction	68,253	69,000	72,881	+3,881
Total, Environment, Health, Safety and Security	198,946	202,839	212,509	+9,670

Environment, Health, Safety and Security
Explanation of Major Changes (\$K)

FY 2020 Request vs FY 2019 Enacted

Environment, Health, Safety and Security:

Program Direction: Funding provides for increases in Federal Employee Salaries and Benefits (+.977M); Travel increase is principally for Executive Protection support of Secretarial travel (+0.500M); Training (+.035M); Information Technology Expenses and Other Related Expenses costs (+2.214M); Funding provides for replacement of the Secretary's armored vehicle (+0.150M); and an increase for other Executive Protection expenses (+.005M)

+3,881

Headquarters Security Operations: Funding provides an increase for the Headquarters Protective Force, as built into the existing contract (+0.970M); Funding provides for the Vehicle Barrier replacement (+1.600M) at the Germantown, MD facility. The Germantown and Forrestal facility vehicle barriers protect the entire Germantown compound, and the Forrestal garage and loading dock areas, from the threat of a vehicle-borne explosive. The Germantown vehicle barriers are over 20 years old and there has been an increase in barrier malfunctions. To reduce the impact on DOE operations, they should be replaced due to continued deterioration and increased maintenance costs. Funding provides for X-ray Machine replacement (+0.850M) at the Forrestal and Germantown facility access points. The x-ray units play a vital role examining hand-held articles to eliminate the entry of unauthorized and dangerous articles into the buildings. The sixteen x-ray units within the Germantown and Forrestal facilities are 12 years old; while the units have been maintained regularly, replacements parts are becoming unavailable. The manufacturer does not sell the parts separately, and will not provide new replacement parts on a component basis; thus, replacement of the x-ray machines is essential to uninterrupted screening operations. The new x-ray machines will allow DOE to move to a more effective technology and improve the opportunity to identify controlled and prohibited articles.

+3,420

Health: Increase to the Energy Employees Occupational Illness Compensation Program to update the Site Exposure Matrices database, and expected increased records searches based on trends to date, and increased costs for the recently established Advisory Board on Toxic Substances and Worker Health.

+500

Security Operational Support: Funding provides for cost increases to: the Safeguards and Security Information Management System (+0.09M) the risk management/vulnerability assessments/activities that support security system performance evaluations, verifications, and validations (+0.090M); Human Reliability activities support (+0.200M); and the security awareness special interest group activities (+0.027M). Funding also provides for Corporate Security/Complex Wide initiatives to conduct specialized assessments and analyses of enterprise-wide security activities and issues affecting DOE safeguards and security programs and the identification of approaches to address them (+0.350M).

+757

+505

Security Investigations: Increase is to support cost increases for the electronic DOE Integrated Security System (eDISS) database.

	FY 2020 Request vs FY 2019 Enacted
Environment, Health, Safety and Security:	
Classification/Declassification: Funding (+0.500M) provides for additional support for the timely review of classified documents based on the existing and increasing document review workload to strengthen efforts to prevent the inadvertent release of sensitive information to the public.	+500
Worker Safety: Increase associated with costs for Worker Safety database technical support.	+71
Environment: Funding provides small increase for contract support escalation.	+36
Total, Environment, Health, Safety and Security	+9,670

Environment, Health and Safety

Description

The Environment, Health and Safety subprogram provides technical and analytical expertise to protect and enhance the safety of DOE workers, the public, and the environment. This subprogram maintains policies and guidance for the establishment of safe, environmentally sound work practices to achieve best-in-class performance in occupational, facility, nuclear, and radiation safety; protection of the environment and cultural and natural resources; and quality assurance. Environment, Health and Safety provides assistance to DOE offices and laboratories through site-specific activities, such as nuclear facility safety basis reviews, and corporate-wide services, such as accrediting commercial laboratories used by DOE sites for regulatory compliance and employee monitoring programs; administering the accident investigation and analytical services programs; supporting the Radiation Emergency Assistance Center/Training Site; and testing of high efficient particulate air filters. Corporate databases, such as those pertaining to accidents and illnesses, occurrence reporting, radiation monitoring and dose assessment, safety basis information, and hazardous substances inventories are maintained and used to support analyses of health and safety performance for senior management.

Environment, Health and Safety subprogram provides technical support for the implementation of Department-wide safety and environmental programs, such as the DOE Federal Occupational Safety and Health program; the Voluntary Protection Program, which encourages and rewards safety performance that exceeds industry averages through universally recognized certifications; environmental management systems, which support sustainable practices that promote pollution prevention, greenhouse gas reduction, and effective resource utilization, and radiological clearance; and control programs for the safe reuse and recycle of DOE equipment and materials and for the radiological release of lands and buildings. These DOE-wide safety and environmental programs are integrated with mission activities to optimize protection and effective implementation.

The Environment, Health and Safety subprogram also provides support to the Department of Labor for the implementation of the Energy Employees Occupational Illness Compensation Program Act, and supports the former worker medical screening program, and radiation health studies in Japan and Russia. These projects and programs provide for the evaluation and documentation of health effects and outcomes that support the basis for national and international worker protection policies and standards, which, in turn, provide updated levels of protection appropriate for the risk posed to DOE workers and the public.

In FY 2020, Environment, Health and Safety will continue:

- Developing cost-effective solutions for achieving best-in-class safety performance founded on integrated safety management and enhanced through such concepts as safety culture, voluntary protection, and environmental management systems.
- Honoring the national and Departmental commitment to current and former workers through cost-effective implementation of the former worker medical screening program and support to the Department of Labor for the implementation of the Energy Employees Occupational Illness Compensation Program Act.

Worker Safety

Worker safety and health policies establish Department-wide safe work practices to achieve best-in-class safety performance, as compared to industrial operations, resulting in work conducted with a full understanding of health and safety related risks and controls necessary to mitigate those risks leading to minimization or avoidance of worker compensation liabilities. Funding provides for the maintenance of existing standards and the development of new requirements based on new or evolving working conditions and new developments in health science; technical assistance to DOE programs, laboratories, and sites in implementing health and safety requirements and programs; promotion of improvements in overall safety culture; and implementation of corporate health- and safety-related programs and information technology systems. Funding also provides for collecting, analyzing, and trending operational data to identify strengths and weaknesses of safety programs in support of continuous improvement in safety performance and cost effective implementation. Funding provides for the Employee Concerns Program that manages and provides a DOE enterprise approach to ensure that employee concerns related to environment, health, safety and security and the management of DOE and NNSA programs and facilities are addressed.

Nuclear Safety

Nuclear Safety activities include establishing and maintaining nuclear safety policies and requirements to ensure adequate protection of workers, the public, and the environment from hazards associated with the design and operation of DOE nuclear facilities. This includes the establishment of general facility safety requirements in fire protection, response to natural phenomena, maintenance, and quality assurance to ensure that products and services meet or exceed the Department's objectives. Nuclear safety provides assistance to field elements in implementing requirements and resolving issues; and provides oversight of DOE nuclear operations and facilities.

Environment

Environmental activities support DOE's efficient use of resources and energy and its compliance with environmental requirements. Funding provides technical support for the development of policies, requirements, and guidance related to responsible management of natural and cultural resources on and around DOE sites, and performance tracking across the DOE complex. Environmental activities also fund technical analyses supporting EHSS's role representing DOE to external agencies and stakeholders to develop cost effective and efficient means of meeting environmental and public protection objectives and avoiding future liabilities. Funding is used to identify requirements or recommendations that are not cost beneficial or based on sound science and to identify and assist with implementing suitable alternatives. Environmental activities also support the development of guidance and tools for implementation of consensus standards that are practical and broadly accepted. Funding supports programs that provide assurance that environmental monitoring and sampling data meet DOE data quality objectives and ensures computer codes that are used to demonstrate compliance with DOE public and environmental protection requirements are appropriate and employ the best science. Funding also supports the development and maintenance of plans, models, and guidance to respond to radiological and nuclear-related emergencies and support for interagency and national consensus standard development with a goal to harmonize Federal radiation protection policies and guidance for protection of the public and environment.

Domestic Health Programs:

Health Research

Domestic health research activities provide for the conduct of health studies on DOE workers and communities surrounding DOE sites, technical assistance to DOE programs in addressing specific health issues, support to national assets used to respond to radiological events throughout the country, and expertise to support national and international efforts in response to disease outbreaks. These activities also support the maintenance of the electronic comprehensive epidemiologic data resource; the beryllium and U.S. transuranium and uranium registries; and the illness and injury surveillance database and access to the data these systems contain.

Former Worker Medical Screening

Former worker medical screening activities provide for the conduct of medical screenings for former DOE and DOE-related beryllium vendor employees to identify adverse health conditions that may have resulted from work conducted at DOE facilities. In addition, EHSS also screens DOE-related beryllium vendor facilities on behalf of DOE, as mandated by Congress in the FY 1993 Defense Authorization Act (Public Law 102-484). Workers who are found to have illnesses related to work on behalf of DOE are referred to the Department of Labor for potential compensation through the Energy Employees Occupational Illness Compensation Program Act.

Employee Compensation Program

DOE Energy Employees Occupational Illness Compensation Program Act (EEOICPA) activities support the implementation of Parts B and E of the Act by the Department of Labor to provide compensation to DOE and DOE-related vendor employees who have become ill as a result of work for DOE. Part B provides for compensation to workers with beryllium disease, silicosis, or radiation-induced cancer, and Part E provides for compensation and medical benefits to DOE contractor and subcontractor employees whose illnesses were caused by exposure to any toxic substance, such as beryllium or other chemical hazards. DOE's support consists primarily of providing information regarding employment status, exposures to radiation and toxic substances, and operational history of DOE facilities to the Department of Labor, the National Institute for Occupational Safety and Health, and the President's Advisory Board on Radiation and Worker Health in support of claims filed by current and former DOE Federal and contractor employees.

International Health Programs:

Russian Health Studies

The Russian health studies program supports the collaborative radiation health effects research program between U.S. and Russian scientists to determine the risks associated with working at or living near Russian former nuclear weapons production sites. The research is performed under the Cooperation in Research on Radiation Effects for the Purpose of Minimizing the Consequences of Radioactive Contamination on Health and the Environment, an agreement between the United States and Russia that was signed in 1994 and renewed in 2000, 2007, and 2011. The agreement is implemented through the Joint Coordinating Committee for Radiation Effects Research, representing agencies from the United States and the Russian Federation. The goals of the program are to better understand the relationship between health effects and chronic, low-to-medium radiation exposure; determine radiation-induced cancer risks from exposure to gamma, neutron, and alpha radiation; and improve and validate U.S. and international radiation protection standards and practices.

Japanese Health Studies

The Japanese health studies activity supports the Radiation Effects Research Foundation, managed through a bi-national agreement between the United States and Japan, to conduct epidemiologic studies and medical surveillance of the survivors of the atomic bombings of Hiroshima and Nagasaki. The foundation engages in innovative science to develop new research methods and approaches for assessing radiation health effects that are used as a basis for the development of radiation standards.

Marshall Islands Program

The Marshall Islands program provides for medical surveillance and treatment of Marshallese citizens affected by the nuclear weapons testing conducted by the United States in the Pacific Ocean between 1946 and 1958. The program also provides for environmental monitoring in support of safe resettlement of four atolls affected by the testing. The work is performed as required by the Compact of Free Association Acts of 1986 and 2003 between the United States and the Republic of the Marshall Islands and the Insular Areas Act of 2011 requiring enhanced monitoring of Runit Island Nuclear Waste Containment Structure beginning in FY 2013.

Health and Safety

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Environment, Health, Safety \$65,835,000	\$66,442,000	+607,000
Worker Safety \$5,013,000	\$5,084,000	+\$71,000
• Research, update, and maintain existing DOE regulations, directives and technical standards, and develop new safety and health requirements based on new or evolving working conditions, when warranted; • Provide technical assistance to DOE programs, laboratories, and sites in the implementation of health and safety requirements and programs, such as integrated safety management; • Provide support in development of technical qualification standards and description of required competencies and training for Federal staff involved in management of defense nuclear facilities; • Promote the implementation of the DOE voluntary protection program, which encourages and rewards safety performance that exceeds industry averages; • Provide technical support for the implementation of the DOE contractor employee assistance program that provides for the collection and analysis of causes of lost time and disabilities and the medical and psychological interventions available to reduce those losses; • Maintain the electronic Radiation Exposure Monitoring System, which serves as the Department's central repository for radiation exposure information at DOE in support of 10 C.F.R. 835, Occupational Radiation Protection, Subpart I, requirements regarding annual monitoring of individual occupational radiation exposure records for DOE employees, contractors, and subcontractors, as well as members of the public who visit DOE sites; • Provide technical support for the implementation of	• Continuation of all FY 2019 activities.	• Funding provides for increased costs for Information Technology support for Worker Safety Databases.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
the DOE Federal employee occupational safety and health program, as required by Presidential Executive Order 12196, Occupational Safety and Health Programs for Federal Employees; Section 19 of Public Law 91-596, the Occupational Safety and Health Act of 1970; and 29 C.F.R. 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters; • Conduct and communicate analysis and trending of safety performance information to identify excellent performance and areas needing improvement in order to reduce or prevent adverse events and injuries and minimize mission interruptions; • Provide information to DOE operating entities regarding operating experience, lessons learned, and suspect, defective, and counterfeit items; • Provide overall program administration and assistance, including training, to DOE program offices in support of implementing the Department's accident investigation program, which provides for independent Federal investigations of high-consequence incidents involving worker fatalities or serious injuries, acute exposures to radiation or chemicals, environmental releases, or significant loss of capital assets. Upon request, or as directed by DOE leadership, assist DOE program offices in conducting specific accident investigations; • Maintain the differing professional opinion program and process, including a web page and online submittal form that DOE and contractor employees can use to identify and document differing professional opinions concerning technical issues; • Maintain corporate health- and safety-related information management technology systems, such as the Computerized Accident/Incident Reporting		

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
System, the Occurrence Reporting and Processing System, the Radiation Exposure Monitoring System, and the lessons learned system; • Support continuous improvement in meeting the Department's safety culture and safety conscious work environment (SCWE) across the complex and to ensure consistent leadership and focus on all aspects of DOE's safety culture initiatives; and • Support the DOE enterprise-wide Employee Concerns Program that provides management and administration of the program to ensure that employee concerns related to environment, health, safety, and security and the management of DOE and NNSA programs and facilities are addressed utilizing well-established processes that include prompt identification, reporting, and resolution of employee concerns regarding DOE facilities or operations in a manner that provides the highest degree of safe operations.		
Nuclear Safety \$5,841,000	\$5,841,000	+0
• Assess, update, and maintain DOE regulations, directives, and technical standards and lead the development of nuclear safety and quality assurance requirements based on new or evolving facility hazards and/or operating conditions, when warranted (including fire protection, natural phenomena hazards, nuclear materials packaging, and maintenance); • Maintain a DOE-wide nuclear safety research and development program to provide corporate-level leadership supporting the coordination and integration of nuclear safety science and technology, share nuclear safety research and development information across the Department, and coordinate the conduct of nuclear safety research and development activities;	• Continuation of all FY 2019 activities.	• No change in work scope.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
• Provide technical assistance to DOE program and line organizations, national laboratories, and sites in implementing nuclear safety and quality assurance requirements and programs and resolving issues and recommendations identified by the Defense Nuclear Facilities Safety Board; • Provide technical assistance to national standards development organizations in developing and maintaining nuclear safety and quality assurance consensus standards; • Support DOE program offices in assessing conduct of operations, maintenance, and/or training evaluations for hazard category 1, 2, and 3 nuclear facilities prior to authorizing startup or restart of these facilities or their operations; • Facilitate continuous improvement to the DOE facility representative and safety system programs, supporting approximately 280 site office resident nuclear safety subject matter experts funded by and reporting to DOE line management; • Assist in coordinating information exchanges in various safety concepts relevant to DOE including nuclear safety; safety and organizational culture, high reliability performance and human performance improvement; and probabilistic risk assessment with the Institute of Nuclear Power Operations, a non-profit organization established by the commercial nuclear power industry to promote the highest levels of safety and reliability in the operation of nuclear power plants; • Maintain web-based systems to provide the status of the safety basis of each hazard category 1, 2, or 3 DOE nuclear facility and provide public information on how to obtain copies of safety basis and related documents for DOE nuclear facilities; • Implement safety software quality assurance		

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
activities that provide for the maintenance of the DOE safety software central registry of approved computer codes, including a user-oriented communication forum, and operation of the safety software expert working group for enabling effective and consistent use of high-quality safety software across DOE; and • Provide for the testing of 100 percent of all high efficiency particulate air filters used in safety class and safety significant systems, and other ventilation systems for confinement of radioactive materials prior to their use at DOE nuclear facilities.		
Environment \$2,371,000	\$2,407,000	+36,000
• Research, update, and maintain existing DOE regulations, directives, and technical standards, and develop new environmental protection, and public radiation protection requirements based on new or evolving science, protection strategies, national radiation protection guidance, and techniques based on new or evolving DOE activities and programs, when warranted; • Provide technical assistance to DOE programs, laboratories, and sites in implementing public radiation protection requirements and programs; • Provide technical support to DOE site and program offices and laboratories in evaluating and resolving regulatory compliance issues through the interpretation of regulatory requirements, development of cost-effective implementation strategies, and maintenance of web-based compliance tools; • Coordinate and develop consolidated responses to proposed changes in environmental regulations that may impact Departmental operations, in order to improve implementation and optimize the use of protective resources;	• Continuation of all FY 2019 activities.	• Funding provides increase for contract support escalation.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
• Review data from environmental reports required by Federal and state environmental protection agencies to validate adherence to reporting requirements; evaluate the effectiveness of the Department's toxic chemical release reduction and pollution prevention efforts; produce annual reports on DOE environmental performance; and develop annual radionuclide emissions summaries submitted to the Environmental Protection Agency under an interagency agreement; • Conduct proficiency and quality assurance audits and reviews of environmental analytical laboratories and commercial waste treatment, storage, and disposal vendors used by DOE operating entities in support of ongoing operations, remediation, and other cleanup projects, compliance programs, and long-term monitoring and surveillance activities to ensure consistency of services while minimizing the number of DOE audits of these commercial service providers; • Support development and maintenance of software toolkits to assist DOE operating elements in meeting data quality objectives related to environmental field sampling and to support user training at DOE field element sites; • Provide assistance to and oversight of DOE site property radiological clearance and control programs to ensure the public and environment are protected from radiological harm associated with the use or disposition of DOE property; • Continue development and maintenance of residual radioactivity models and codes that support evaluations and safe disposition of lands, structures, equipment, soil, and other material that may contain small amounts of residual radioactive material; • Support development of Federal radiation		

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
protection policies and guidelines and consistent, cost effective implementation of radiation protection programs within DOE including the review, evaluation and implementation of the 2014 and 2015 updates to the recommendations of the International Commission on Radiological Protection and associated revisions to Federal guidance reports on radiation protection; • Provide assistance to support development and effective use of national consensus standards for radiation protection, radioactive waste and materials management, environmental protection, and operational resilience; • Support the Center for Radiation Protection Knowledge at the Oak Ridge National Laboratory to ensure U.S. leadership in radiation dosimetry and risk assessment; • Maintain operational guidelines and other radiological criteria that support protective action decisions and Federal policy governing response to and recovery from radiological and nuclear terrorism incidents (radiological dispersal devices and improvised nuclear devices) and major nuclear accidents, and support NNSA emergency response and preparedness activities associated with such incidents; and • Provide technical assistance to DOE programs, laboratories, and sites in implementing natural and cultural resource protection requirements and programs.		
Domestic Health Programs \$29,560,000	\$30,060,000	\$+500,000
<i>Health Research \$3,370,000</i>	<i>Health Research \$3,370,000</i>	\$0
• Provide for the operation and maintenance of the electronic comprehensive epidemiologic data resource, the illness and injury surveillance database, and the U.S. Transuranium and Uranium	• Continuation of all FY 2019	• No change in work scope.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Registry; • Support the Radiation Emergency Assistance Center/Training Site, which provides medical expertise to DOE occupational medicine clinics, supplies chelating pharmaceuticals to treat radiation-exposed workers, and trains physicians to respond to radiological accidents anywhere in the United States; • Provide for maintenance of the beryllium registry, which collects, analyzes, summarizes, and disseminates health and exposure data to improve chronic beryllium disease prevention programs; • Provide for the conduct of public health studies and other activities performed by the Department of Health and Human Services through the National Institute for Occupational Safety and Health, the National Center for Environmental Health, and the Agency for Toxic Substances and Disease Registry to provide third-party objectivity regarding the effect of DOE operations on communities surrounding DOE sites; and • Provide funding for the Million Person Radiation Workers and Veterans Study that will provide the most precise estimate possible of the lifetime risk of cancer resulting from low levels of chronic radiation exposure, and to be of significant value to workers and the general public. Results also would appreciably improve the data used for compensation of workers with prior exposures to ionizing radiation.		
<i>Former Worker Medical Screening \$19,850,000</i> • Conduct site assessments to identify groups of at-risk former DOE Federal and contractor/subcontractor workers and DOE site-specific exposures; • Provide for outreach efforts to inform former workers of the availability and benefits of the	<i>Former Worker Medical Screening \$19,850,000</i> • Continuation of all FY 2019 activities.	\$0 • No change in work scope.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
program; • Provide for approximately 8,000 medical screenings annually to check for adverse health effects that could be related to occupational exposures to radiation, noise, beryllium, asbestos, silica, lead, cadmium, chromium, and solvents, conducted by independent health experts through seven cooperative agreements held by a consortia of universities, labor unions, and commercial organizations throughout the United States with expertise in administration of medical programs; • Refer workers who are found to have illnesses related to work on behalf of DOE to the Department of Labor for potential compensation through the Energy Employees Occupational Illness Compensation Program Act; and • Support the DOE central institutional review board, jointly funded with Science and the National Nuclear Security Administration, which reviews all medical screening programs funded by DOE and/or involving the DOE workforce to ensure that the risks to human participants are minimized and reasonable in relation to the anticipated benefits.		
<i>Energy Employee Occupational Illness Compensation Program (EEOICPA) \$6,340,000</i> • Conduct searches for records related to the employment and hazardous exposures for workers who applied to the Department of Labor for benefits under EEOICPA, declassify relevant records, and provide copies of those records to the Department of Labor and the National Institute for Occupational Safety and Health; • Provide for large-scale records research projects conducted by the Department of Labor, the National Institute for Occupational Safety and Health, and the President's Advisory Board on Radiation and Worker	<i>Energy Employee Occupational Illness Compensation Program \$6,840,000</i> • Continuation of all FY 2019 activities.	<i>+\$500,000</i> • Increase reflects the following: additional support to the Energy Employees Occupational Illness Compensation Program to update the Site Exposure Matrices database; expected increased records searches based on trends to date; and increased costs for the recently established Advisory Board on Toxic Substances and Worker Health.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Health; • Provide for the continued transition of hard copy, paper records to electronic records, as well as records indexing projects to improve the efficiency of responses to the Department of Labor and the National Institute for Occupational Safety and Health; and • Continue coordination and interface between former worker medical screening activities and EEOICPA activities, including identifying mechanisms for outreach to former workers and enhancing the exchange of medical, site, and exposure information among former worker medical screening service providers, the Department of Labor, and the National Institute for Occupational Safety and Health to assist the agencies tasked with adjudicating claims.		
International Health Program \$23,050,000	\$23,050,000	\$0
<i>Russian Health Studies \$2,750,000</i>	<i>Russian Health Studies \$2,750,000</i>	<i>\$0</i>
• Provide for the conduct of radiation exposure historical dose reconstruction studies, epidemiologic studies, and for a tissue repository of Russian nuclear workers and people living in communities surrounding the Russian nuclear facilities; • Assess radiation health effects of ionizing radiation; and • Publish analyses of radiation health effects assessments.	• Continuation of all FY 2019 activities.	• No change in work scope.
<i>Japanese Health Studies \$14,000,000</i>	<i>Japanese Health Studies \$14,000,000</i>	<i>\$0</i>
• Conduct epidemiologic studies and medical surveillance of the survivors of the atomic bombings of Hiroshima and Nagasaki at the Radiation Effects Research Foundation; • Assess radiation health effects of ionizing radiation; and	• Continuation of all FY 2019 activities.	• No change in work scope.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Publish analyses of radiation health effects assessments.		
<i>Marshall Islands Program \$6,300,000</i>	<i>Marshall Island Program \$6,300,000</i>	<i>\$0</i>
- Conduct whole-body counting and plutonium urinalyses to measure individual exposure to radionuclides; - Conduct comprehensive annual screening examinations; - Provide medical care for specified Marshallese; and - Provide environmental monitoring services in support of resettlement activities.	Continuation of all FY 2019 activities.	No change in work scope.

Security

Description

The Security subprogram provides support to develop and assist in the implementation of safeguards and security programs that provide protection to national security and other vital national assets entrusted to DOE, and to implement the U.S. Government's nuclear weapons-related technology classification and declassification program. Policies and guidance related to physical, personnel, and information security and nuclear materials accountability are designed to promote responsiveness to national security needs and changing threat environments. Assistance is provided to DOE programs and site offices and laboratories via working groups, site-specific support, and corporate program support to implement cost-effective security measures tailored to Departmental mission accomplishment. Corporate security-related information management systems are maintained to identify and reduce the potential for undue risk to individual sites, the Department, and national security. This subprogram also provides for the continuous physical protection and security of DOE facilities and information in the National Capital Area and access authorization security background investigations for DOE Headquarters Federal and contractor personnel. Additionally, DOE implements the information control program for the U.S. Government to mitigate national security threats by preventing the release of information regarding weapons of mass destruction and other data that could lead to damage of the Nation's energy infrastructure. Support is also provided to review over 400 million pages of documents at the National Archives for potential release as required by Executive Order 13526.

In FY 2020, Security activities will include developing comprehensive, reasonable, and cost effective security policies and operational guidelines to assure that the Nation's nuclear and energy assets and DOE's personnel and facilities are secure from insider and external threats.

Insider Threat Program

The DOE Insider Threat Program is intended to deter cleared employees from becoming insider threats; detect insiders who pose a risk to personnel, facilities, or classified or sensitive information; and mitigate the risks through administrative, investigative or other response actions. The Deputy Secretary of Energy designated an EHSS Senior Executive as the Senior Insider Threat Official to provide guidance and oversight for the Insider Threat Program. On a continuing basis, this Designated Senior Official advises and reports directly to the Secretary and Deputy Secretary regarding the planning, construct and operation of the Insider Threat Program. In FY 2020, the Insider Threat Program will continue to cut across several components of DOE and the Designated Senior Official will continue to coordinate implementation with those components. This budget justification shows only the funding to implement EHSS's share of program responsibilities, including the DOE share for the inter-agency Security, Suitability and Credential Line of Business (SSCLoB) budget supporting Executive Branch-wide reforms to the security clearance, employment suitability, and credentialing processes.

Security Operational Support

Security operational support provides technical expertise to develop safeguards and security policy requirements and guidance; assistance to DOE operations, to include foreign ownership, control and influence analysis; security technology research, development, test and evaluations to effectively mitigate current and emerging threats; and maintenance and management of corporate-level safeguards and security-related programs and information technology systems. These activities support Departmental objectives by providing an appropriately tailored level of security requirements and cost effective protection options for a wide range of scientific, research, and national security operations based on the significance of the national assets involved. Security policies, requirements, and guidance are developed to be clear and easily implemented, with the goal of securing nuclear material and classified matter and protecting the highly specialized DOE workforce. Corporate Security/Complex Wide initiatives provide specialized assessments and analyses of enterprise-wide security activities and issues affecting DOE safeguards and security programs and the identification of approaches to address them. Human Reliability Program, under 10 C.F.R. 712, provides trending, analysis and training to ensure compliance and a consistent enterprise approach to implementation.

Classification, Declassification, and Controlled Information

The classification, declassification, and controlled information activity ensures that the Department meets its statutory responsibility to implement the U.S. Government-wide program to classify and declassify nuclear weapons-related information (i.e., Restricted Data and Formerly Restricted Data) in order to prevent proliferation of nuclear weapons and

technology. This activity supports the implementation of Executive Order 13526, Classified National Security Information, to classify other information critical to national security (i.e., National Security Information), such as security-related information concerning U.S. nuclear sites, energy critical infrastructure, and chemical/biological and radiological dispersal devices. Funding provides for declassification review of DOE records and the development of policies, requirements, and guidance and technical support for the protection of controlled unclassified information.

Security Investigations

Security investigation activities provide for background investigations conducted by the National Background Investigations Bureau and the Federal Bureau of Investigation of EHSS Headquarters Federal and contractor personnel who require access to classified information or certain quantities of special nuclear material, as required by Section 145 of the Atomic Energy Act of 1954 (as amended) and Executive Order 12968, Access to Classified Information. The conduct of investigations and granting of access authorizations are based on 10 C.F.R. 710, Procedures for Determining Eligibility for Access to Classified Matter or Special Nuclear Material. DOE program offices provide funding for security investigations for Federal and contractor personnel whose access authorizations are managed through offices other than DOE Headquarters, as well as their Federal and contractor personnel at DOE Headquarters.

This activity also provides support to personnel security programs associated with maintaining access authorizations to personnel who meet the criteria noted above. The conduct of investigations and granting of access authorizations is based on 10 C.F.R. 710, Procedures for Determining Eligibility for Access to Classified Matter or Special Nuclear Material.

Headquarters Security Operations

Headquarters security operations provide a comprehensive safeguards and security program for the protection of DOE Headquarters facilities and assets in the Washington, DC, area. This is accomplished through the deployment of a protective force; security education programs; the management and operation of countermeasures, alarms, and access control equipment; and the implementation of security-related programs. Funding provides for a secure work environment and assures management, workers, and stakeholders that activities within Headquarters facilities are effectively protected.

Security

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Security \$68,004,000	Security \$73,186,000	+\$ 5,182,000
Insider Threat Program \$3,000,000	\$3,000,000	\$0
- Develop and maintain a robust program to deter, detect, and centrally analyze and respond to insider threats facing the Department; - Enhance existing information-sharing partnerships with law enforcement, intelligence, and community organizations; - Assist field sites in the establishment of Local Insider Threat Working Groups; - Assist Local Insider Threat Working Groups in the implementation of the Insider Threat Program; - Develop measures of success and program review criteria; - Develop and implement insider threat program training in fundamentals of counterintelligence, security, agency procedures for insider threat response, as well as applicable laws and regulations on gathering, integrating, retaining, safeguarding and use of collected insider threat data; - Produce an annual report for the Secretary to provide to the President; and - Provide for the inter-agency Security, Suitability and Credentialing Line of Business operating budget.	Continuation of all FY 2019 activities.	No change to work scope.
Security Operational Support \$6,562,000	\$7,319,000	+\$757,000
- Research, update, and maintain existing DOE regulations, directives and technical standards, and develop new safeguards and security requirements based on new or evolving threats or working conditions, when warranted; - Provide technical assistance to DOE programs, laboratories, and sites in implementing	- Continuation of all FY 2019 activities with the addition of the following activities: - Conduct specialized assessments and analyses of enterprise-wide security activities; - Assess systemic issues affecting DOE safeguards and security programs and	Funding provides for cost increases to the following: Safeguards and Security Information Management System (+0.090M); risk management/vulnerability assessments/activities that support security system performance evaluations, verifications, and validations (+0.090M); Human Reliability activities support

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
safeguards and security requirements and programs; • Provide technical support, training, and awareness materials for the security-related aspects of the human reliability program, including deployment of the human reliability program database and standard certification management system to ensure that over 10,000 individuals with access authorizations/clearances who occupy positions requiring access to special nuclear materials, nuclear explosive devices, or related facilities and information meet the highest standards of reliability and physical and mental suitability; • Provide support to the security awareness special interest group for DOE and contractor safeguards and security awareness coordinators to share security awareness methods and products, solve problems, and disseminate security-related information to satisfy Presidential and other regulatory requirements; • Operate, maintain, and perform data analysis of the electronic Safeguards and Security Information Management System, a centralized classified browser-based database that serves as the repository of current and historical DOE safeguards and security information pertaining to inspection deficiencies, corrective action status, facility clearance levels, classified addresses, and asset information; • Provide technical support and assistance for risk communication, risk management, vulnerability assessments, and security system performance evaluations, verifications, and validations, which are used to identify and cost-effectively address and mitigate current and emerging threats to	identify approaches to address them; and ○ Produce biennial reports to Congress on the status of Security of the Department's Category I and II Special Nuclear Materials.	(+0.200M); and the security awareness special interest group activities (+0.027M). Funding also provides for Corporate Security/complex-wide initiatives to conduct specialized assessments and analyses of enterprise-wide security activities and issues affecting DOE safeguards and security programs and the identification of approaches to address them (+0.350M).

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Departmental assets at the site level; • Provide assistance to DOE programs, sites, and laboratories in the use of security technology as a means to mitigate vulnerabilities, reduce recurring costs, and lessen environmental impacts; and • Maintain corporate security-related information technology systems, such as the DOE electronic Foreign Ownership, Control, or Influence program mandated by the Federal acquisition regulations system (48 C.F.R. 904.7003, 952.204-2, 970.0404, 904.404, and 952.204-73) and by Executive Order 12829, National Industrial Security Program; the DOE foreign visits and assignments (FACTS) program that enables foreign nationals' participation in unclassified DOE work, as well as classified visits involving foreign nationals; and the Radiological Source Registry and Tracking (RSRT) database, which is used to inventory approximately 18,000 radioactive sealed sources at DOE sites in support of the Department's nonproliferation and antiterrorist programs, U.S. and DOE regulatory compliance, and international treaty obligations.		
Classification, Declassification and Controlled Information \$11,179,000	\$11,679,000	+\$500,000
• Provide technical support in developing U.S. Government and DOE-wide policy and technical guidance to ensure that classified nuclear weapons-related information and other information critical to national security and to U.S. Governmental, commercial, or private interests is identified for proper protection; • Provide specialized technical expertise to foreign governments and to DOE and other U.S.	• Continuation of all FY 2019 activities.	• Funding provides for additional support for the timely review of classified documents based on the existing and increasing document review workload to strengthen efforts to prevent the inadvertent release of sensitive information to the public.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
departments and agencies regarding the national security implications of classification and declassification decisions for nuclear proliferation issues; • Provide training and certification of DOE and other agency personnel in classification and information control programs and related areas; • Provide support to the National Declassification Center for review of 400 million pages at the National Archives and follow-on record collections; • Review documents in support of DOE operations and other U.S. Government entities, such as Congress, Presidential Libraries, U.S. Patent Office, the Defense Nuclear Facilities Safety Board, the Government Accountability Office, and the Inspector General; and • Perform the final review of classified DOE documents and documents containing DOE equities from all U.S. Government departments and agencies, including DOE, when they are requested under the Freedom of Information Act and the mandatory provisions of Executive Order 13526, to ensure that DOE classified and controlled information is identified and protected from unauthorized release to the public as required by 10 C.F.R. 1004, Freedom of Information, and 10 C.F.R. 1045, Nuclear Classification and Declassification.		
Security Investigations \$4,695,000	\$5,200,000	+\$505,000
• Provide for the Federal Bureau of Investigation to conduct background investigations of EHSS Headquarters Federal and contractor employees applying for or occupying sensitive positions, as dictated by the Atomic Energy Act (as amended); • Provides for initial background investigations,	• Continuation of all FY 2019 activities.	Increase is to support cost increases for the electronic DOE Integrated Security System (eDISS) database.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
periodic reinvestigations, and reimbursement for fingerprint and name checks; • Provide for the National Background Investigations Bureau to conduct most background investigations of EHSS Headquarters Federal and contractor employees. Funding provides for initial single-scope background investigations, periodic reinvestigations, and initial and reinvestigation national agency checks, and continuous evaluation special agreement checks; • Research, update, and maintain existing DOE regulations, directives, and technical standards, and develop new personnel security requirements based on new or evolving threats or working conditions, when warranted; • Provide technical assistance to DOE programs, laboratories, and sites in implementing personnel security requirements and programs; • Conduct corporate-level access authorization adjudications (i.e., performing case reviews, conducting evaluations, and preparing decision packages), as necessary; • Operate and manage the electronic DOE Integrated Security System (eDISS), which consists of interrelated databases and associated client applications and web pages that automate the processing and tracking of access authorizations, access and visitor control, personal identity verification, and related personnel security processes; and • Continue deployment of the personnel security case management system, as well as the integration of this system with DOE field site human resources, financial management, and access control systems to reduce overall		

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
personnel security program costs by eliminating redundant systems at DOE field sites and reduce processing time by integrating directly with other databases.		
Headquarters Security Operations \$42,568,000	\$45,988,000	+\$3,420,000
• Provide a protective force engaged in the physical protection of classified information, facilities, and the workforce 24 hours a day, 365 days a year at DOE Headquarters facilities and satellite facilities in Washington, DC, and Germantown, MD; • Operate and maintain security alarms and access control systems, including security screening equipment, vehicle inspection scanning devices, internet protocol video, turnstiles, unmanned access/egress portals, other access control equipment; and protective force shelters; • Conduct performance testing of information control systems to ensure the protection of sensitive and classified information vital to both national and economic security; • Conduct technical surveillance countermeasures activities, such as surveys, inspections, in-conference monitoring, pre-construction consultation services, and threat analysis, in support of Presidential Decision Directive 61, Energy Department Counterintelligence, to detect and prevent hostile intelligence collection operations intent on penetrating DOE installations to steal technology or sensitive or classified information; • Conduct the telecommunications security activities consisting of emission security, protected transmission systems, and communications security to ensure the protection of DOE's sensitive unclassified and	• Continuation of all FY 2019 activities with the addition of the following activities: ○ Vehicle Barrier replacement at the Germantown, MD facility; and ○ X-ray Machine replacement at the Forrestal and Germantown facility access points.	• Funding provides an increase for the Headquarters Protective Force as built into the existing contract (+0.970M). Funding also provides for the Vehicle Barrier replacement (+1.600M) at the Germantown, MD facility. The Germantown and Forrestal facility vehicle barriers protect the entire Germantown compound, and the Forrestal garage and loading dock areas, from the threat of a vehicle-borne explosive. The Germantown vehicle barriers are over 20 years old and there has been an increase in barrier malfunctions. To reduce the impact on DOE operations, they should be replaced due to continued deterioration and increased maintenance costs. Funding provides for X-ray Machine replacement (+0.850M) at the Forrestal and Germantown facility access points. The x-ray units play a vital role examining hand-held articles to eliminate the entry of unauthorized and dangerous articles into the buildings. The sixteen x-ray units within the Germantown and Forrestal facilities are 12 years old and while the units have been maintained regularly, replacements parts are becoming unavailable. The manufacturer does not sell the parts separately, and will not provide new replacement parts on a component basis; thus, replacement of the x-ray machines is essential to uninterrupted

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
classified telecommunications through various security components; • Provides Communications Security (COMSEC) and TEMPEST support and oversight to all of the DOE/NNSA entities, develops and implements training for the various elements of the Technical Surveillance Program (TSP), performs COMSEC Audits/Inspections, and maintains DOE policy and guidance for TSP activities; • Serves as the COMSEC Central office of record and national command and controlling authorities for classified key material; • Provide access authorization adjudication services (i.e., case reviews and analysis, interviews, and use of court reporters and consulting physicians as needed) for DOE Headquarters personnel to assure that access to DOE classified information is permitted only after a determination that such access will not endanger the common defense and national security; • Implement Homeland Security Presidential Directive 12 requirements related to the secure and reliable identification of DOE Federal and contractor employees; • Provide technical support for the implementation of the DOE Headquarters security awareness and classified matter protection and control programs; • Administer the DOE Headquarters facility clearance registration and foreign ownership, control, or influence programs for contractors granted access to classified information; • Conduct safeguards and security surveys, self-assessments, and program reviews to ensure that DOE Headquarters operations comply with		screening operations. The new x-ray machines will allow DOE to move to a more effective technology and improve the opportunity to identify controlled and prohibited articles

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Departmental and national-level requirements; and • Replace and repair of Headquarters physical security systems at both the Forrestal and Germantown facilities.		

Program Direction

Overview

Program Direction provides for Federal staffing and mission support services to provide overall direction and execution of the EHSS mission of conducting the Department's activities in environment, health, safety, and security policy, technical assistance, analysis, and corporate programs.

Technical Support Services: Defense Nuclear Facilities Safety Board (DNFSB) Liaison Activities

The Office of the Departmental Representative ensures effective cross-organizational leadership and coordination to resolve DNFSB-identified technical and management issues to ensure the health, safety, and security of the workers, public, and environment.

Other Related Expenses

Other related expenses provide support required for EHSS to accomplish its mission. Support includes Working Capital Fund services; training for Federal employees; funding for information technology equipment, services, and DOE common operating environment fees; and executive protection and other security-related equipment.

**Program Direction
Funding (\$K)**

Program Direction Summary

Program Direction

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Salaries and Benefits	48,306	48,836	49,813	+977
Travel	2,400	2,450	2,950	+500
Mission Support	285	285	285	+0
Other Related Expenses	17,262	17,429	19,833	+2,404
Total, Program Direction	68,253	69,000	72,881	+3,881
Federal FTEs	262	262	262	+0

Support Service and Other Related Expenses

Support Services

Technical Support				
Defense Nuclear Facilities Safety Board Liaison Activities	285	285	285	+0
Total, Technical Support	285	285	285	+0
Total, Support Services	285	285	285	+0

Other Related Expenses

Working Capital Fund	11,195	10,987	10,987	-+0
Tuition/Training of Federal Staff	260	365	400	+35
Other Services Procured	5,807	6,077	8,446	+2,369
Total, Other Related Expenses	17,262	17,429	19,833	+2,404

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$69,000,000	\$72,881,000	+\$3,881,000
Salaries and Benefits \$48,836,000	\$49,404,000	+568,000
• Provide corporate-level leadership and strategic vision to coordinate and integrate environment, health, safety, and security policy development and technical assistance; analysis; corporate safety and security programs including insider threat activities and Employee Concerns Program; quality assurance programs; and effective cross-organizational coordination to resolve Defense Nuclear Facilities Safety Board-related technical and management issues necessary to ensure worker and public health and safety; • Provides an Executive Protection Program in accordance with the authority of United States Code (USC) Title 42, Chapter 23, Section 161.k and 2201k (the Atomic Energy Act); 10 Code of Federal Regulation 1047; and USC Title 18, Chapter 203, Section 3053; • Manage the conduct of domestic and international health programs; • Implement physical and personnel security programs for DOE Headquarters facilities; and • Manage the U.S. Government-wide program to classify and declassify nuclear weapons-related technology and other national security information.	• Continuation of all FY 2019 activities.	• Funding provides for increases in Federal employee within grade increases, promotions, and employee benefits.
Travel \$2,450,000	\$2,950,000	+\$500,000
• Supports the management and conduct of environment, health, safety, and security programs for the Department; and • Supports executive protection activities for the Secretary, Deputy Secretary, and other dignitaries as assigned.	• Continuation of all FY 2019 activities.	• Travel increase is principally for Executive Protection support of Secretarial travel.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Technical Mission Support \$285,000	\$285,000	+0
<i>Defense Nuclear Facilities Safety Board (Board) Liaison Activities</i>	<i>Defense Nuclear Facilities Safety Board (Board) Liaison Activities</i>	No change in work scope.
- Coordinate resolution of Board recommendations and agreed-upon defense nuclear facility safety issues; - Provide requested reports/information on defense nuclear facility safety issues; - Coordinate ready access to such defense nuclear facilities, personnel, and information that the Board determines are necessary to carry out its responsibilities; - Provide technical evaluation and analysis of defense nuclear safety and management issues identified by the Board; - Provide assistance, advice and support to DOE/NNSA Program and field offices, including line management on addressing and resolving such issues; and - Monitor Department-wide performance in addressing Board-related defense nuclear safety and management issues.	Continuation of all FY 2019 activities.	

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Other Related Expenses \$17,429,000	\$19,833,000	+2,404,000
- Working Capital Fund fees, based on guideline estimates issued by the Working Capital Fund manager, for the cost of common administrative services such as building occupancy and alterations, computer and telephone infrastructure and usage, mail service, copying, printing and graphics, procurement closeouts, supplies, online learning, computer network support, and payroll processing; - Federal employee training to obtain and/or maintain the technical competence of Federal employees, assuring that Federal personnel are fully capable of performing current and future missions of the Department; - The DOE common operating environment initiative that provides a single point of contact for all common information technology systems and services and brings security, service, efficiency, and scale to these projects; - Information technology investments that support Headquarters Federal and contractor staff with hardware, software, hotline, and other desktop computer maintenance support on per-user count and level of service; - Information technology systems exclusive to EHSS such as the classified local area network that includes a Secret/Restricted Data network that supports Headquarters users and the Secret Internet Protocol Router Network that provides access to the Department of Defense classified network to effect coordination between the two departments; - Executive protection services to the Secretary of Energy and others designated by the Secretary; and the conduct of inquiries and investigations into significant matters of security concern; and	Continuation of all FY 2019 activities.	An increase for Information Technology Expenses and Other Related Expenses costs (+ +2.249M). Funding provides for replacement of the Secretary's armored vehicle (+0.150M), and for an increase in other Executive Protection expenses (+.005M)

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
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- Specialized security equipment and services.

**Environment, Health, Safety and Security
Safeguards and Security Crosscut
(\$K)**

	FY 2019 Enacted	FY 2020 Request	FY 2020 vs. FY 2019 \$ Chg.	FY 2020 vs. FY 2019 % Chg.
<u>Environment, Health, Safety and Security (EHSS)</u>				
Protective Forces	32,333	33,303	+970	+3.0%
Physical Security Systems	7,143	9,593	+2,450	+34.3%
Information Security (Class/Declass)	11,179	11,679	+500	+4.5%
<u>Cyber Security</u>				
Identify	827	845	+18	+2.2%
Protect	4,060	4,144	+84	+2.1%
Detect	431	441	+10	+2.3%
Respond	71	73	+2	+2.8%
Recover	128	131	+3	+2.3%
Subtotal, Cyber Security	5,517	5,634	+ 117	+2.1%
Personnel Security	6,187	6,692	+505	+8.2%
Program Management (Sec. Oper. Support)	6,562	7,319	+757	+11.50%
Security Investigations Clearances	1,600	1,600	+0	+0%
Total, EHSS	70,521	75,820	+5,299	+ 7.5%

Environment, Health, Safety and Security Funding by Appropriation by Site
(\$K)

	FY 2019 Enacted	FY 2020 Request
<u>Environment, Health, Safety and Security</u>		
Argonne National Laboratory	945	945
Brookhaven National Laboratory	250	250
Chicago Operations Office	50	50
Consolidated Business Center	259	259
Idaho National Laboratory	150	150
Idaho Operations Office	400	400
Kansas City Plant	10	10
Lawrence Berkeley National Laboratory	0	0
Lawrence Livermore National Laboratory	3,050	3,050
Lexington Project Office	200	200
Los Alamos National Laboratory	95	95
Nevada Site Office	15	15
NNSA Service Center	1,000	1,000
Oak Ridge Institute for Science and Education	1,305	1,305
Oak Ridge National Laboratory	1,035	1,035
Oak Ridge Operations Office	2,795	2,795
Office of Scientific and Technical Information	300	300
Ohio Field Office	5	5
Pacific Northwest National Laboratory	1,905	1,905
Pantex Plant	10	10
Richland Operations Office	1,000	1,000
Sandia National Laboratory	1,210	1,210
Savannah River Operations Office	500	500
Savannah River Site	10	10
Washington, D.C., Headquarters	186,320	195,990
Y-12 National Security Complex	20	20
Total, Environment, Health, Safety and Security	202,839	212,509

Office of Enterprise Assessments

Overview

The Office of Enterprise Assessments (EA) supports the Department's mission priorities and strategic plan for the secure, safe, and efficient operation of the nuclear weapons complex, science and energy research, and environmental cleanup activities by conducting independent assessments of security and safety performance throughout the Department, holding contractors accountable for violations of security and safety regulations, providing training programs that institutionalize enterprise security and safety lessons learned, and coordinating program management improvement initiatives. EA activities complement, but do not replace the responsibility of DOE line management to ensure compliance with security and safety requirements or effective management of the Department's programs.

EA is organizationally independent of the DOE entities that develop and implement security and safety policy and programs and therefore can objectively provide timely information to DOE senior leadership, contractor organizations, and other stakeholders on whether national security material and information assets are appropriately protected; and whether Departmental operations provide for the safety of its employees and the public. EA activities evaluate whether the Department is effective in promoting protection strategies and informed risk management decisions. EA is designated to implement congressionally authorized contractor enforcement programs pertaining to classified information security, nuclear safety, and worker safety and health. EA also operates the DOE National Training Center (NTC) in Albuquerque, New Mexico, maintains collaborative relationships with security and safety related organizations within and outside the Department, and coordinates the implementation of program improvement initiatives throughout the Department.

EA's key activities in FY 2020 are:

- Strengthening the Department's posture and ability to protect national security assets (special nuclear material [SNM], controlled unclassified information, and classified matter), its employees and the public by:
 - Conducting comprehensive independent security performance assessments and follow-up assessments at DOE National Security / Category I SNM sites (those with high value assets), utilizing "limited notice" safeguards and security performance tests to provide accurate, up-to-date assessments of DOE site security response capabilities, and focusing on insider threats from employees who may seek to compromise National security and/or the ability of the Department to meet its mission;
 - Enhancing the methods and tools used to conduct comprehensive independent cybersecurity assessments, including unannounced "red team" performance testing, to identify vulnerabilities in the Department's National Security, Intelligence, scientific, and other information systems against external and internal attacks;
 - Conducting nuclear safety, worker safety and health, and emergency management independent performance assessments of the Department's operations including high hazard nuclear construction projects and operations such as those at the Los Alamos National Laboratory, Y-12 National Security Complex, Savannah River Site, Hanford Site, and Idaho National Laboratory;
 - Implementing the DOE enforcement function that holds contractor organizations accountable for noncompliance with worker safety and health, nuclear safety, and classified information security regulations; and
 - Providing training programs and other related functions via the DOE National Training Center in Albuquerque, NM, that institutionalize security and safety lessons learned.
- Supporting the development and implementation of program management improvement policies and strategies to promote improvements in program management and more efficiently advance and deliver DOE, including the National Nuclear Security Administration, products and services to the American public.

**Office of Enterprise Assessments
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Office of Enterprise Assessments				
Nuclear Safety Assessments	6,621	7,621	7,621	0
Enforcement	1,947	435	435	0
Security and Safety Training (HS)	15,000	15,512	15,512	0
Outreach and Analysis	500	500	500	0
Total, Office of Enterprise Assessments	24,068	24,068	24,068	0
Program Direction	50,863	52,702	57,211	+4,509
Total, Office of Enterprise Assessments	74,931	76,770	81,279	+4,509

**Office of Enterprise Assessments
Explanation of Major Changes (\$K)**

	FY 2020 Request vs FY 2019 Enacted
Office of Enterprise Assessments	
Increase supports Independent Assessments and Program Management Improvement activities.	+4,509
Total, Office of Enterprise Assessments	+4,509

Enterprise Assessments

Description

The EA Program provides for the assessment of DOE performance in nuclear safety; the implementation of the Congressionally authorized contractor enforcement programs for classified information security, nuclear safety, and worker health and safety; the development and administration of security and safety training that reflects the most current Departmental policy and lessons learned through enforcement investigations and independent assessments to enhance performance of the workforce; and the establishment and maintenance of collaborative relationships with internal and external organizations.

Nuclear Safety Assessments

Provides for the planning and execution of independent assessments of DOE high hazard nuclear facility construction projects and nuclear facilities and operations to determine performance compared with nuclear safety requirements contained in Title 10 Code of Federal Regulations (C.F.R.) Part 830, Nuclear Safety Management, and related DOE directives. EA will continue its focus of nuclear safety performance assessments on nuclear weapons complex infrastructure projects (e.g., at the Y-12 National Security Complex); and at clean-up and related operations (e.g., the construction of the Hanford Site Waste Treatment and Immobilization Plant); and monitoring operations at the Waste Isolation Pilot Plant.

Enforcement

Provides the Department with the capability to implement regulatory DOE contractor enforcement programs specified in Title 10 C.F.R. Part 824, Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations; Title 10 C.F.R. Part 820, Procedural Rules for DOE Nuclear Activities; and Title 10 C.F.R. Part 851, Worker Safety and Health Program. These activities provide a consistent and transparent method of contractor accountability for classified information security, nuclear safety, and worker health and safety performance that complements the Department's contract management mechanisms. The goal of this activity is to ensure that DOE contractors adhere to classified information security, nuclear safety, and worker safety and health requirements, and to promote proactive performance improvement through timely self-identification, reporting, and correction of noncompliant conditions to enable contractors to achieve excellence in mission accomplishment without the need for enforcement actions.

Security and Safety Training

Security and safety training activities provide the Department a means to improve security and safety performance by developing and maintaining the proficiency and competency of DOE security and safety contractor and Federal employees. These activities also improve senior executives' performance and capabilities to fulfill security and safety leadership responsibilities through standardized training for the security of critical Departmental and national security assets, the safety and health of the workforce, and the protection of the public and the environment. The DOE National Training Center (NTC), located in Albuquerque, New Mexico, serves as the primary resource for DOE security and safety training. Funding provides for the operation and maintenance of the facility and the development and presentation of various security and safety-related training and certification programs at the NTC, through e-learning mechanisms, and at DOE sites via mobile training teams. The NTC is also responsible for certifying training programs in accordance with DOE Policy 364.1, Health and Safety Training Reciprocity. The NTC certifies certain health and safety training programs in order for those training programs to be accepted at various DOE sites and contractor organizations, thus reducing or eliminating the need for employees to complete redundant training programs required prior to conducting work at DOE sites. The NTC also incorporates lessons learned and best practices identified during EA enforcement investigations and independent assessments into more effective training programs.

Outreach and Analysis

Establishes and maintains collaborative relationships with DOE line management, other U.S. Government entities and external stakeholders in order to inform DOE senior management of their input and positions, and foster improvements in security and safety performance at DOE sites. This helps determine complex-wide crosscutting issues and trends and provides analytic materials to help EA leadership determine areas of critical need and vulnerability and address Departmental issues.

Office of Enterprise Assessments

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Office of Enterprise Assessments \$24,068,000	\$24,068,000	\$0
Nuclear Safety Assessments \$7,621,000	\$7,621,000	\$0
- Conduct independent assessments of high hazard nuclear facility construction projects to ensure performance in the implementation of nuclear safety requirements; and - Provide independent assessments of DOE nuclear facilities and operations to ensure performance in the implementation of nuclear safety requirements.	- Conduct independent assessments of high hazard nuclear facility construction projects to ensure performance in the implementation of nuclear safety requirements; and - Provide independent assessments of DOE nuclear facilities and operations to ensure performance in the implementation of nuclear safety requirements.	No change.
Enforcement \$435,000	\$435,000	\$0
- Review and analyze performance data from the DOE data management system designed for noncompliance reporting, as well as reports from independent assessment activities, the DOE Occurrence Reporting and Processing System, the DOE Computerized Accident/Incident Reporting System, the DOE Safeguards and Security Information Management System, Federal accident investigations, and DOE site and program office assessments and evaluations to determine whether enforcement investigations are warranted and to identify performance trends; and - Conduct periodic outreach and training activities to communicate the Department's approach to security and safety enforcement, convey noncompliance reporting expectations, and provide information about DOE regulatory performance.	- Review and analyze performance data from the DOE data management system designed for noncompliance reporting, as well as reports from independent assessment activities, the DOE Occurrence Reporting and Processing System, the DOE Computerized Accident/Incident Reporting System, the DOE Safeguards and Security Information Management System, Federal accident investigations, and DOE site and program office assessments and evaluations to determine whether enforcement investigations are warranted and to identify performance trends; and - Conduct periodic outreach and training activities to communicate the Department's approach to security and safety enforcement, convey noncompliance reporting expectations, and provide information about DOE regulatory performance.	No change.
Safety and Security Training (HS) \$15,512,000	\$15,512,000	\$0
Develop and provide security and safety-related training and professional development programs	Develop and provide security and safety-related training and professional development programs	No change.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
at the NTC and at DOE sites through mobile training teams, Webinars, video conferencing, and synchronous distance learning to enhance performance throughout the Department; • Maintain and upgrade equipment and technologies to support a greater web presence and “just-in-time” online training products, such as webcasts and topical area seminars; • Continue implementation of the training reciprocity and collaboration program whereby certified safety training programs are recognized by other DOE contractors and sites and provide mechanisms for DOE contractors to work together to share training content and develop DOE-wide courses; • Incorporate best practices and lessons learned from EA enforcement investigations and independent assessments into NTC training programs to enhance performance of the workforce; and • Operate and maintain the facility, including classrooms, administrative offices, weapons live-fire ranges, and the Integrated Safety and Security Training and Evaluation Complex, a simulated DOE research and operational facility designed to allow for the use and evaluation of training methodologies and evolving safety and security technologies through hands-on, performance-based instruction.	at the NTC and at DOE sites through mobile training teams, Webinars, video conferencing, and synchronous distance learning to enhance performance throughout the Department; • Maintain and upgrade equipment and technologies to support a greater web presence and “just-in-time” online training products, such as webcasts and topical area seminars; • Continue implementation of the training reciprocity and collaboration program whereby certified safety training programs are recognized by other DOE contractors and sites and provide mechanisms for DOE contractors to work together to share training content and develop DOE-wide courses; • Incorporate best practices and lessons learned from EA enforcement investigations and independent assessments into NTC training programs to enhance performance of the workforce; and • Operate and maintain the facility, including classrooms, administrative offices, weapons live-fire ranges, and the Integrated Safety and Security Training and Evaluation Complex, a simulated DOE research and operational facility designed to allow for the use and evaluation of training methodologies and evolving safety and security technologies through hands-on, performance-based instruction.	
Outreach and Analysis \$500,000	\$500,000	\$0
• Establish and maintain collaborative relationships with organizations both internal and external to DOE; • Establish outreach mechanisms to industry, government, and academic organizations to leverage expertise for improving security and	• Establish and maintain collaborative relationships with organizations both internal and external to DOE; • Establish outreach mechanisms to industry, government, and academic organizations to leverage expertise for improving security and	No change.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
safety performance; - Analyze site-wide issues and trends and determine complex-wide crosscutting issues and trends; and - Leverage and provide analytic materials techniques and means to help EA leadership understand areas of critical need and performance vulnerabilities.	safety performance; - Analyze site-wide issues and trends and determine complex-wide crosscutting issues and trends; and - Leverage and provide analytic materials techniques and means to help EA leadership understand areas of critical need and performance vulnerabilities.	

Program Direction

Overview

Program Direction provides for Federal staffing and mission support services to provide overall direction and execution of the EA mission to conduct independent assessments of the Department's performance in security, safety, and other areas; implement classified information security, nuclear safety, and worker health and safety contractor enforcement programs; develop and administer security and safety training that reflects the most current Departmental policy on security and safety issues; coordinate the development and implementation of DOE-wide program management improvement policies and systems, and establish and maintain collaborative relationships with organizations both internal and external to DOE.

Critical to achieving its vision and goals is the ability of EA to maintain a highly qualified workforce with the expertise and skills necessary to support, manage, and conduct its mission. The EA workforce is composed of security and safety professionals highly educated in science, engineering, and technology that are led by effective program and project managers with exceptional communication and leadership skills and supported by innovative resource management experts. The judicious use of contractor support continues to be a practical and cost-effective means of providing a surge pool of technical experts.

Support Services

Independent assessment activities provide high value to the Department by assessing performance and identifying gaps and vulnerabilities in physical security and cybersecurity programs, safety (worker and nuclear safety, and emergency management), and related performance. Independent assessment activities are selected based on careful consideration and analysis of risk to Departmental operations and performance trends, and are tailored to the unique missions and needs of each DOE program and site/field office. Safeguards and security, information security, and cybersecurity-related independent performance assessment activities are designed to determine whether special nuclear materials, classified matter (parts and information), and controlled unclassified and sensitive information are adequately protected from unauthorized or inadvertent disclosure or diversion, including from the actions of malicious insiders. Independent performance assessment activities are also designed to evaluate whether the Department's overarching management and governance structure is effective in promoting robust protection strategies and informed risk management decisions. Safety-related independent performance assessment activities determine whether workers and the public are protected from the hazards associated with the Department's operations, and identify events that could negatively impact the Department's ability to perform its mission and achieve its goals. Independent assessment activities provide accurate and timely information and analysis to the Department's senior leadership regarding the performance of the Department's security and safety programs and other functions of interest. Information is made available to Department management, congressional committees, and stakeholders, such as unions and local public interest groups, to provide confidence that the Department's operations are performed in a secure and safe manner.

Independent performance assessment activities complement but do not replace DOE line management's responsibility for security, safety, and contract performance management as required by Departmental policies. EA provides a check-and-balance function for the Department that is vital to provide assurance of its security and safety performance to its leadership, its workers, the public and Congress, and to maintain confidence in the Department's ability to be an effective self-regulator. As required by DOE Order 227.1A, Independent Oversight Program, independent assessment activities are performed by personnel who are organizationally independent of the DOE program and site/field offices that develop and implement policies and programs, and who can therefore objectively observe and report on the performance of those policies and programs as they relate to Departmental operations. Independent assessment processes are governed by documented, formal protocols that are continuously evaluated, revised, and refined based on Departmental and national events and activities that have an impact on DOE security and safety in order to provide more useful performance data and related information to DOE management.

Program Management Improvement activities support the development and implementation of policies and systems to promote improvements in program management and more efficiently advance and deliver DOE, including the National Nuclear Security Administration, products and services to the American public. Efforts include the development and implementation of a collaborative governance approach and standards-based policy, a talent management strategy and formal career path for the program management workforce, and processes for conducting program reviews that identify and disseminate best practices and lessons learned.

Other Defense Activities/Office of Enterprise Assessments/

Program Direction

Other Related Expenses

Support includes working capital fund services; training for Federal employees; information technology equipment and services; and the Energy Information Technology Services.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Program Direction				
Salaries and Benefits	17,517	18,325	19,825	+1,500
Travel	1,235	1,500	1,500	0
Support Services	27,765	27,765	30,857	+3,092
Other Related Expenses	4,346	5,112	5,029	-83
Total, Program Direction	50,863	52,702	57,211	+4,509
Federal FTEs	92	92	98	+6
Support Services				
Technical Support				
Independent Assessments	27,765	27,765	29,357	+1,592
Program Management Improvement	0	0	1,500	+1,500
Total, Technical Support	27,765	27,765	30,857	+3,092
Total, Support Services	27,765	27,765	30,857	+3,092
Other Related Expenses				
Working Capital Fund	2,972	3,106	2,572	-534
Training	78	113	113	0
Other Services Procured	1,296	1,893	2,344	+451
Total, Other Related Expenses	4,346	5,112	5,029	-83

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$52,702,000	\$57,211,000	+\$4,509,000
Salaries and Benefits \$18,325,000	\$19,825,000	+\$1,500,000
Provides for Federal staffing to manage and oversee direction and execution of the EA mission related to: independent assessments; enforcement; security and safety training; and outreach activities; conduct enforcement investigations of DOE contractors for potential violations of security and safety requirements; develop and issue enforcement outcomes as necessary; conduct security and safety independent assessments; conduct outreach activities; and provide infrastructure support related to EA resources and communication.	Provides for Federal staffing to manage and oversee direction and execution of the EA mission related to: independent assessments; enforcement; security and safety training; program management improvement, and outreach activities; conduct enforcement investigations of DOE contractors for potential violations of security and safety requirements; develop and issue enforcement outcomes as necessary; conduct security and safety independent assessments; conduct outreach activities; and provide infrastructure support related to EA resources and communication.	Increase provides six additional FTEs to support Program Management Improvement activities.
Travel \$1,500,000	\$1,500,000	\$0
Provides for Federal employee travel in support of EA enforcement, independent assessment, training, outreach, and other mission-related activities.	Provides for Federal employee travel in support of EA enforcement, independent assessment, training, outreach, and other mission-related activities.	No change.
Support Services \$27,765,000	\$30,857,000	+\$3,092,000
<i>Independent Assessments</i> \$27,765,000	<i>Independent Assessments</i> \$29,357,000	<i>Independent Assessments</i> +\$1,592,000
- Observe operations and conduct technical assessments and performance tests that examine the effectiveness of security and safety programs and policies, giving priority to the highest security interests, such as strategic quantities of special nuclear material, and activities that present the most significant safety risks to workers and the public, such as nuclear facilities and operations; - Conduct performance tests for critical security interests, including protective force tests (e.g.,	- Observe operations and conduct technical assessments and performance tests that examine the effectiveness of security and safety programs and policies, giving priority to the highest security interests, such as strategic quantities of special nuclear material, and activities that present the most significant safety risks to workers and the public, such as nuclear facilities and operations; - Conduct performance tests for critical security interests, including protective force tests (e.g.,	Increase supports Independent Assessment activities.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
force-on-force exercises) using weapons simulation systems and a specially trained composite adversary team to assess overall effectiveness; • Conduct limited-notice performance testing of site protective forces to maximize response realism and broaden the spectrum of tested threat scenarios; • Conduct performance assessments of the implementation of the Department’s insider threat program to deter, detect, and mitigate potential insider threats posed by Federal and DOE contractor employees; • Conduct announced and unannounced internal and external network penetration testing to provide a full understanding of a site’s cybersecurity protection posture; • Conduct the annual independent evaluation of DOE classified information systems security programs as required by the Federal Information Security Modernization Act; • Conduct an annual evaluation of DOE classified information systems security programs for systems that process intelligence information on behalf of the DOE Office of Intelligence and Counterintelligence; • Provide input to the DOE Office of Inspector General for the annual evaluation of the DOE unclassified information systems security program; • Conduct annual “red team” cybersecurity performance assessments of the computer networks within the National Nuclear Security Administration nuclear weapons sites and laboratories; • Conduct targeted reviews of selected nuclear	force-on-force exercises) using weapons simulation systems and a specially trained composite adversary team to assess overall effectiveness; • Conduct limited-notice performance testing of site protective forces to maximize response realism and broaden the spectrum of tested threat scenarios; • Conduct performance assessments of the implementation of the Department’s insider threat program to deter, detect, and mitigate potential insider threats posed by Federal and DOE contractor employees; • Conduct announced and unannounced internal and external network penetration testing to provide a full understanding of a site’s cybersecurity protection posture; • Conduct the annual independent evaluation of DOE classified information systems security programs as required by the Federal Information Security Modernization Act; • Conduct an annual evaluation of DOE classified information systems security programs for systems that process intelligence information on behalf of the DOE Office of Intelligence and Counterintelligence; • Provide input to the DOE Office of Inspector General for the annual evaluation of the DOE unclassified information systems security program; • Conduct annual “red team” cybersecurity performance assessments of the computer networks within the National Nuclear Security Administration nuclear weapons sites and laboratories; • Conduct targeted reviews of selected nuclear	

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
safety functional areas across the DOE complex based on such factors as performance trends, changes to applicable requirements, and/or performance information gaps; • Maintain the nuclear safety site lead program to monitor the status of DOE nuclear facilities and activities and facilitate the selection and execution of risk-informed assessment activities; • Conduct risk-informed reviews of worker safety and health programs; • Conduct reviews to assess performance of emergency planning, preparedness, and response and recovery capabilities; • Conduct special reviews and studies of security and safety policies, programs, and implementation to identify needed program corrections; • Develop reports to communicate security and safety performance, findings, and opportunities for improvement; • Develop and broadly disseminate assessment report abstracts of key results to promote performance improvements; • Continuously analyze results, and develop periodic summary reports that identify cross-cutting issues and performance trends; • Conduct follow-up performance reviews to evaluate corrective action effectiveness; and • Provide lessons learned and trending of assessment results to the NTC to be used to develop or amend security and safety curricula to enhance performance of the workforce.	safety functional areas across the DOE complex based on such factors as performance trends, changes to applicable requirements, and/or performance information gaps; • Maintain the nuclear safety site lead program to monitor the status of DOE nuclear facilities and activities and facilitate the selection and execution of risk-informed assessment activities; • Conduct risk-informed reviews of worker safety and health programs; • Conduct reviews to assess performance of emergency planning, preparedness, and response and recovery capabilities; • Conduct special reviews and studies of security and safety policies, programs, and implementation to identify needed program corrections; • Develop reports to communicate security and safety performance, findings, and opportunities for improvement; • Develop and broadly disseminate assessment report abstracts of key results to promote performance improvements; • Continuously analyze results, and develop periodic summary reports that identify cross-cutting issues and performance trends; • Conduct follow-up performance reviews to evaluate corrective action effectiveness; and • Provide lessons learned and trending of assessment results to the NTC to be used to develop or amend security and safety curricula to enhance performance of the workforce.	
<i>Program Management Improvement</i> \$0	<i>Program Management Improvement</i> \$1,500,000 • Support the implementation of Program Management Improvement Accountability Act	<i>Program Management Improvement</i> +\$1,500,000 Increase supports implementation of Program Management Improvement Accountability Act

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
	requirements within the Department. • Coordinate the development and implementation of a Department principle-based policy that demonstrates the Department's commitment to improving program management through a governance structure that establishes high-level expectations and direction for the development and implementation of operational-specific program management systems. • Coordinate the development and implementation of strategies to strengthen program management capacity to build and sustain a capable program management workforce. • Coordinate the development and implementation of a process for conducting portfolio reviews that assess performance and identify noteworthy practices, opportunities for improvement and barriers to achieving strategic outcomes or specific program or project objectives.	requirements within the Department.
Other Related Expenses \$5,112,000	\$5,029,000	-\$83,000
• Working Capital Fund (WCF) fees, based on guideline estimates issued by the working capital fund manager, for the cost of common administrative services such as building occupancy and alterations, computer and telephone infrastructure and usage, mail service, copying, printing and graphics, procurement closeouts, supplies, online learning, computer network support, and payroll processing; • Federal employee training to obtain and/or maintain the technical competence of EA Federal employees, assuring that Federal	• Working Capital Fund (WCF) fees, based on guideline estimates issued by the working capital fund manager, for the cost of common administrative services such as building occupancy and alterations, computer and telephone infrastructure and usage, mail service, copying, printing and graphics, procurement closeouts, supplies, online learning, computer network support, and payroll processing; • Federal employee training to obtain and/or maintain the technical competence of EA Federal employees, assuring that Federal	Decrease reflects reduction in Working Capital Fund fees offset by increased information technology costs.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
personnel are fully capable of performing missions of the Department; and • The Energy Information Technology Services that provide a single point of contact for all common information technology systems and services at DOE Headquarters, promoting security, service, and efficiency.	personnel are fully capable of performing missions of the Department; and • The Energy Information Technology Services that provide a single point of contact for all common information technology systems and services at DOE Headquarters, promoting security, service, and efficiency.	

Legacy Management

FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
\$154,606	\$158,877	\$303,029

Overview

The Office of Legacy Management (LM) assists the Department in providing a long-term solution to the environmental legacy of the Cold War and ensures that Department of Energy (DOE) fulfills its long-term commitments to: protect human health and the environment; preserve and share records and information about sites where active remediation is complete, and provides post-retirement benefits to former contractor workers. By funding the long-term activities at 103 closed sites in LM, other DOE programs are able to concentrate on risk reduction and site closure at the remaining operating sites.

LM provides funding for Long-Term Surveillance and Maintenance (LTS&M), Archives and Information Management (AIM), Pensions and Benefits Continuity, Asset Management, Environmental Justice (EJ), Communication, Education, and Outreach (CEO), and Program Direction.

Highlights and Major Changes in the FY 2020 Budget Request

LM will continue its core activities at \$144.2 million above the FY 2019 funding level. The funding levels of the program request will allow LM to perform LTS&M at 103 sites, provide funding for payment of post-retirement benefits to almost 10,000 former contractor employees and their spouses, provided any residual support and capture lessons learned on our terminated pension plans, manage records and information, pursue beneficial reuse of properties, engage the public and perform outreach, and support an interagency agreement to address abandoned uranium mines.

The Budget Request includes \$141,000,000 to support the reform proposal to consolidate funding for Formerly Utilized Sites Remedial Action Program (FUSRAP) in LM with the U.S. Army Corps of Engineers (USACE) continuing to conduct the work. Program management of FUSRAP will return to DOE. USACE will continue to conduct cleanup of FUSRAP sites on a reimbursable basis. Consolidating cleanup programs under a single agency will allow the U.S. Department of Energy to consider the full range of cleanup responsibilities in prioritizing work each fiscal year.

**Legacy Management
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Legacy Management				
Legacy Management				
Long-Term Surveillance and Maintenance	48,658	50,361	201,976 ¹	+151,615
Environmental Justice	1,643	1,731	1,877	+146
Archives and Information Management	16,211	18,274	17,737	-537
Pension and Benefit Continuity	60,000	57,519	50,300	-7,219
Asset Management	10,762	11,282	9,824	-1,458
Communication, Education, and Outreach	400	1,408	2,053	+645
Subtotal, Legacy Management	137,674	140,575	283,767	+143,192
Program Direction	16,932	18,302	19,262	+960
Total, Legacy Management	154,606	158,877	303,029	+144,152
Federal FTEs	69	71	75	+4

¹ Request includes proposed appropriations in the amount of \$141,000,000.00 to administrate the Formerly Utilized Sites Remedial Action Program as authorized by Section 611 of the Energy and Water Development Appropriations Act, 2000 (P.L. 106-60; 10 U.S.C. 2701 note), as Amended.

Legacy Management
Explanation of Major Changes (\$K)

FY 2020 Request vs FY 2019 Enacted

- | | |
|---|-----------------|
| <ul style="list-style-type: none"> • Long-Term Surveillance and Maintenance: The increase supports a reform proposal to transfer program management of FUSRAP from USACE to DOE. The increase also supports the following: the transfer of new sites to LM, the planning and construction costs associated with decommissioning the evaporation pond at the Shiprock site, additional work at the Tuba City site, the construction costs for the backwash basin at the Fernald site, moving the budget for the Uranium Leasing Program from Asset Management to LTS&M, and DOE's defense-related uranium mines work at Native American sites. | +151,615 |
| <ul style="list-style-type: none"> • Environmental Justice: Increase in Science, Technology, Engineering, and Mathematics (STEM) and tribal outreach. | +146 |
| <ul style="list-style-type: none"> • Archives and Information Management: Decrease is primarily due to planned replacement cost for an electronic records keeping system in FY 2019 that is not required in FY 2020. | -537 |
| <ul style="list-style-type: none"> • Pension and Benefit Continuity: Decrease due to actions taken to convert LM's last pension plan to a privatized annuity program. LM will continue to be responsible for ongoing post-retirement benefits. | -7,219 |
| <ul style="list-style-type: none"> • Asset Management: Decrease due to moving the Uranium Leasing Program from Asset Management to LTS&M. | -1,458 |
| <ul style="list-style-type: none"> • Communication, Education, and Outreach: Increase in communications with stakeholders and increased press encounters (i.e. Denver, Cincinnati, and Albuquerque). Reflects an effort to proactively engage public interest and address media scrutiny of our highly sensitive mission. | +645 |
| <ul style="list-style-type: none"> • Program Direction: Increase supports 4 additional FTEs to satisfy demands of a larger site portfolio. | +960 |

Total, Legacy Management	+144,152
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Legacy Management

Overview

LM contains essential elements to assist in protecting human health and the environment and ensuring a long-term solution to the Cold War's environmental legacy. LM is performing Long Term Surveillance & Maintenance at closed and remediated sites, management of legacy archives and records, providing pension and post-retirement benefits to former contractor workers, asset management of the Department's real and personal property and provides communication, education, and outreach to the public, intergovernmental collaboration, and effective dialogue with tribal nations integral.

Long-Term Surveillance and Maintenance

This activity is required for remediated sites that have been closed. Before transferring to LM, cleanup is performed to a level that protects human health and the environment, and treatment systems are in place if there are contaminants in water. DOE maintains the sites to ensure cleanup remains protective of human health and the environment. Site conditions must meet the regulatory requirements established by state and federal agencies in cooperation with local governments, Tribal Nations, and public stakeholders.

The funding requested for FY 2020 will allow LM to monitor and conduct LTS&M and implement additional institutional control commitments at its sites in accordance with legal, contractual and regulatory agreements. Routine functions include soil, water, and air monitoring, long-term treatment of contaminants, maintenance of disposal cells, and security. Funding for this activity is required to meet legal and regulatory requirements for LM sites. LM is planning to manage 98 sites by the close of FY 2019 and 103 sites by the close of FY 2020. LM is also planning projects to understand and address maintenance issues at Rocky Flats, Fernald, and other sites.

LM led the effort to produce the defense-related uranium mines (DRUM) report as required by Congress and delivered in August 2014. One conclusion of the report was there are still numerous data gaps associated with abandoned uranium mines. These data gaps need to be addressed in order to fully comply with the intent of Congress. Beginning in FY 2016, DOE has participated in intergovernmental coordination efforts to fill the data gaps and quantify the risks. The funding requested for FY 2020 will support LM's continued involvement in a multi-agency effort to fill existing data gaps and to validate and verify existing information at 500 mines. This effort will help DOE better define potential safety and environmental issues at DRUM sites.

This activity also includes management of lease tracts for royalties paid to the US government from uranium production on Bureau of Land Management BLM managed lands in Colorado. Uranium lease management continues to strengthen LM's capacity for long-term management of uranium-mine-related issues.

This activity also supports LM and USACE's reform proposal to transfer program management of FUSRAP from the USACE to DOE. The LM program manages DOE's responsibilities related to a 1999 interagency Memorandum of Understanding with USACE that defines the roles in executing FUSRAP. The FUSRAP program was created in 1974 to clean up non-federally owned properties with radiological contamination resulting from Manhattan Engineering District or Atomic Energy Commission activities. DOE was responsible for the program until 1997, when Congress transferred administration and execution of cleanup to USACE. The FY 2020 Budget Request includes \$141,000,000 to return program management of FUSRAP to DOE. USACE will continue to conduct cleanup of FUSRAP sites on a reimbursable basis. Consolidating cleanup programs under a single agency will allow DOE to consider the full range of clean up responsibilities in prioritizing work each fiscal year.

A related cost, directly supporting this activity and embedded within the total activity cost, is safeguards and security for LM properties. The costs include protective forces and physical security systems, as follows (in whole dollars): FY 2018 - \$186,000; FY 2019 - \$190,000; and FY 2020 - \$131,000. The cost is derived from protective forces and physical security systems as planned for the Weldon Spring and Fernald sites.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations, directed each Federal agency to make achieving EJ part of its mission. LM provides leadership and coordination of Departmental EJ activities and represents the Department in interagency planning and activities. The FY 2020 funding

continues actions under a Memorandum of Understanding that includes participation from 17 Federal agencies to work collaboratively with communities to increase their ability to sustain a healthy quality of life.

Archives and Information Management

LM is the custodian of legacy physical and electronic records for LM sites, including the major closure sites of Fernald, Mound, and Rocky Flats. LM is responsible for approximately 114,000 cubic feet of physical records and approximately 54 terabytes of electronic records. LM's responsibility in this area includes management of the records and information systems (e.g., the Licensing Support Network) associated with the Yucca Mountain Project (YMP), in compliance with the Federal Records Act.

Within this activity, LM provides records management services for its active program elements and maintains legacy archives of inherited collections, including paper and electronic records and records in other media. Elements include records management policy and procedure development, planning, and development of oversight processes and actions that guide and govern physical and electronic records management operations, including preservation efforts for fragile or deteriorating records. Functions within this activity encompass operational records retention, records maintenance and use, and records disposition processes and activities to ensure proper documentation of LM's environmental protection, and hazardous waste disposition-related policies and activities.

The activity includes responding to requests associated with the Freedom of Information Act (FOIA), Privacy Act, and other information requests (e.g., DOE stakeholders processing claims associated with the Energy Employees Occupational Illness Compensation Program Act). LM currently receives ~1,800 information requests each year.

This activity also provides LM's information management and technology needs. This work involves the coordination of information collection, storage, dissemination, and destruction as well as managing the policies, guidelines, and standards regarding information management. LM maintains its information technology (IT) infrastructure – including maintaining functional equipment, operating systems, and software capable of accessing electronic records – and provides planning, design, and maintenance of an IT infrastructure to effectively support automated needs (e.g., platforms, networks, servers, printers, etc.) and provides IT security for LM's unclassified computing networks. Specific accomplishments will include fully implementing a realistic programming level of performing IT projects, replacing a legacy electronic records keeping system, ongoing Drum support, and added Geographic Information System (GIS) capabilities and storage/manipulation of increasing drone-related data.

IT security involves all processes and activities pertaining to the securing of Federal data and systems through the creation and definition of security policies, procedures and controls covering such services as identification, authentication, and non-repudiation in accordance with Federal Information Processing Standards (FIPS) and the Federal Information Security Modernization Act of 2014. The cost of the embedded cyber security and information security functions are as follows (in whole dollars): FY 2018 - \$1,136,000; FY 2019 - \$1,203,000; and FY 2020 - \$1,243,000.

Pension and Benefit Continuity

This activity fulfills the Department's commitment to its former contractor employees who previously worked at sites prior to closure. For sites that have been closed following the end of active programs and completion of site remediation, LM is responsible for ensuring that former contractor employees, their dependents, and their beneficiaries receive the pensions and post-retirement benefits (PRB) that are part of the contractual agreements for the respective sites. Dependent upon the contract provisions for the respective sites, LM funds the contractor cost of providing retirement benefits to former contractor employees. These retirement benefits include pension plans, health insurance, health reimbursement account stipends, Medicare Part B reimbursement, and life insurance.

In FY 2020, the LM's last two pension plans will be terminated, which will transition plan assets to private insurance companies and thereby reduce LM liabilities. LM will continue to support the administration of PRB (healthcare and insurance) for the following sites: Fernald (OH), Grand Junction (CO), Mound (OH), Paducah (KY), Pinellas (FL), Portsmouth (OH), and Rocky Flats (CO). There are almost 10,000 participants other benefit plans (including spouses covered under the retiree medical plans). The total number of participants in these plans decrease over time due to a closed participant population and normal mortality.

Asset Management

LM manages tens of thousands of acres of land and other assets. This activity focuses on management of those assets – including administration of leases for property used in program functions, infrastructure and facility management – and on reuse or transfer of the real and personal property to other agencies or private interests. Transferring land to a private interest allows the land to be reused productively, reduces the Department’s “footprint” of the Cold War legacy, and enables resumption of local property taxes. Transfer of excess assets to non-DOE ownership is a priority. LM has disposed of more than ten properties since being created in FY 2004, and continues to evaluate assets for future property disposition. Asset Management also administers LM’s Environmental Management Systems (EMS) for maintaining environmental compliance and sustainably managing LM sites.

A related cost directly supporting this activity and embedded within the total activity cost is safeguards and security for LM properties. The costs include protective forces, physical security systems, personnel security, information security, and program management, as follows (in whole dollars): FY 2018 - \$ 862,000, FY 2019 - \$942,000 and FY 2020 - \$1,104,000.

Communication, Education, and Outreach (formerly Public Intergovernmental Engagement)

This activity provides for robust outreach to the public, intergovernmental collaboration, and effective dialogue with tribal nations integral to the Office of Legacy Management’s work. This activity focuses on ensuring that stakeholders are involved and informed of LM’s current and planned work. LM will proactively engage public interest and address media scrutiny of our highly sensitive mission.

**Legacy Management
Activities and Explanation of Changes**

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Long-Term Surveillance and Maintenance- \$50,361,0000	\$201,976,000	+\$151,615,000
- Accept responsibility for surveillance and maintenance of six additional sites by the end of FY 2019 for a total of 98 sites. - Conduct transition actions for sites prior to their transfer to LM. - Supports an interagency effort to address defense-related uranium mines.	- Accept responsibility for surveillance and maintenance of five additional sites by the end of FY 2020 for a total of 103 sites. - Conduct transition actions for sites prior to their transfer to LM - Supports an interagency effort to address defense-related uranium mines. - Supports new efforts for reclamation on DRUM sites on Native American lands. - Manage the Uranium Leasing Program. - Execute a reform proposal to return program management of FUSRAP from USACE to DOE.	- Increase supports the reform proposal to return program management of the FUSRAP program from USACE to DOE. - The increase supports the transfer of new sites to LM. - Increase supports the planning and construction costs associated with the decommissioning of the evaporation pond at the Shiprock site, additional work at the Tuba City site, and the construction costs for the backwash basin at the Fernald site. - Increase includes moving the Uranium Leasing Program from Asset Management to LTS&M. - Increase includes DOE's defense-related uranium mines work at Native American sites.
Environmental Justice (EJ)- \$1,731,000	\$1,877,000	+\$146,000
- Continue EJ functions as the Departmental focus for that program element. - Promote EJ functions in the communities affected by DOE closure actions.	- Continue EJ functions as the Departmental focus for that program element. - Promote EJ functions in the communities affected by DOE closure actions.	Increase in STEM and tribal outreach.
Archives and Information Management- \$18,274,000	\$17,737,000	-\$537,000
- Continue records/IT management functions for all sites and activities. - Accept responsibility for records/IT for sites transferred to LM during the fiscal year.	- Continue records/IT management functions for all sites and activities. - Accept responsibility for records/IT for sites transferred to LM during the fiscal year.	Decrease is primarily due to planned replacement cost for an electronic records keeping system in FY 2019 that are not require FY 2020.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
	Continue to preserve Yucca Mountain Project records and information systems in compliance with the Federal Records Act.	
Pension and Benefit Continuity- \$57,519,000	\$50,300,000	-\$7,219,000
- Continue to reimburse contractor costs for pensions and/or PRB administration for seven sites. - Support termination of pension plans for the retirees at three sites, as needed.	- Continue to reimburse contractor costs for PRB administration for seven sites. - Continue efforts to reduce DOE's liabilities for retiree pensions and medical benefits while maintaining commitments to DOE's legacy contractor workforce.	Decrease due to actions taken to convert LM's last pension plan to a privatized annuity program. LM will continue to be responsible for ongoing post-retirement benefits.
Asset Management- \$11,282,000	\$9,824,000	-\$1,458,000
- Continue asset management support for 92 sites. - Add six sites by the end of FY 2019. - Manage infrastructure and facilities at LM sites. - Continue to increase and manage beneficial reuse initiatives at sites available for reuse.	- Initiate asset management support for five additional sites for a total of 103 sites. - Manage infrastructure and facilities at LM sites. - Continue to increase and manage beneficial reuse initiatives at sites available for reuse. - Establish public land withdrawals with the Department of the Interior that are associated with incoming sites.	Decrease due to moving the Uranium Leasing Program from Asset Management to LTS&M.
Communication, Education, and Outreach- \$1,408,000	\$2,053,000	+\$645,000
Continue to increase stakeholder awareness and engage the public.	Continue to increase stakeholder awareness and engage the public.	Increase communications with stakeholders and press encounters (i.e., Denver, Cincinnati, and Albuquerque). Reflects an effort to develop a more robust community relations effort for various sites and programs within LM.

Program Direction

Overview

The LM mission is carried out by a workforce composed mainly of contractors paid mostly from program funds. Oversight, policy, and inherently governmental functions (e.g., contract administration and budget formulation and execution) are provided by a federal workforce funded from program direction. Within the program direction subprogram, most costs are associated with Federal personnel salaries and benefits.

Highlights of the FY 2020 Budget Request

The FY 2020 request includes 4 additional FTEs (and additional travel and training costs) to address growing site management responsibilities.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	11,461	12,433	13,158	+ 725
Travel	790	820	830	+ 10
Support Services	2,190	2,544	2,615	+ 71
Other Related Expenses	2,491	2,505	2,659	+ 154
Total, Program Direction	16,932	18,302	19,262	+ 960
Federal FTEs	69	71	75	+4
 Support Services				
Technical Support				
System Definition	51	52	110	+58
Total, Technical Support	51	52	110	+58
 Management Support				
Manpower Systems Analysis	82	84	125	+41
Training and Education	21	21	250	+229
Analysis of DOE Management Processes	250	255	255	0
Reports and Analyses Management and General Administrative Support	1,786	2,132	1,875	-257
Total Management Support	2,139	2,492	2,505	+13
Total, Support Services	2,190	2,544	2,615	+ 71
 Other Related Expenses				
Other Services and Supplies	387	403	569	+166
Energy IT Services	324	342	523	+181
Working Capital Fund	1,780	1,760	1,567	-193
Total, Other Related Expenses	2,491	2,505	2,659	+ 154

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction- \$18,302	\$19,262	+\$960
Salaries and Benefits- \$12,433	\$13,158	+\$725
Continue functions to manage LM's activities in order to achieve LM's program goals.	- Continue functions to manage LM's activities in order to achieve LM's program goals. - Increase the number of federal employees to meet the additional site management responsibility and address defense-related uranium mine issues.	The increase will allow 4 additional FTEs.
Travel- \$820	\$830	+\$10
Travel enables staff to conduct surveillance and maintenance functions, business and site operations, oversight, and related activities.	Continue to conduct functions at a growing number of closed sites.	Increase in field activities with stakeholders.
Support Services- \$2,544	\$2,615	+\$71
Support services assist in the preparation of both routine and ad hoc reports. In addition, contractual support assists with staff training.	Continue effort to prepare more analyses and reports with Federal staff.	Additional Support Services is required to address responsibility for an increased number of sites.
Other Related Expenses- \$2,505	\$2,659	+\$154
Other services include LM's contribution to the DOE Working Capital Fund (WCF) as well as expenses not encompassed by the fund, supplies, computer software and hardware, and the Department's IT support.	Continue with procuring services and supplies at relatively the same level with the exception of WCF.	The increase is due to higher OCIO expenses.

**Legacy Management
Facilities Maintenance and Repair**

The Department's Facilities Maintenance and Repair activities are tied to its programmatic missions, goals, and objectives. Facilities Maintenance and Repair activities funded by this budget are displayed below.

Costs for Direct-Funded Maintenance and Repair (including Deferred Maintenance Reduction) (\$K)

	FY 2018 Planned Cost	FY 2019 Planned Cost	FY 2020 Planned Cost
Office of Legacy Management			
Comprehensive Environmental Response Compensation and Liabilities Act			
(CERCLA) Sites	1,149	1,600	1,078
Non-CERCLA Sites	3,257	3,025	3,696
Total, Direct-Funded Maintenance and Repair	4,406	4,625	4,774

Report on FY 2014 Expenditures for Maintenance and Repair

This report responds to legislative language set forth in Conference Report (H.R. Conf. Rep. No. 108-10) accompanying the Consolidated Appropriations Resolution, 2003 (Public Law 108-7) (pages 886-887), which requests the Department of Energy provide an annual year-end report on maintenance expenditures to the Committees on Appropriations.

**Legacy Management
Safeguards and Security Crosscut (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Protective Forces	548	558	719	+161
Physical Security Systems	137	139	149	+10
Information Security	6	6	21	+15
Cyber Security	1,130	1,197	1,222	+25
Personnel Security	34	35	35	0
Material Control and Accountability	0	0	0	0
Program Management	329	400	332	-68
Security Investigations	0	0	0	0
Transportation Security	0	0	0	0
Construction	0	0	0	0
Total, Safeguards and Security	2,184	2,335	2,478	+143

Highlights:

The total increase primarily includes an increase in protective forces at the Legacy Management Business Center and a reduction in programmatic security travel and support.

Office of Hearings and Appeals Program Direction

Overview

The Office of Hearings and Appeals (OHA) provides adjudicatory and conflict resolution services for DOE's programs so that disputes may be resolved at the agency level in a fair, impartial and efficient manner. The bulk of OHA work is defense-related and consists of the adjudication of security clearance cases that determine the eligibility of employees to have access to special nuclear material or classified information.

Within the Other Defense Activities Appropriation, OHA operates with three staffs: the Personnel Security and Appeals Division, the Employee Protection and Exceptions Division, and the Alternative Dispute Resolution Office (ADRO).

OHA offers fair, timely, impartial, and customer-friendly processes for adjudicating matters pursuant to regulatory authority or special delegation from the Secretary. Such matters include: (i) eligibility for a security clearance, (ii) whistleblower protection for employees of DOE contractors, (iii) Freedom of Information Act and Privacy Act appeals, (iv) relief from DOE product efficiency regulations to prevent special hardship, and (v) and other matters that the Secretary may delegate. With respect to alternative dispute resolution, OHA's ADRO offers mediation and other services for a variety of matters.

Highlights of the FY 2020 Budget Request

The FY 2020 Budget Request supports a staff of 22 FTEs needed to accomplish OHA's primary mission of adjudicating security clearance cases, adjudicating Freedom of Information Act and Whistleblower cases, as well as providing ADR support for the Department.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Program Direction				
Salaries and Benefits	4,156	4,259	3,300	-959
Travel	40	45	60	+15
Support Services	44	50	90	+40
Other Related Expenses	1,365	1,385	1,402	+17
Subtotal, Program Direction	5,605	5,739	4,852	-887
Use Prior Year Balances	0	-2,000	0	+2,000
Total, Program Direction	5,605	3,739	4,852	+1,113
Federal FTEs	22	22	22	22
Support Services				
Legal Research Support	44	50	90	40
Other Related Expenses				
Energy IT Services	200	205	205	+0
Working Capital Fund	1,165	1,180	1,197	+17
Total, Other Related Expenses	1,365	1,385	1,402	+17

Program Direction

Activities and Explanation of Changes		
FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$5,739,000	\$4,852,000	-\$887,000
Salaries and Benefits \$4,259,000	\$3,300,000	-\$959,000
Supports current staffing level of 22 FTEs.	Supports staffing level of 22 FTEs.	Decrease (-\$959,000) reflects staff retirements and lower grade levels of newly hired staff.
Travel \$45,000	\$60,000	+\$15,000
Supports travel to conduct security hearings at DOE field locations.	Continuation of FY 2019 activities.	Increase (+\$15,000) to fund escalating travel costs for OHA on-site hearings and ADR
Support Services \$50,000	\$90,000	+\$40,000
Supports computer legal research services for FY 2019.	Supports computer research services for FY 2020.	Increase (+\$40,000) to fund escalating computer research service costs.
Other Related Expenses \$1,385,000	\$1,402,000	+\$17,000
Funding supports the Working Capital Fund (WCF), which provides for shared service costs and Departmental overhead expenses; Energy IT Services; and other services.	Continuation of FY 2019 activities.	Increase (+\$17,000) permits OHA to fund escalating overhead expenses.

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Other Defense Activities

Argonne National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
945	945	945
945	945	945

Total, Argonne National Laboratory

Brookhaven National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

250	250	250
250	250	250

Total, Brookhaven National Laboratory

Chicago Operations Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

50	50	50
50	50	50

Total, Chicago Operations Office

Consolidated Business Center

Environment, Health, Safety and Security

Environment, Health, Safety and Security

259	259	259
259	259	259

Total, Consolidated Business Center

Fernald Site

Office of Legacy Management

Legacy Management

11,040	12,276	13,231
11,040	12,276	13,231

Total, Fernald Site

Grand Junction Office

Office of Legacy Management

Legacy Management

37,931	44,961	51,531
37,931	44,961	51,531

Total, Grand Junction Office

Idaho National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

150	150	150
150	150	150

Total, Idaho National Laboratory

Idaho Operations Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

400	400	400
400	400	400

Total, Idaho Operations Office

Kansas City National Security Complex (KCNSC)

Environment, Health, Safety and Security

Environment, Health, Safety and Security

10	10	10
10	10	10

Total, Kansas City National Security Complex (KCNSC)

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Other Defense Activities

Lawrence Livermore National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
3,050	3,050	3,050
3,050	3,050	3,050

Total, Lawrence Livermore National Laboratory

Lexington Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

200	200	200
200	200	200

Total, Lexington Office

Los Alamos National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

95	95	95
95	95	95

Total, Los Alamos National Laboratory

Morgantown Office

Office of Legacy Management

Legacy Management

16,211	18,274	17,737
16,211	18,274	17,737

Total, Morgantown Office

Mound Site

Office of Legacy Management

Legacy Management

16,027	15,027	13,497
16,027	15,027	13,497

Total, Mound Site

Nevada Field Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

15	15	15
15	15	15

Total, Nevada Field Office

NNSA Albuquerque Complex

Environment, Health, Safety and Security

Environment, Health, Safety and Security

1,000	1,000	1,000
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Enterprise Assessments

Enterprise Assessments

150	150	150
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Total, NNSA Albuquerque Complex

1,150	1,150	1,150
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Oak Ridge Institute for Science & Education

Environment, Health, Safety and Security

Environment, Health, Safety and Security

1,305	1,305	1,305
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Total, Oak Ridge Institute for Science & Education

1,305	1,305	1,305
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Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Other Defense Activities

Oak Ridge National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
1,035	1,035	1,035

Total, Oak Ridge National Laboratory

1,035 1,035 1,035

Oak Ridge Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

2,795	2,795	2,795
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Total, Oak Ridge Office

2,795 2,795 2,795

Office of Scientific & Technical Information

Environment, Health, Safety and Security

Environment, Health, Safety and Security

300	300	300
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Total, Office of Scientific & Technical Information

300 300 300

Ohio Field Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

5	5	5
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Total, Ohio Field Office

5 5 5

Pacific Northwest National Laboratory

Environment, Health, Safety and Security

Environment, Health, Safety and Security

1,905	1,905	1,905
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Total, Pacific Northwest National Laboratory

1,905 1,905 1,905

Pantex Plant

Environment, Health, Safety and Security

Environment, Health, Safety and Security

10	10	10
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Total, Pantex Plant

10 10 10

Pinellas Site

Office of Legacy Management

Legacy Management

4,070	5,545	3,933
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Total, Pinellas Site

4,070 5,545 3,933

Portsmouth Gaseous Diffusion Plant

Office of Legacy Management

Legacy Management

5,900	5,700	5,100
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Total, Portsmouth Gaseous Diffusion Plant

5,900 5,700 5,100

Richland Operations Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

1,000	1,000	1,000
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Total, Richland Operations Office

1,000 1,000 1,000

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Other Defense Activities

Rocky Flats Site

Office of Legacy Management

Legacy Management

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
37,370	34,065	32,668
37,370	34,065	32,668

Total, Rocky Flats Site

Sandia National Laboratories

Environment, Health, Safety and Security

Environment, Health, Safety and Security

1,210	1,210	1,210
1,210	1,210	1,210

Total, Sandia National Laboratories

Savannah River Operations Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

500	500	500
500	500	500

Total, Savannah River Operations Office

Savannah River Site Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

10	10	10
10	10	10

Total, Savannah River Site Office

Washington Headquarters

Environment, Health, Safety and Security

Environment, Health, Safety and Security

Program Direction

114,174	117,320	123,109
68,253	69,000	72,881

Total, Environment, Health, Safety and Security

Hearings and Appeals

Program Direction

5,605	5,739	4,852
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Office of Legacy Management

Legacy Management

18,575	20,033	162,139
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Enterprise Assessments

Enterprise Assessments

23,918	23,918	23,918
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Program Direction

50,863	52,702	57,211
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Total, Enterprise Assessments

Specialized Security Activities

Specialized Security Activities

262,912	266,378	254,578
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Total, Washington Headquarters

544,300	555,090	698,688
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Weldon Spring Site Office

Office of Legacy Management

Legacy Management

7,482	2,996	3,193
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Total, Weldon Spring Site Office

7,482	2,996	3,193
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Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Other Defense Activities

Y-12 Site Office

Environment, Health, Safety and Security

Environment, Health, Safety and Security

Total, Y-12 Site Office

Total, Other Defense Activities

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
20	20	20
20	20	20
697,000	710,603	856,247

Departmental Administration

Departmental Administration

Departmental Administration

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Departmental Administration Overview
Proposed Appropriation Language

For salaries and expenses of the Department of Energy necessary for departmental administration in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), [~~\$261,858,000~~]~~\$210,923,000~~, to remain available until September 30, [~~2020~~]~~2021~~, including the hire of passenger motor vehicles and official reception and representation expenses not to exceed \$30,000, plus such additional amounts as necessary to cover increases in the estimated amount of cost of work for others notwithstanding the provisions of the Anti-Deficiency Act (31 U.S.C. 1511 et seq.): *Provided*, That such increases in cost of work are offset by revenue increases of the same or greater amount: *Provided further*, That moneys received by the Department for miscellaneous revenues estimated to total [~~\$96,000,000~~]~~\$93,378,000~~ in fiscal year [~~2019~~]~~2020~~ may be retained and used for operating expenses within this account, as authorized by section 201 of Public Law 95–238, notwithstanding the provisions of 31 U.S.C. 3302: *Provided further*, That the sum herein appropriated shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year [~~2019~~]~~2020~~ appropriation from the general fund estimated at not more than [~~\$165,858,000~~]~~\$117,545,000~~.
(*Energy and Water Development and Related Agencies Appropriations Act, 2019.*)

Explanation of Change

For FY 2020, the Office of Indian Energy Policy & Programs and the Office of International Affairs are requested as separate appropriations, outside of Departmental Administration.

Departmental Administration

(\$K)

FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
189,652	165,858	117,545	-48,313 ^a

Overview

The Departmental Administration (DA) appropriation funds 13 management and mission support programs that have enterprise-wide responsibility for administration, accounting, budgeting, contract & project management, congressional and intergovernmental liaison, information management & cybersecurity, life-cycle asset management, legal services, workforce diversity and equal employment opportunity, ombudsman services, small business advocacy, sustainability, technology transition activities and public affairs.

DA also includes Strategic Partnership Projects that are reimbursed by customers of the DOE laboratories; and receives Miscellaneous Revenues that can be used to offset costs notwithstanding the Miscellaneous Receipts Act. Additionally, DA is partially funded through Defense-Related Administrative Support (DRAS), Other Defense Activities, recognizing that DA supports administrative activities that benefit defense related programs, which account for approximately 73% of the overall DOE budget.

In FY 2020, the Office of Indian Energy Policy & Programs and EPSA are no longer funded in DA. The Budget also requests that the Office of International Affairs be funded in a separate appropriation due to its consolidations, activities, and multiple year funding requirements.

Highlights of the FY 2020 Budget Request

In FY 2020, the DA Budget reflects a dedication to strengthen enterprise-wide management and mission support functions, including the activities outlined below:

- **Chief Financial Officer (CFO):** Funding will support the effective management and financial integrity of DOE programs, activities and resources by developing, implementing, and monitoring DOE-wide policies and systems in budget formulation and execution, finance and accounting, internal controls and financial policy, corporate financial systems, and strategic planning. In FY 2020, CFO is requesting additional funds for corporate business systems to ensure compliance with new cyber security requirements and initiatives to enhance systems for streamlining business processes.
- **Office of Technology Transitions (OTT):** Funding will support OTT's operational requirements and enable OTT to operate the Technology-to-Market functions transferred and centralized from other offices. The FY 2020 Request will maintain adequate staffing to fulfill Congressional and Administration direction to increase Departmental engagement for the transition of new and evolving energy technologies to U.S. markets.
- **Chief Information Officer (CIO):** Funding will continue to support work on network modernization initiatives, which will include improving cybersecurity, scaling capacity commensurate with demand, and continuing to establish the foundation for future IT enterprise capabilities. In FY 2020, CIO is requesting additional staff to support critical functions and strategic priorities of the Department.
- **Chief Human Capital Officer (HC):** Funding will allow HC to maintain its operational capacity to carry out personnel actions and conduct strategic workforce planning related to proposed Departmental programmatic changes. As the FY 2020 Budget anticipates significant changes to several DOE programs and the composition of their federal staff, HC is strategically positioned to provide oversight of human capital matters, especially those that specifically impact changes to skill requirements of existing personnel and fluctuating staffing levels. This includes an emphasis on workforce planning and development of effective talent management strategies to ensure DOE can successfully perform its mission.

^a The Office of International Affairs is requesting \$36.1 million in funds under a separate appropriation in FY 2020, due to consolidations and multi-year funding requirements. Nearly half of the overall decrease in DA's funding request for FY 2020 is a result of IA moving out of the DA account.

Departmental Administration
Funding by Congressional Control (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Departmental Administration				
Office of the Secretary	5,300	5,395	5,119	-276
Congressional & Intergovernmental Affairs	6,200	6,200	5,895	-305
<i>Use of Prior Year Balances</i>	0	-2,000	0	+2,000
Chief Financial Officer	48,484	48,912	52,000	+3,088
Economic Impact & Diversity	10,169	10,169	9,494	-675
Office of Indian Energy Policy & Programs	18,000	0	0	0
Chief Information Officer	126,274	131,624	124,554	-7,070
Other Departmental Administration				
Management	54,745	55,385	54,358	-1,027
Project Management Oversight and Assessments	15,192	15,005	14,255	-750
Chief Human Capital Officer	25,513	26,125	24,316	-1,809
Office of Small & Disadvantaged Business Utilization	3,000	3,170	3,609	+439
General Counsel	33,000	33,075	33,075	0
Energy Policy and Systems Analysis	10,432	0	0	0
Office of Policy	0	10,010	8,000	-2,010
<i>Use of Prior Year Balances</i>	0	-7,500	0	+7,500
International Affairs	18,878	22,878	0	-22,878
Public Affairs	6,589	6,594	6,260	-334
Office of Technology Transitions	6,876	8,505	9,080	+575
Subtotal, Other DA	174,225	173,247	152,953	-20,294
Strategic Partnership Projects (SPP)	40,000	40,000	40,000	0
Total, Departmental Administration (Gross)	428,652	413,547	390,015	-23,532
Defense-Related Administrative Support (DRAS)	-143,000	-151,689	-179,092	-27,403
Subtotal, Departmental Administration (incl. DRAS offset)	285,652	261,858	210,923	-50,935
Miscellaneous Revenues				
Revenues Associated with SPP	-40,000	-40,000	-40,000	0
Other Revenues	-56,000	-56,000	-53,378	+2,622
Subtotal, Miscellaneous Revenues	-96,000	-96,000	-93,378	+2,622
Total, Departmental Administration (Net)	189,652	165,858	117,545	-48,313
Federal FTEs	1,132	1,142	1,074	-68

Defense-Related Administrative Support

Overview

Beginning in FY 1999, funding has been provided within the Other Defense Activities appropriation to offset expenses that support defense-related activities. This offset addresses the significant level of administrative support performed within DA offices in support of the Department's defense-related programs. The services provided by the offices within DA are performed without distinction between defense and non-defense related activities and provide benefit for all headquarters organizations proportionally.

Defense-Related Administrative Support Funding (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
Defense-Related Administrative Support	-143,000	-151,689	-179,092

Strategic Partnership Projects

Overview

The Strategic Partnership Projects (SPP) program provides funding to DOE's multi-purpose field offices and National Laboratories to finance the cost of products and services requested by non-DOE users, both foreign and domestic. The products and services provided by the Department under this program generally are not available from alternate sources and are either (1) a revenue program which results from a budgeted mission of the Department or (2) reimbursable work for non-federal entities where the sponsor is precluded by law from providing advance funding. The costs of the SPP program are offset by revenues received from the sale of products and services to customers and are managed to remain revenue neutral.

The SPP program includes a portion of the Department's Foreign Research Reactor Spent Fuel Program. This program, which involves the receipt and storage of foreign research reactor spent fuel, is provided for in the SPP program only to the extent of revenues provided.

The benefits for this program are: continued access to the Department's Laboratory complex and the availability of by-products for sale to non-federal customers. The SPP program satisfies the needs of our non-federal customers. For this reason, performance evaluation for this work is the responsibility of our customers. The success of this program is indicated by the steady influx of business from the targeted groups.

Strategic Partnership Projects Funding (\$K)

	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Chicago Operations Office	200	750	+550
Idaho Operations Office	1,000	1,000	0
Lawrence Berkeley Laboratory	3,500	3,500	0
National Energy Technology Laboratory	150	150	0
National Renewable Energy Laboratory	500	500	0
NNSA Albuquerque Complex	8,500	7,078	-1,422
Oak Ridge National Laboratory	19,350	20,222	+872
Richland Operations Office	100	100	0
Savannah River Ops Office	6,700	6,700	0
Total, Strategic Partnership Projects	40,000	40,000	0

**Revenues Associated with Strategic Partnership Projects
Funding (\$K)**

<u>Description of FY 2020 Activities</u>	FY 2019 Enacted	FY 2020 Request
Chicago Operations Office	200	750
Work with universities and state and local governments.		
Idaho Operations Office	1,000	1,000
Work with state and local governments.		
Lawrence Berkeley National Laboratory	3,500	3,500
- Additional university support for Composite Basic Science Research; - Independent Technical Assistance for Management and Treatment of Groundwater and Drinking Water; - Fabricate the components in the ALICE (A Large Ion Collider Experiment)-USA scope and ALICE ITS (Inner Tracking System) upgrade; - University of Washington for comprehensive Identification of Worm and Fly Transcription Factors; and - National Laboratory High Energy Physics for Particle Data Group.		
National Energy Technology Laboratory	150	150
Work with state and local governments.		
National Renewable Energy Laboratory	500	500
Work with state and local governments.		
NNSA Complex	8,500	7,078
- Consolidated Nuclear Solutions (CNS) National Security Complex support to long-term supply contracts with foreign governments to provide uranium fuel; - CNS - NA-23 Material Management & Minimization Nuclear Material Removal program - cost of recovery operations subsequently reimbursed by foreign customers; - Sandia National Laboratory support to state & local governments; and - Lawrence Livermore National Laboratory support to state and local governments		
Oak Ridge Operations Office	19,350	20,222
- Oak Ridge National Laboratory support to Intercomparison Studies Program—Bioassay Samples; Beam Dump Research & Development and Conceptual Design; Alice Barrel Tracking Upgrade; Development of Scalable Solvers; Mitigating Irradiation-Assisted Stress Corrosion Cracking, etc.; - SLAC (Stanford Linear Accelerator Center) National Accelerator Laboratory support to U.S./Japan Cooperative Program in High Energy Physics; - Oak Ridge Institute for Science and Education (ORISE) support to/for Radiation Emergency Assistance Center/Training courses, and Beryllium Lymphocyte Proliferation Testing; and - Pacific Northwest National Laboratory work with universities and state and local governments in the areas of Biomedical, High Performance Computing, Grid Modernization, Security and Incident Response, Advance Material Development, and Advance Manufacturing).		

Description of FY 2020 Activities

Richland Operations Office

- Work with Universities, State, and Local governments for training in support of disaster recovery, emergency response, fire protection, transportation, law enforcement, military readiness, technology deployment.

Savannah River Operations

- Savannah River Forest Service Timber Management program;
- Savannah River National Laboratory support to universities & institutions, state and local governments, and non-profit organizations; and
- South Carolina Institute of Archaeology and Anthropology cooperative agreement to comply with archaeological regulatory requirements needed to support the U.S. Forest Service Savannah River timber program.
- Savannah River site support for the receipt and management of foreign research reactor spent nuclear fuel

Total, Revenues Associated with Strategic Partnership Projects

FY 2019 Enacted	FY 2020 Request
100	100
6,700	6,700
40,000	40,000

Miscellaneous Revenues

Overview

The Departmental Administration account receives Miscellaneous Revenues from the following:

- Revenues associated with Strategic Partnership Projects (SPP) for the full-cost recovery of the cost of SPPs.
- Other Revenues received from the sale of by-products that have no cost associated with the Departmental Administration appropriation. These items are by-products of activities funded by other on-going Departmental programs and are collected as Miscellaneous Revenues. Included in this estimate are revenues collected from the Reimbursable Work program for Federal Administrative Charges.
 - Federal Administrative Charges – Revenues collected from other federal agencies as well as non-federal entities for reimbursable activity conducted by the Department in accordance with full-cost recovery policy.
 - Nuclear Production Office – Revenues generated from shipment of surplus Highly Enriched Uranium and Low Enriched Uranium for use in foreign research and test reactors.
 - Pittsburgh Naval Reactors Office - The Department of Navy reimburses the Pittsburgh Naval Reactors Office for the nuclear material burn-up while the core is in operation and when residual nuclear material is removed during refueling and defueling of the core. While nuclear material burn-up is relatively consistent across years, major fluctuations in this line item are attributable to the refueling and defueling schedules, which are based on ship availability and quantity of nuclear material left in the cores.
 - Other Revenues, including Timber Sales - Estimate based on current rate of collections for various miscellaneous revenues collected at all Department sites, including timber sales at Savannah River Site.

Miscellaneous Revenues

Funding (\$K)

	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Revenues Associated with Strategic Partnership Projects	-40,000	-40,000	0
Other Revenues	-56,000	-53,378	+2,622
<i>Federal Administrative Charges</i>	<i>-33,235</i>	<i>-30,713</i>	<i>+2,522</i>
<i>Nuclear Production Office</i>	<i>-4,044</i>	<i>-4,044</i>	<i>0</i>
<i>Pittsburgh Naval Reactors Office</i>	<i>-14,221</i>	<i>-14,221</i>	<i>0</i>
<i>Other Revenues, including Timber Sales</i>	<i>-4,500</i>	<i>-4,400</i>	<i>+100</i>
Total, Miscellaneous Revenues	-96,000	-93,378	+2,622

**Office of the Secretary
Program Direction**

Overview

The Office of the Secretary (OSE) provides leadership and policy direction to the Department of Energy (DOE) in its commitment to advance U.S. national security and economic growth through transformative science and technology innovation that promotes affordable and reliable energy through market solutions and meets our nuclear security and environmental cleanup challenges. The Department will make progress in achieving each of its goals through continued investments in scientific research, technology innovation, nuclear security, and environmental cleanup.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	4,765	4,765	4,489	-276
Travel	529	529	529	0
Support Services	0	0	0	0
Other Related Expenses	6	101	101	0
Total, Program Direction	5,300	5,395	5,119	-276
Federal FTEs	32	32	32	0
Other Related Expenses				
Training	6	6	6	0
Other Services	0	95	95	0
Total, Other Related Expenses	6	101	101	0

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$5,395,000	\$5,119,000	-\$276,000
Salaries and Benefits \$4,765,000	\$4,489,000	-\$276,000
Funding supports up to 32 FTEs in the Office of the Secretary, Deputy Secretary, and Under Secretaries for Science and Energy.	Continuation of activities.	Decrease in funding to align with OSE staffing level.
Travel \$529,000	\$529,000	\$0
Funding for the Office of the Secretary, Deputy Secretary, Under Secretaries for Science and Energy, and Special Assistants to travel in support of the Department's mission.	Continuation of activities.	No change
Other Related Expenses \$101,000	\$101,000	\$0
Training and course registration cost for OSE employees for essential training activities and support for security clearance investigations.	Continuation of activities.	No change

Chief Financial Officer Program Direction

Overview

The Office of the Chief Financial Officer (CFO) is responsible for the effective management and financial integrity of Department of Energy (DOE) programs, activities and resources by developing, implementing, and monitoring DOE-wide policies and systems in budget formulation and execution, finance and accounting, internal controls and financial policy, corporate financial systems, and strategic planning.

The primary functions of the CFO include:

- Serve as the principal advisor to the Secretary and other Departmental officials on matters relating to the Department's financial resources and performance management.
- Provide for and assure the financial integrity, formulation, execution, and analysis of the Department's annual and multi-year budget.
- Develop and maintain an integrated agency-wide financial accounting system.
- Provide required reports which include a description and analysis of the status of financial management in the Department, annual financial statements, audit reports, DATA Act reporting, and internal accounting and administrative controls systems.
- Prepare annual budget documentation for the Department of Energy's Working Capital Fund and manages the activities and execution of the Fund per policy.
- Manage the Department's performance tracking system, and serve as the Performance Improvement Office, the Department's principal advocate for improved performance management.
- Serve as the risk management office to the Department's effort to manage risk by systematically identifying, assessing and managing strategic, project, financial, and reputational risks across the Department.
- Budget for, and manage the Department of Energy Working Capital Fund.
- Develop program performance measures, manage the Department's performance tracking system, and serve as the Performance Improvement Office, the Department's principal advocate for improved performance management.
- Serve as the risk management office to the Department's effort to manage risk by systematically identifying, assessing and managing strategic, project, financial, and reputational risks across the Department.

Highlights of the FY 2020 Budget

The FY 2020 request is \$52,000,000, an increase of \$3,088,000 from FY 2019 enacted. It supports 222 full time equivalent employees which is an increase of 5 FTEs from FY 2019. With the additional funding, Office of the Chief Financial Officer (CFO) will continue to support the effective management and financial integrity of Department of Energy (DOE) programs, activities and resources by developing , implementing, and monitoring DOE-wide policies and systems in budget formulation and execution, finance and accounting, internal controls and financial policy, corporate financial systems, and strategic planning.

In FY 2020, CFO is requesting additional funds for corporate business systems to ensure compliance with new cyber security requirements and initiatives to enhance systems for streamlining business processes.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	31,847	30,800	31,377	+577
Travel	200	175	335	+160
Support Services	6,515	7,519	10,653	+3,134
Other Related Expenses	9,922	10,418	9,635	-783
Total, Program Direction	48,484	48,912	52,000	+3,088
Total FTEs	224	217	222	5
Support Services				
Management Support				
Corporate Business Systems	3,176	3,586	4,152	+566
System Support/Other Support Services	3,339	3,933	6,501	+2,568
Total, Support Services	6,515	7,519	10,653	+3,134
Other Related Expenses				
IT Services	1,950	1,900	2,000	+100
Security Clearance Investigations	0	428	108	-320
Training	140	125	292	+167
Rent/Utilities Oak Ridge Financial Payment Center	137	137	0	-137
Interagency Agreements	600	600	345	-255
Working Capital Fund	7,095	7,228	6,890	-338
Total, Other Related Expenses	9,922	10,418	9,635	-783

Program Direction

Activities and Explanation of Changes		
FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Salaries and Benefits \$30,800,000	\$31,377,000	+\$577
Funds 217 full-time equivalent employees (FTE).	Funds 222 FTE, an increase of 5 from FY 2019.	Increase reflects the additional FTE hires pay and benefits.
Travel \$175,000	\$335,000	+\$160,000
Supports travel requirements for 217 FTE and any Congressional travel.	Supports travel requirements for 222 FTE and any Congressional travel.	Increase reflects the additional 5 FTEs and the travel requirements for the CFO and DCFO.
Support Services \$7,519,000	\$10,653,000	+\$3,134,000
The Corporate Business Systems (CBS) budget funds the operation and maintenance and cybersecurity requirements of the DOE financial, procurement, and human capital systems, including the Data Warehouse and Foreign Travel Management System. Funding is also provided for system support and other support services.	The FY 2020 CBS budget continues to fund the operation and maintenance and cyber security requirements of the DOE financial, procurement, and human capital systems, including the Data Warehouse and Foreign Travel Management System. Funding is also provided for system support and other support services.	Increase reflects compliance with new cyber security requirements and initiatives for budget formulation and accounting to enhance systems for streamlining business processes as well as implement the Foreign Travel Management System.
Other Related Expenses \$10,418,000	\$9,635,000	-\$783,000
Funding supports WCF, interagency agreements, employee training, and IT desktop support requirements. Funding also supports rent/utilities for the 12 FTE located at Oak Ridge.	Funding supports WCF, interagency agreements, employee training, and IT desktop support requirements.	Decrease supports corporate activities funded in the WCF and completion of security clearance investigations.

Office of Management Program Direction

Overview

The Office of Management (MA) provides centralized direction and oversight for the full range of management, procurement, administrative services, and conference management. These services are critical in supporting the mission of the Department and its program offices, as well as keeping the Headquarters (HQ) operational. MA's activities include policy development and oversight, delivery of procurement services to DOE Headquarters (HQ) organizations, and the management of HQ facilities.

In FY 2020, MA will accomplish its mission through its program office components and associated Departmental budget lines:

- Acquisition Management – Provide corporate oversight, leadership, and develop and assist in the implementation of DOE-wide policies, procedures, programs, and management systems pertaining to procurement and financial assistance, contract management, professional development, and related activities to provide procurement services to Headquarters elements.
- Administration – Manage HQ facilities and support services, including operations management, building, automation, lease and office space management, supply management, travel (domestic and international), transportation/courier services, concession services (through the General Services Administration), exchange visitor program, mail/printing service, and the Department's Freedom of Information Act (FOIA).
- Asset Management – Develop and maintain DOE policies, regulations, standards, and procedures while tracking performance pertaining to real estate, facilities and infrastructure management, and personal property to include motor vehicle fleet management. Manage DOE's real property database and excess screening process.
- Aviation Management – Manage all DOE-owned aircraft and contract aviation services world-wide by developing and implementing policies and procedures; provide technical and management assistance to program leaders and field elements with aviation responsibilities; and conduct oversight over all DOE elements that own or use aviation as a part of their mission.
- Directives Program – Manage the Department's Directive System, the primary system for establishing, promulgating, and maintaining long-term, crosscutting, departmental policies and procedures.
- Executive Secretariat – Facilitate quality document management of executive correspondence, departmental actions and decisions; ensure timely delivery of Congressional reporting requirements, executive commitments and information; serve as the Department's Federal Historic Preservation Officer; and manage the Department's Advisory Committee Management Program.
- Ombudsman – Provides an independent, confidential and informal option for all DOE federal employees to address any workplace issue and helps the Department's senior leaders, managers, and supervisors minimize unwarranted distractions; increase employee engagement; and expeditiously address individual and organization matters.
- Secretary of Energy Advisory Board (SEAB) – Administer and coordinate the activities of the Board and its subcommittees for the Secretary to obtain timely, balanced, and independent external advice on issues of national importance related to the missions of the Department.
- Scheduling and Advance – Manage scheduling, logistical, and advance preparations for the Office of the Secretary.
- Sustainability Performance Office (SPO) – Ensure implementation of statutory and executive requirements across the Department; coordinate data collection, reporting, and analysis of DOE's sustainability data, including energy, water, petroleum, and resource use; manage and implement DOE's Strategic Sustainability Performance Plan; and provide oversight of energy, water, sustainable building, and resource assessments at DOE sites and National Laboratories.

Highlights of the FY 2020 Budget Request

The FY 2020 Budget Request is \$55,385,000, a decrease of \$1,027,000 from the FY 2019 Enacted Budget. It supports up to 206 full time equivalent employees and includes a reallocation of funding to meet the staffing level for departmental needs in Acquisition Management and other mission focused areas.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Salaries and Benefits	31,861	31,861	34,069	+2,208
Travel	867	867	867	0
Support Services	6,958	7,408	4,173	-3,235
Other Related Expenses	15,059	15,249	15,249	0
Total, Program Direction	54,745	55,385	54,358	-1,027
Federal FTEs—MA	206	206	206	0
Federal FTEs—WCF	40	40	40	0
Support Services				
Management Support	4,476	4,926	1,691	-3,235
Other Support Services	2,482	2,482	2,482	0
Total, Support Services	6,958	7,408	4,173	-3,235
Other Related Expenses				
Training	151	151	151	0
Energy IT Services (EITS)	1,152	1,152	1,152	0
Working Capital Fund (WCF)	12,272	12,272	12,272	0
Other Services	1,484	1,674	1,674	0
Total, Other Related Expenses	15,059	15,249	15,249	0

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$55,385,000	\$54,358,000	-\$1,027,000
Salaries and Benefits \$31,861,000	\$34,069,000	+\$2,208,000
Funding in support of 206 FTEs. Funding provides for salaries/benefits, overtime, lump sum leave, and performance awards.	Additional funding in support of 206 FTEs provides for salaries/benefits, overtime, lump sum leave, and performance awards.	Additional funding supports critical acquisition positions and other mission focused positions up to the authorized ceiling of 206 FTEs.
Travel \$867,000	\$867,000	\$0
Funding in support of MA/SEAB staff travel; all travel associated with scheduling and logistics for Secretarial trips, meetings of the Laboratory Operations Board (LOB); travel associated with program oversight and evaluation, procurement, construction management activities. Includes the rental of vehicles from the General Services Administration motor pool and the DOE fleet.	Continuation of MA activities.	No change
Support Services \$7,408,000	\$4,173,000	-\$3,235,000
Funding in support of MA activities including contractual requirements, Acquisition Career Management Program (ACMP), Cross Agency Priority Goals, LOB, and Sustainability Performance Office (SPO) contractual requirements.	Funding supports continuation of MA activities including ACMP, Cross Agency Priority Goals, LOB, SPO contractual requirements, Freedom of Information Act (FOIA) processing costs and contractual requirements.	Decrease and realignment of funding to meet departmental service needs in support of staffing levels and operational efficiencies.
Other Related Expenses \$15,249,000	\$15,249,000	\$0
Other related expenses to cover EITS, WCF, training and other services necessary for organizational mission support.	Continuation of MA activities.	No change

**Chief Human Capital Officer
Program Direction**

Overview

The Office of the Chief Human Capital Officer (HC) supports DOE’s mission through workforce services, solutions, and innovations. In support of the Department, HC strives to provide the most efficient and effective human resources (HR) services and human capital programs to the Department of Energy (DOE). This is accomplished through collaborative and responsive partnerships, proactive problem identification and resolution, and innovative and sound human capital management services. HC advises and assists the Secretary and Deputy Secretary of Energy (and other agency officials) in recruiting, staffing, developing, training, and managing a highly skilled, productive, and diverse workforce, in accordance with merit system principles and all applicable statutory requirements.

Highlights of the FY 2020 Budget Request

The Department requests \$24,790,750 in FY 2020 for HC to support current operational levels and maintain HC’s vital customer service mission. This request will enable HC to maintain its operational capacity to carry out personnel actions and conduct strategic workforce planning related to proposed Departmental programmatic changes in the FY 2020 budget. The FY 2020 Budget anticipates significant workforce changes to several DOE programs. HC is strategically positioned to provide oversight of human capital matters that pertain to DOE programmatic priorities, changes to skill requirements of existing personnel, and fluctuating staffing levels; this includes an emphasis on workforce planning and development of effective talent management strategies to ensure DOE can successfully perform its mission.

HR Service Delivery

Aligned with the Department’s reform efforts, over the next several years, HC will further evaluate human capital functions to identify opportunities to improve the people, processes, and technologies of the HR line of business to ensure the success of the shared service structure. This includes implementing competency-based learning and development for HR professionals, establishing a single set of HC standard operating procedures and processes followed by all Shared Service Centers (SSCs), and implementing of the following automated tools:

- Corporate Entry on Duty System that streamlines end-to-end hiring process and improves how HC captures time-to-hire metrics, providing for a more efficient onboarding process for new employees, saving time on collecting paperwork, reducing the risk of losing important documentation, and automatically integrating onboarding documentation with HR and payroll systems of records.
- Corporate Learning Management System (Learning Nucleus), executed through an inter-agency agreement with the Office of Personnel Management (OPM) that integrates training-related functions (e.g., classroom registrations, online learning, Individual Development Plans), allowing for gained efficiencies in sharing training course catalogs and employee development resources across the Department.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	20,074	19,791	19,791	0
Travel	135	135	135	0
Support Services	300	800	800	0
Other Related Expenses	5,004	5,399	3,590	-1,809
Total, Program Direction	25,513	26,125	24,316	-1,809
Federal FTEs	146	146	134	0
Support Services				
Management Support				
Training and Education	100	100	100	0
Management Support, Other	200	700	700	0
Total, Support Services	300	800	800	0
Other Related Expenses				
Other Services	1,068	1,463	129	-1,334
Working Capital Fund	3,936	3,936	3,461	-475
Total, Other Related Expenses	5,004	5,399	3,590	-1,809

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$25,625,000	\$24,316,000	-\$1,809,000
Salaries and Benefits \$19,791,000	\$19,791,000	\$0
Provides for 146 full time equivalents (FTEs). In addition to salaries and benefits, funding is also provided for workers' compensation payments on behalf of all employees funded through the HQ Departmental Administration appropriation and two former employees receiving workers' compensation from the now closed Alaska Power Administration (APA). FTEs support core HC mission functions of: policy development, oversight and automation; learning and development; HR operations and services (including executive resources, staffing/classification, benefits and labor management relations); strategic alignment and measurement of human capital management; and internal business management.	Provides for up to 134 FTEs which support core HC mission functions as well as workers' compensation payments. Additional \$100K for ongoing workers compensation costs for two former federal employees of the now closed APA.	No change. Adjusted FTE level to reflect actual staffing level supported at existing budget level.
Travel \$135,000	\$135,000	\$0
HC staff travel includes program oversight, program evaluation, recruitment, and permanent change of station moves. Primary travel need is associated with OPM-mandated accountability audits critical to maintaining agency-delegated HR authority.	Continuation of required HC staff travel activities. HC will explore options to partner with other internal organizations and web and video conference as feasible.	No change.
Support Services \$800,000	\$800,000	\$0
Includes funding for: HC staff training; HC core contractors and services for the Oak Ridge Shared Service Center (OR SSC); and other minor items.	Continuation of activities.	No change.
Other Related Expenses \$5,399,000	\$3,590,000	-\$1,809,000

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Other Related Expenses (ORE) provides for Working Capital Fund (WCF) and Energy IT Services. Includes funding for HC-internal office administration needs (e.g., software and hardware, Council fees, small automation system support, and rent for HR Shared Service Center Oak Ridge (OR SSC) and HC's duty station facility in Albuquerque). HC's Albuquerque duty station partners with the Office of Health Safety and Security, to utilize existing space, reduce rent, and offset other increases.	Continuation of HC activities within the FY 2020 Budget and HC Headquarters Security Investigations. Reduced HC's overhead costs from consolidation of SSC MP & SE into one SSC (OR SSC) and in Energy IT service support.	Funding level in FY 2020 is sufficient to support programmatic needs.

Chief Information Officer

Overview

The Office of the Chief Information Officer (CIO) leads information technology (IT) and cybersecurity coordination across the entire DOE enterprise.

Highlights of the FY 2020 Budget Request

The FY 2020 request is \$124,554,000, which is \$7,070,000 or 5 percent less than FY 2019 Enacted. Modernizing DOE's IT infrastructure, services, and operations to a level consistent with the needed capacity, flexibility, and resiliency of a modern secure enterprise remains a key priority. The proposed modernization initiatives included in the FY 2020 request will continue to improve cybersecurity, scale capacity commensurate with demand, and establish IT enterprise capabilities allowing for commercial/managed service implementations of services with engineered and inherent cybersecurity capabilities, such as Virtual Datacenter services and Desktop-as-a-Service (DaaS), while providing foundational requirements for enhanced cybersecurity tools, products, and capabilities. In FY 2020, the CIO is placing an emphasis on balancing federal oversight and support with the pace of IT infrastructure investments reflected by an increased investment in our federal cyber and IT workforce.

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Chief Information Officer				
Cybersecurity				
Protecting Networks and Information (Protect)	35,056	30,829	12,722	-18,107
Detect, Analyze, and Mitigate Intrusions (Detect and Respond)	26,972	27,972	28,364	+392
Shaping the Cybersecurity Environment (Identify and Recover)*	8,846	12,700	11,769	-931
Total, Cybersecurity	70,874	71,501	52,855	-18,646
Corporate IT Program Support				
IT Portfolio Summary	13,265	11,666	13,107	+1,441
IT Infrastructure	2,000	3,456	7,355	+3,899
End User- EITS	5,230	4,697	4,535	-162
Total, Corporate IT Program Support	20,495	19,819	24,997	+5,178
Program Direction				
Salaries and Benefits**	18,192	21,607	26,501	+4,894
Travel	230	247	304	+57
Support Services	3,500	3,500	3,325	-175
Other Related Expenses	12,983	14,950	16,572	+1,622
Total, Program Direction	34,905	40,304	46,702	+6,398
Total, Chief Information Officer	126,274	131,624	124,554	-7,070
Federal FTEs	121	121	144	+23

* The FY 2018 Enacted reflects an execution change to move \$1,900,000 from Program Direction Salaries and Benefits to Cybersecurity Identify and Recover.

CIO Sources for Funding Activities	Total FY 2020 Request	WCF	Customer	Total
CYBERSECURITY				
Protecting Networks and Information (Protect)(1)	12,722	3,000	4,738	20,460
Detect, Analyze, and Mitigate Intrusions (Detect and Respond)	28,364	0	2,230	30,594
Shaping the Cybersecurity Environment (Identify and Recover)	11,769	0	7,844	19,613
TOTAL, CYBERSECURITY	52,855	3,000	14,812	70,667
CORPORATE IT PROGRAM SUPPORT				
IT Portfolio Summary (2)	13,107	9,813	0	22,920
IT Infrastructure	7,355		0	7,355
End User – EITS	4,535	33,268	74,528	112,331
TOTAL, CORPORATE IT PROGRAM SUPPORT	24,997	43,081	74,528	142,606
PROGRAM DIRECTION				
Federal Salaries & Benefits	26,501	0	0	26,501
Travel	304	0	0	304
Support Services	3,325	0	0	3,325
Other Related Expenses	16,572	0	0	16,572
TOTAL, PROGRAM DIRECTION	46,702	0	0	46,702
CIO payments into Shared Services and WCF (3)		(3,232)	(7,313)	(10,545)
Total, Chief Information Officer	124,554	42,849	82,027	249,430
Federal FTEs	144	0	0	144

¹ The WCF Cybersecurity estimate reflects the WCF request of \$3,000,000 for OPM credit monitoring under the Inter-Agency Transfers business line.

² The WCF Corporate IT Program Support reflects the WCF request for \$43,081,000 which is comprised of \$5,813,000 for the Inter-Agency Transfers business line and \$4,000,000 for Telecommunications business line under IT Portfolio Summary and \$33,268,000 is for End User – EITS Telecommunications business line.

³ CIO provides funds to Shared Services and WCF as a customer as well as the rest of the contributing program offices. In order to not double count those payments in the totals available, a bottom line adjustment was made.

Cybersecurity

Overview

The CIO leads the Department's cybersecurity program on behalf of the Secretary and in accordance with the Federal Information Security Modernization Act of 2014. The CIO also provides unclassified network services to DOE Headquarters and participating field sites. This includes protecting DOE networks and information; detecting, analyzing, and mitigating intrusions; providing continuous monitoring of the network and infrastructure; and managing the DOE cybersecurity environment. This section of the request provides a summary of the CIO FY 2020 cybersecurity budget request and provides amplifying information on the anticipated activities covered under the request.

CIO's FY 2020 request is a decrease of \$18,646,000 from the FY 2019 Enacted, while continuing a steady investment in core cybersecurity functions. Decreases reflect efficiencies and adjustments related to National Lab cybersecurity activities as well as the benefits achieved with increasing reliance on Continuous Diagnostics and Monitoring (CDM) activities. The CIO is placing an emphasis on balancing federal oversight and support with the pace of IT infrastructure investments reflected by an increase in our federal cyber and IT workforce staff. Of the Department's total anticipated cybersecurity budget, \$52,855,000 comes from direct appropriations within this request. The additional funds will be resourced from the Working Capital Fund (WCF) Inter Agency business line for credit monitoring and customer charge back; \$3,000,000 and \$14,812,000, respectively, for cybersecurity services and EITS. The FY 2020 request includes funding for ongoing cybersecurity programs, including policy management, security awareness training, data collection, and reporting. Funding will also provide additional capabilities and protections through the establishment and increased scope of program implementation for High-Value Assets (HVA), CDM, and network security modernization.

Highlights of the FY 2020 Budget Request

- Implement the CIO EITS Security Operations Center (SOC). This network security modernization initiative will provide a model site level SOC for the DOE enterprise. This initiative will result in a fully capable SOC in support of the DOE Federal enterprise, better aligned with other site-specific roles and responsibilities.
- Collaborate with Department of Homeland Security (DHS) to improve security protection for information and information systems/continuous diagnostic management--Continuous Diagnostics and Mitigation (CDM) across the entire DOE enterprise.
- Expand the HVA Program, which spans the lifecycle of the National Institute of Standards and Technology (NIST) Cybersecurity framework and is integrated with iJC3 functions for enhanced enterprise visibility and reporting. The program enables iJC3 focus on the Department's most critical assets, provides improved situational awareness, improved integrity of reporting, and prioritizes input into IT Modernization.
- Implement new cybersecurity products and services to protect the DOE IT infrastructure.

Funding Breakout and Analysis

This section summarizes the program and activities associated with the overall projected CIO cybersecurity budget. It captures activities under the following three budget lines:

- Protecting Networks and Information – Protect
- Detect, Analyze, and Mitigate Intrusions – Detect and Respond
- Shaping the Cybersecurity Environment – Identify and Recover

These three budget lines map to NIST core functions, while maintaining traceability to prior year requests. In some cases, programs like HVA will cross multiple budget lines. In those cases, activities and projected funding levels have been broken out and aligned.

Budget Line: Protecting Networks and Information - Protect (\$12,722,000 – Request; \$3,000,000 – WCF; \$4,738,000 Customer) (TOTAL = \$20,460,000)

Provide programs to protect DOE networks and the information which reside on them.

Activity: Cyber Supply Chain Management (\$658,000)

Sustains an enterprise Supply Chain Risk Management program (SCRM) that provides proactive, defense-in-depth supply chain security support for the DOE Enterprise. The Program also provides capabilities that guide, educate, and manage supply chain risks to National Security Systems and Information and Communications Technology (ICT) components and includes shared services, a common lexicon, and best practice procedures in procurement, delivery, and deployment of IT products and services that are used across the enterprise.

Activity: Coordinated Cyber Response (\$1,823,000)

Cyberfire develops cyber incident responder specialized skills needed to defend against and mitigate cyber threats through extensive training and provides advanced teams of incident responders for escalated cyber incidents.

Activity: ICAM (\$5,090,000)

Funding supports increasing the requirement for PIV or other Identity Assurance Level (IAL)/Federation Assurance Level (FAL)/Authenticator Assurance Level (AAL) for network access for privileged and un-privileged accounts. Funding will enable expansion of the digital identity repository of DOE sites, which will serve as the primary identity source for initial implementation of CDM phase 2 at DOE HQ supporting 9,000 identities. [Note: The DOE identity management service supports 308,016 identities of which 184,000 are current active identities. The 9,000 identities represent those identities which support the CDM implementation at DOE HQ only. This will expand as CDM is implemented across DOE.] The identity management service supports both the identity and credential information requirements of CDM. Funding will provide for expansion of federated authentication services of the DOE sites which, in turn, will result in raising the requirement for use of the proper credential based on a role-based risk assessment.

Activity: Operationalization of new products- (\$2,538,000)Funding supports operationalizing new Cybersecurity products or services, such as hardware, software, applications, and equipment designed to protect the DOE IT infrastructure and improve the Integrated Joint Cybersecurity Coordination Center (iJC3) ability to detect, report, respond and recover. These efforts are aligned to our agency priority goal to expand Departmental enterprise cybersecurity visibility by deploying sensors and integrating network security data into the iJC3. Additionally, operationalizing new cybersecurity products and services will enable more timely access to critical data, hunting across cybersecurity data utilizing advanced data analytics and automated process support.

Activity: Secure Communications for International Travel (Safe Passage) (\$2,613,000)

The Safe Passage Program addresses multiple security and risk-related issues with respect to senior DOE officials traveling to foreign countries while on official business. These vulnerabilities, if exploited, could provide reach-back to the internal DOE network upon a traveler's return and potentially be leveraged by remote adversaries to ex-filtrate data, monitor critical communications between senior staff, or in other malicious ways that would significantly impact or degrade the security and effectiveness of the DOE mission. The program will significantly reduce travel devices as potential attack vectors on the DOE IP networks, foster risk awareness and best practices for foreign travel, and protect DOE information resources and assets through the use of a dedicated pool of mobile devices for foreign travel, and additional staffing and tools to perform pre-trip and post-trip provisioning and forensic analysis of the devices.

This is a one-time cost to establish the program. In the future, ongoing annual recurring costs will be handled as part of full cost-recovery chargebacks to customers.

Summary of Funding from Working Capital Fund – Interagency business line (\$3,000,000)*

Credit Monitoring

Funds credit monitoring services for all DOE employees following the Office of Personnel Management (OPM) Personally Identifiable Information (PII) data breach.

Customer funding provided as part of EITS (\$4,738,000)*

*Cyber for EITS Protect (\$4,738,000)**

Funds for secure data transmissions to include Public Key Infrastructure (PKI) encryption.

** WCF and customer fund dollars include CIO contributions*

Budget Line: Detect, Analyze, and Mitigate Intrusions – Detect and Respond (\$28,364,000 – Request; \$2,230,000 Customer) (TOTAL= \$30,594,000)

Funding enables CIO to enhance and refine DOE's cybersecurity capabilities and approach to allow for nimble detection, analysis, and mitigation of cyber intrusions resulting in a DOE-centric cyber risk management approach that is aligned with the NIST Risk Management Framework and meets the needs of DOE's complex network environment. FY 2020 funding will enable the CIO to evaluate tools and technologies that can enhance the cybersecurity capabilities necessary to defend the Department against potential cyber adversaries. This activity also includes processes to introduce, test, pilot, and operationalize new cybersecurity products or services, such as hardware, software, applications, and equipment designed to protect the DOE IT infrastructure.

Activity: Detect High Value Assets (HVA) (\$1,880,000)

This funding will support detection through increased assessments, tracking of findings and remediation, and coordination of external auditing and reporting for DHS and the Office of Management and Budget (OMB). Resources to provide analysis, prioritization, visibility, and response for the current 24 HVAs are included in the request. HVAs are reviewed and assessed quarterly.

Activity: CyberOne (\$22,206,000)

Sub-Activity: Integrated Joint Cybersecurity Coordination Center (iJC3) (\$19,329,000)

The iJC3 provides cybersecurity threat analysis in coordination with DOE laboratories; conducts attack trending and tracking of advanced persistent threats; and distributes threat information and indicators of compromise to DOE entities in an automated manner. Additionally, it integrates DOE Incident Management capabilities and coordinates all enterprise activities including prevention, detection, containment, and recovery on both unclassified and classified networks through internal partnerships with the National Nuclear Security Administration (NNSA) and the DOE Office of Intelligence and Counterintelligence (IN). The iJC3 also coordinates communications for cybersecurity events and cyber emergency response with United States Computer Emergency Readiness Team (US-CERT) and other agency partners.

Sub-Activity: Cyber Intelligence (\$2,877,000)

The Cyber Federated Model (CFM) is an iJC3 service that provides machine-to-machine sharing of cyber threat intelligence, speeding up proactive defense and distributed detection for the National Laboratories and site offices. CFM can deliver signatures and indicators of compromise to automatically update cyber defenses, such as intrusion detection systems, intrusion prevention systems, and firewalls.

Activity: Network Security Modernization (\$4,278,000)

Funding supports modernizing DOE's network security through a secure, robust, and capable network, built on interoperable standards and architecture principles. Projects that make up the initiative, when completed, will support the DOE enterprise to improve cybersecurity, scale capacity commensurate with demand, and establish the foundation for future IT enterprise capabilities. Specifically, funding is needed in FY 2020 to implement a fully capable SOC, including additional staff, processes, and technology in support of the DOE enterprise, and to align with other site-specific roles and responsibilities. This initiative will provide a model site level SOC for the DOE enterprise, supporting complex-wide initiatives, such as the Metadata Taxonomy and Risk Management dashboards.

Customer funding provided as part of EITS (\$2,230,000)*

Cyber for EITS Detect (\$2,230,000)*

Funds for Antivirus Software and website filtering.

** WCF and customer fund dollars include CIO contributions*

Budget Line: Shaping the Cybersecurity Environment – Identify and Recover (\$11,769,000 – Request; \$7,844,000 Customer) (TOTAL = \$19,613,000)

The CIO is responsible for enterprise strategic cybersecurity policy, including establishing policies, managing investments in initiatives to support strategic direction, and establishing programs to promote outreach and effective risk implementation.

Activity: Planning, Policy and Enterprise Risk Management (\$1,880,000)

This activity supports organizing and capturing enterprise cyber risk management goals to make informative, risk-based cybersecurity decisions. It includes providing policy, guidance, strategies, and implementation plans through an exclusive Department Enterprise Risk Management - Cybersecurity (ERM-CS) initiative. CIO works closely with Department programs and sites to develop, document, and deploy fundamental approaches to cybersecurity and enterprise risk management. CIO leverages OMB Circular A-123 risk profiles containing cybersecurity risks. Strategic planning is also leveraged to identify critical cybersecurity gaps, establish priorities, and determine appropriate actions to improve the Department's cyber posture.

Activity: Identify and Recover High Value Assets (HVA) (\$2,820,000)

This activity supports the implementation of additional controls and expanded assessments to support Plan of Actions and Milestones (POAM) remediation. Tasks include the direct review of security requirements supporting HVA related IT Modernization efforts to support security enhancements in DHS specified risk areas: System Boundaries; Network Segmentation; Governance and Risk; Identity and Access Management; and Continuous Monitoring. Funding also supports development and implementation of an HVA Risk Management Dashboard, enabling integration of automated information feeds from enterprise risk platforms, assessment findings, and threat intelligence, and providing increased visibility of enterprise risk to the Department's most critical assets.

Activity: Reporting - Data Collection, Analysis, and Metrics (\$470,000)

Funding supports analyzing data to identify successful strategies, systemic weaknesses, anomalies, and root causes to ensure effective enterprise risk management and cybersecurity programs. This activity addresses weaknesses in FISMA and the President's Management Council's (PMC) reporting processes to ensure that DOE's security posture is accurately reported, to identify weak links in the overall posture, and to open lines of communication to facilitate information sharing. The activity supports evaluating the Agency and its program components, defining effective metrics, and identifying where additional effort is needed to further mature existing programs.

Activity: Security Modernization – Continuous Diagnostics and Mitigation (CDM) license renewals (\$1,500,000)

This funding is required to fund CDM license renewals in EITS and the Office of Science that cannot be funded by DHS. . Office of Science Headquarters and EITS are the only areas where tools have been procured and deployed through the CDM program. This funding only addresses enterprise licenses purchased by DHS through CDM that require CIO to cover the renewals no longer covered by DHS. CIO now has 100% participation from DOE sites in the scoping, deployment and implementation of enterprise CDM tools to provide scalable, risk-based, cost-effective cybersecurity solutions. In Q3 FY 2019, CIO will complete DOE CDM Phase 1 gap fill capability and gap assessment and tool selection/architecture design and then begin to procure, test and deploy tools. These activities will continue into FY 2020.

Activity: Requirements Analysis and Integration (\$4,230,000)

Activity supports collecting and building the enterprise architecture view and the list of Technical and Cybersecurity Requirements that inform implementation. Later in the project lifecycle, funds will be used to support maintaining status on cybersecurity certifications and controls implemented, hosting agreements, contract consolidations, and implementation approaches. Additionally, funds support continued design of the Shared Services architecture and process workflows for requested IT services across the enterprise. Enterprise implementation of like products, with separate installations, will start to reap the cost savings and value of moving to shared government solutions.

Activity: iJC3 Cyber Operational Technology (\$869,000)

Funding supports the discovery, cataloging, assessment, and monitoring of Operational Technology (OT).

Customer funding provided as part of EITS (\$7,844,000)*

Cyber for EITS (\$4,236,000)*

Funding provides for continuous monitoring, cybersecurity assurance and accreditation, and information systems security officer support for EITS customers.

Cyber for EITS (Assessment and Authorization (A&A) (\$3,608,000)*

Funding provides for A&A in cybersecurity control implementation, management and monitoring of EITS enclaves and subsystems to ensure compliance with Federal Information Security Management Act (FISMA) and National Institute of Standards and Technology (NIST) requirements. The CIO is planning to transition to Ongoing Authorization (OA), as a key part of the EITS Authorization Process that leverages the Information Security Continuous Monitoring (ISCM) strategy and program. The OA plan will utilize the guidance and best practices available from OMB, NIST, DHS and others. Maturation of the EITS ISCM is anticipated to provide efficiencies in future years.

** WCF and customer fund dollars include CIO contributions*

Cybersecurity

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
\$71,501,000	\$52,855,000	-\$18,646,000
Protecting Networks and Information (Protect) (\$30,829,000)	\$12,722,000	-\$18,107,000
Network Security Modernization Requirements Analysis and Integration ICAM Network security modernization, cyber supply chain management, secure communications for International Travel, and data collection and analytics are the planned initiatives.	Coordinated Cyber Response, Cyber Supply Chain Management, Secure Communications for International Travel and ICAM Credential and Access Management are the planned initiatives.	Decrease reflects network security modernization projects reprioritized to cover new FTEs and projects. Those projects are Core Infrastructure Expansion (-\$4,000,000), Application Rationalization (-\$4,500,000), Desktop as a Service (-\$1,000,000), and Digital Business Technology Platform (-\$3,520,000). Additionally, decreases of (-\$4,500,000) for Requirement Analysis and Integration, (-\$1,000,000) for Cyber Operational Technology Protection, and (-\$1,000,000) for High Value Assets Protect are attributed to a change in NIST Framework capabilities for FY 2020 to move from Protect to Identify. These decreases are offset by (+\$2,538,000) for Operationalize New Products or Services that moved from Identify to Protect. The remaining decrease of (-\$1,125,000) reflects requirements in the programmatic area.
Detect, Analyze, and Mitigate Intrusions (Detect and Respond) (\$27,972,000)	\$28,364,000	+\$392,000
Technical initiatives designed to identify, test, and scale solutions to protect DOE assets by employing new technologies throughout the Department. Introduces, tests, pilots, and operationalizes new cybersecurity products or services, such as hardware, software, applications, and equipment, designed to protect the DOE IT infrastructure.	Continue to enhance and refine DOE's cybersecurity capabilities and approach to allow for nimble detection, analysis, and mitigation of cyber intrusions resulting in a DOE-centric cyber risk management approach that is aligned with the NIST Risk Management Framework and meets the needs of DOE's complex network environment.	The increase is for a new network security modernization project requested for CIO EITS SOC (+\$4,278,000) less the offset for an overall reduction (-\$3,886,000) in the programmatic area.

Cybersecurity (Continued)

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Shaping the Cybersecurity Environment (Identify and Recover) (\$12,700,000)	\$11,769,000	-\$931,000
Focuses funding on Planning, Policy and Management as well as Analysis and Integration activities.	Network Security Modernization Project for CDM License Renewal, Cyber Operational Technology (OT) Protection and continuation of FY 2019 activities are the planned initiatives.	Decrease reflects Network Security Modernization projects reprioritized to cover new FTEs and projects. Those projects are Continuity of Operations/Disaster Recovery Planning (-\$1,700,000) and Cybersecurity Infrastructure upgrades (-\$3,800,000). Additionally, change in funding is attributed to a change in NIST Framework capabilities for FY 2020 to move from Protect to Identify for Operationalize New Products (-\$2,700,000), Requirements Analysis and Integration (+\$4,230,000), High Value Assets Protect (+\$940,000), and Cyber Operational Technology (+\$869,000). These changes are offset by a new project Network Security Modernization CDM (+\$1,500,000) and an overall 5% reduction (-\$270,000).

Corporate IT Program Support

Overview

CIO is requesting \$24,997,000 for Corporate IT Program Support, which provides capital planning guidance, strong privacy and records management, IT products and services, and an efficient and effective IT platform; this is an increase of \$5,178,000 over the FY 2019 Enacted.

Highlights of the FY 2020 Budget Request

The FY 2020 request supports an increase of \$3,000,000 for Data Center Modernization, \$650,000 for Making Electronic Government Accountable By Yielding Tangible Efficiencies (MEGABYTE) Act of 2016 Tool and \$500,000 for Enterprise Program Management Office (ePMO) Tools.

Budget Line: IT Portfolio Summary (\$13,107,000 – Request; \$9,813,000 – WCF) (TOTAL = \$22,920,000)

Activity: IT Policy, Governance, and Programs (\$12,442,000)

Sub-Activity: IT Investments for Mission Delivery and Management Support (\$3,083,000)

- Provide CIO governance advice and strategic recommendations and maintain project management reports.
- Develop and maintain knowledge base of emerging and disruptive technologies.
- Develop a comprehensive vision of next-generation IT with a focus on cross-cutting initiatives such as geospatial science and open data activities to support CIO in interagency and intergovernmental sharing of geospatial data.
- Lead implementation of Information Resource Management (IRM) Strategic Plan with relevant stakeholders, obtain feedback, and refine strategic documentation, as necessary.
- Provide analysis/assessment support and data analysis to aid in leadership decisions.
- Provide partnership engagement and facilitated analysis support to maintain collaborative dialog with program office stakeholders.

Sub-Activity: IT Investments for Enterprise Architecture, Capital Planning, and CIO Functions (\$4,503,000)

- Manage governance of DOE strategic IT investment portfolio to ensure alignment with DOE missions; oversee Capital Planning and Investment Control programs; and conduct portfolio analyses to drive IT investment decision-making.
- Lead IT planning, policy, and performance evaluation and manage strategic and tactical IT policy development, maintenance, and implementation through coordination with internal and external governance groups; and ensure DOE compliance with E-Government requirements.
- Provide DOE enterprise oversight, support, and coordination on cybersecurity and information management issues; and technical and administrative services for governance organizations to yield effective, efficient, and secure application of information and IT for mission enhancement, operational excellence, and risk management.

Sub-Activity: Policy and Performance Management (\$4,856,000)

- Stand up a records management solution for EITS and other e-mail customers.

Records Management (\$3,591,000)

Provides records management activities in accordance with National Archives and Records Administration (NARA) and other Federal agency requirements. Additional funds requested for stand up of an Enterprise-wide electronic records management solution, as mandated by NARA and OMB. The solution will enable the Department to manage all permanent electronic records, including e-mail, in an automated manner. Records management is largely managed locally and manually, resulting in a disjointed and error-prone approach to records management, including electronic records management. Funding is needed to support the initial deployment of the selected records management solution to cover all e-mail users that are provisioned by EITS, the Headquarters-based IT service provider. Subsequent implementation will address other record types, and eventually provide functionality for additional DOE stakeholders with an interest in information and document management, like Freedom of Information Act (FOIA) processors, litigation participants for eDiscovery, and enterprise privacy officials conducting searches under the Privacy Act. The solution will be offered initially as a service-for-use to meet the business needs, including CAPSTONE. CAPSTONE is an optional approach developed by NARA that Federal agencies can use to manage and dispose of e-mail records to meet the requirements in OMB guidance, Managing Government Records

Directive (M-12-18) to manage permanent and temporary e-mail records. DOE's adoption of the CAPSTONE approach was approved by NARA in FY 2017. The records management solution will support Departmental elements, both as they currently operate and as they participate in the consolidation to Office 365. The end result will be a secure and scalable enterprise-wide solution, providing a consistent, accessible, and automated approach to electronic document and records management requirements.

- *Privacy Information Management (\$765,000)*

Funds HQ-driven enterprise-wide privacy information management activities in accordance with Privacy Act, E-Government Act, and OMB Privacy directives to ensure compliance with federal laws, regulations, and standards, under the direction of the DOE Senior Agency Official for Privacy, who is also the CIO.

- *ePMO Tools (\$500,000)*

Resource to perform assessments, develop and maintain IT Project Management Dashboard, and Project Analysis and Prioritization.

Activity: IT Investments for IT Infrastructure, Security, and Management (\$665,000)

Sub-Activity: Spectrum Management (\$665,000)

The DOE Spectrum Program is mandated under Title 47, U.S. Code of Federal Regulations, 901, et. seq., and manages DOE radio frequency spectrum-dependent resources for NNSA, Power Marketing Administrations (PMAs), Office of Secure Transportation, and National Laboratory spectrum-dependent assets. As the 9th largest holder of radio frequencies with more than 7,300 individual radio assignments, the DOE Office of Spectrum Management (OSM) provides technical, logistical, and administrative support, as well as ongoing oversight and advocacy at an inter-agency level in the National Capital Region. There are 34 sites receiving services from OSM including Headquarters, the National Labs, the PMAs, and NNSA sites. Critical DOE missions and essential functions utilizing Spectrum services include the National Power Grid, Interstate Electricity Transmission, Satellite Missions, Nuclear Emergency Search, Radiological Assistance, Secure Transportation and Safeguards, and Protective Force Communications.

Summary of Funding from Working Capital Fund – Interagency Transfers business line (\$5,813,000)*

Records Storage at NARA

Funds annual agreement with NARA to provide records services and storage consistent with approved records schedules.

Integrated Acquisition Environment (IAE)

Funds required for Interagency Agreement with the General Services Administration (GSA) to provide packaged services.

E- Government initiatives

Initiatives include consolidation studies of lines of businesses and other intergovernmental systems.

Summary of funding from Working Capital Fund – Telecommunications- Network Refresh (\$4,000,000)*

Annual network technology refresh as part of lifecycle management is necessary to address current risks in the areas of security and availability in the core and distribution layers of existing DOE (Headquarters in particular) network infrastructure. By investing in a more modern network infrastructure, the Department will enhance network cybersecurity controls and will further support the collaboration capabilities being requested within the Department.

**WCF and customer fund dollars include CIO contributions*

Budget Line: IT Infrastructure (\$7,355,000 – Request; Total \$7,355,000)

Activity: E-mail Consolidation Project (\$3,705,000)

E-mail Consolidation Project for the migration of mailboxes supporting DOE federal on-premises unclassified e-mail systems to the Microsoft Office 365 cloud e-mail Software as a Service (SaaS). Currently, DOE operates multiple, separate e-mail systems across the enterprise, with the majority of them being Microsoft Exchange-based and being operated on-premises.

Consolidating multiple on-premises e-mail environments reduces risk by standardizing cybersecurity controls, improving visibility across the enterprise, and would decrease operating costs associated with on-premises hardware and storage requirements.

Cloud-based e-mail allows for scaling messaging services to accommodate future customer base changes without having to accommodate large infrastructure investments. Adoption of cloud-based e-mail also improves usability, availability, reliability, efficiency, and interoperability across the enterprise. Additionally, e-mail systems consolidation facilitates larger enterprise opportunities for standardization and consolidation of identity management, records management, and mobile solutions with associated reductions in O&M costs.

Activity: MEGABYTE Act Tool (\$650,000) - Tools to perform asset discovery identifying both hardware and software deployed throughout an organizational element, correlating software versions to the base software product using a commercial services, identifying assets that are no longer supported or are approaching end of vendor support therefore presenting a security risk, identifying software installed but no longer used that can be repurposed, assuring that all software deployed through the organizational element is properly licensed, and to provide necessary software inventory to support agency license agreements to achieve cost savings. DOE is currently engaged with GSA's SLMFast (Software License Management Service) program to assist DOE identify software tools and develop a roadmap to mature DOE's asset management program. Incremental software licenses to be acquired in FY 20 will support additional DOE elements. The planned strategy is to leverage asset discovery performed as part of the Continuous Diagnostics and Mitigation (CDM) program.

Activity: Data Center Modernization (\$3,000,000) - Funding is being requested to continue the migration of on-premises data center workloads to the DOE enterprise cloud Infrastructure as a Service (IaaS), Software as a Service (SaaS), Platform as a Service (PaaS) environments.

Budget Line: End User - EITS (\$4,535,000 – Request; \$33,268,000 – WCF; \$74,528,000 - Customer) (TOTAL = \$112,331,000)

Activity: EITS Payment (\$4,535,000)

Funds desktop services for the EITS business line.

Summary of Funding from Working Capital Fund – Telecommunications business line (\$33,268, 000)*

Provides connectivity for DOE Headquarters and field operations through Local and Wide Area Networks and telecommunications (telephone) services. LAN connections provide access to the EITS application host systems and cybersecurity for the internet, e-mail, and other applications.

Summary of Funding from Customers – Shared Services direct billing (\$74,528, 000)*

End User Services

Includes asset management, Tier 1/Tier 2 phone and deskside support, platinum support, and ServiceNow support.

**WCF and customer fund dollars include CIO contributions*

Corporate IT Program Support

Explanation of Major Changes		
FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
\$19,819,000	\$24,997,000	+\$5,178,000
IT Portfolio Summary (\$11,666,000)	\$13,107,000	+\$1,441,000
Includes IT Investments for Mission Delivery and Management Support (\$2,876,000), IT Investments for Enterprise Architecture, Capital Planning, and CIO Functions (\$4,200,000), Policy and Performance Management (\$3,970,000) and IT Investments for IT Infrastructure, Security and Management (\$620,000).	Includes IT Investments for Mission Delivery and Management Support (\$3,083,000), IT Investments for Enterprise Architecture, Capital Planning, and CIO Functions (\$4,503,000), Policy and Performance Management (\$4,856,000) and IT Investments for IT Infrastructure, Security and Management (\$665,000).	The increase is due to Enterprise Program Management Office (ePMO) Tools (+\$500,000) and increased efforts in the areas of Records Management and Privacy Information Management totaling (+\$941,000).
IT Infrastructure (\$3,456,000)	\$7,355,000	+\$3,899,000
E-mail Consolidation Project to migrate ~10,500 mailboxes supporting DOE Federal on-premises unclassified e-mail systems to the Office 365 cloud-based Software as a Service (SaaS).	Funding is being requested to continue the migration of on-premises data center workloads to the DOE enterprise cloud IaaS, Software as a Service, Platform as a Service environments.	The increase is for Data Center Modernization (+\$3,000,000), MEGABYTE Act Tool (+\$650,000) and E-mail Consolidation Project (+\$249,000).
End User - EITS (\$4,697,000)	\$4,535,000	-\$162,000
This funding pays for the EITS staff as customers of their own products.	Continuation of FY 2019 activities.	No significant change.

Program Direction

Overview

Program Direction provides \$46,702,000 for CIO federal staffing and associated costs for the overall management of CIO activities.

Highlights of the FY 2020 Budget Request

Request funds CIO corporate program management and operations, acquisitions/contract administration, human capital management and budget support, 144 FTEs, and Working Capital Fund requirements. This an increase of 23 FTEs from the FY 2019 request; the increase in FTEs is necessary to support critical functions of the organization, to include policy development, cybersecurity, privacy, records, quality assurance, data engineering, and program management.

Program Direction Funding (\$K)

	FY 2018 Enacted*	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Headquarters				
Salaries and Benefits	18,192	21,607	26,501	+4,894
Travel	230	247	304	+57
Support Services	3,500	3,500	3,325	-175
Other Related Expenses	12,983	14,950	16,572	+1,622
Total, Program Direction	34,905	40,304	46,702	+6,398
Federal FTEs				
Federal FTEs- Program Direction Funded	121	121	144	+23
Federal FTEs- WCF Funded	0	0	0	0
Total FTEs	121	121	144	+23
Support Services				
Technical Support Services	1,595	1,595	1,515	-80
Business, Finance, and Procurement	1,905	1,905	1,810	-95
Total, Support Services	3,500	3,500	3,325	-175
Other Related Expenses				
Training	120	130	123	-7
Working Capital Fund (WCF)	11,106	12,438	13,185	+747
Desktop Services	1,757	2,032	2,931	+899
Security Investigations	-	350	333	-17
Total, Other Related Expenses	12,983	14,950	16,572	+1,622

*The FY 2018 Enacted reflects an execution change of \$1,900,000 from Program Direction Salaries and Benefits to Cybersecurity Identify and Recover.

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$40,304,000	\$46,702,000	+\$6,398,000
Salaries and Benefits \$21,607,000	\$26,501,000	+\$4,894,000
(\$21,607,000) Funding supports federal staff salaries and related benefits for 121 FTEs.	(\$26,500,000) Increase of 23 FTEs.	(+\$4,894,000) Funding supports 144 FTEs. Increase of 23 FTEs in critical functional/programmatic areas of policy development, cybersecurity, privacy, records, quality assurance, data engineering, and program management.
Travel \$247,000	\$304,000	+\$57,000
(\$247,000) Supports mission-critical travel for federal staff	(\$304,000) Continuation of activities	(+\$57,000) Increase for travel associated with the increase in FTE level.
Support Services \$3,500,000	\$3,325,000	-\$175,000
(\$1,595,000) Sustain operations within the front office of the CIO. Funds support contractor activities and memberships/subscription services for the CIO and senior staff.	(\$1,515,000) Continuation of activities	(-\$80,000) No significant change.
(\$1,905,000) Funding used to maintain contractor activities in the areas of Financial Management, Budget and Internal Controls; Acquisitions; and Human Capital. These activities are critical to programmatic operations and accomplishment of program goals.	(\$1,810,000) Continuation of activities	(-\$95,000) Reduction reflects programmatic requirements..
Other Related Expenses \$14,950,000	\$16,572,000	+\$1,622,000
(\$130,000) Training costs to ensure all FTEs are appropriately trained to perform their duties, and development opportunities are available to CIO's federal staff.	(\$123,000) Continuation of activities	(-\$7,000) No significant change.

(\$12,438,000) WCF funding level accounts for estimated CIO as the customer costs, as well as overhead expenses.	(\$13,185,000) Continuation of activities	(+\$747,000) Additional funds required to cover the increase in overhead costs associated with the new FTEs.
(\$2,032,000) Desktop Services funds are used to provide IT services and hardware to employees.	(\$2,931,000) Continuation of activities	(+899,000) Additional funds required to cover the increase in overhead costs associated with the new FTEs.
(\$350,000) Security Investigations	(\$333,000) Continuation of activities	(-\$17,000) Reduction reflects programmatic requirements.



Department of Energy

Washington, DC 20585

March 8, 2019

U.S. Department of Energy Fiscal Year 2020 President's Budget Information Technology (IT) Resource Statement

In accordance with Office of Management and Budget (OMB) Circular A-11, Section 51.3, and as described in OMB Memorandum M-15-14, on behalf of the U.S. Department of Energy, we, the undersigned, do hereby affirm the following IT Resource Statements:

1. The Department's Chief Information Officer (CIO) collaborated with all component CIOs and the Department's Chief Financial Officer on the IT Budget submissions, and that IT includes appropriate estimates of all IT resources included in the President's Budget.
2. The CIO reviewed and had significant input in approving the Department's budget request for IT investments.
3. The CIO had a significant role in reviewing planned IT support for major programs and any significant changes in IT resources reflected in this budget.
4. The Department has fully implemented its common baseline FITARA responsibilities for Element D ("CIO reviews and approves major IT investment portion of budget request").
5. The CIO certifies that major IT investments are using incremental development practices.

Stephen (Max) Everett
Chief Information Officer
U.S. Department of Energy

Randall Hendrickson
Chief Financial Officer (*Acting*)
U.S. Department of Energy



Congressional and Intergovernmental Affairs Program Direction

Overview

The Office of Congressional and Intergovernmental Affairs (CI) focuses on accurate and timely communication of Administration and Departmental objectives and activities with Congress, state, local, and Tribal governments, and other stakeholder organizations. Specifically, CI:

- Directs, manages and ensures coordination between all Departmental organizations and their interaction with external stakeholders.
- Develops and recommends legislative strategies and engagements in alignment with Administration policy and DOE program initiatives.
- Monitors legislative activity to inform and advocate on behalf of the Department.
- Works with Members of Congress, staff, and committees to define, articulate, and advance the Administration's position on pending legislation.
- Provides timely notifications to Members of Congress, Governors, Mayors, and Tribal officials on DOE matters of specific interest including pending awards/grants/contracts that may have an impact upon the state, Tribal, congressional districts and other constituencies. Provides timely and complete responses to inquiries and requests for information.
- Coordinates and prepares Departmental officials for congressional briefings and meetings as well as gubernatorial and Tribal events.
- Directs and coordinates the preparation of congressional testimony, transcripts, pre- and post-hearing questions and answers, and other information provided for the record.
- Works with Governors, staff, local elected and appointed officials, as well as Tribal leaders to provide information on DOE activities and decisions; and to elicit concerns and interests for consideration in DOE decision processes.

Highlights of the FY 2020 Budget Request

The Department requests \$5,895,000 in FY 2020 for CI to maintain operational levels consistent with Departmental needs and Secretarial priorities. Funding will ensure CI can continue to provide accurate and timely communications of Administration and Departmental activities and objectives to Congress, State, local and tribal governments and external organizations.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	4,663	4,663	4,430	-233
Travel	95	65	62	-3
Support Services	246	250	191	-59
Other Related Expenses	1,196	1,222	1,212	-10
Subtotal, Washington Headquarters	6,200	6,200	5,895	-305
Use of Prior Year Balances	-	-2,000	-	+2,000
Total, Program Direction	6,200	4,200	5,895	+1,695
Federal FTEs	33	33	33	-
 Support Services				
Management Support				
Print and electronic information subscription services	100	100	71	-29
Contractor support	110	130	110	-20
Other, including office maintenance, furniture, etc.	36	20	10	-10
Total, Support Services	246	250	191	-59
 Other Related Expenses				
Training	25	13	35	+22
DOECOE	243	195	195	0
Working Capital Fund	928	1,002	972	-30
Other Services	0	12	10	-2
Total, Other Related Expenses	1,196	1,222	1,212	-10

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$6,200,000	\$5,895,000	-\$305,000
Salaries and Benefits \$4,663,000	\$4,430,000	-\$233,000
Provides funding for 33 FTEs to include salaries and benefits.	Continuation of current activities.	Reduction in grade of previously existing positions filled at lower grades.
Travel \$65,000	\$62,000	-\$3,000
Funding for travel requirements to support the Department's engagements with congressional, intergovernmental and other stakeholders.	Sufficient travel funding to meet demands and support Departmental engagement.	Travel funding request considered to be sufficient to meet demand.
Support Services \$250,000	\$191,000	-\$59,000
The majority of costs are related to the acquisition of annual subscriptions to information sources essential to ensure staff is well-informed of congressional and intergovernmental activities and interests.	Subscriptions will be reduced while still maintaining a well-informed office.	Unnecessary or duplicative subscriptions will be eliminated.
Other Related Expenses \$1,222,000	\$1,212,000	-\$10,000
Funds support business costs associated with the Department's Working Capital Fund (office space, phones, utilities, etc.); IT equipment and support; as well as staff development and training.	Continuation of current activities.	Reflects changes in business costs and allocations under the Working Capital Fund.

**Office of Small and Disadvantaged Business Utilization
Program Direction**

Overview

The Office of Small and Disadvantaged Business Utilization (OSDBU) is responsible for advocating the use of small businesses, including Small Disadvantaged Businesses (SDB), certified 8(a) businesses, small businesses from Historically Underutilized Business Zones (HUBZone), Service Disabled Veteran-Owned Small Businesses (SDVOSB), and Women-Owned Small Businesses (WOSB). This involves promoting small business prime and subcontracting opportunities in accordance with Federal laws, regulations, and policies and reporting to Congress on DOE utilization of small businesses.

The goals of the OSDBU are to institutionalize the use of small businesses and to fully integrate them into the U.S. Department of Energy's (DOE) competitive base of contractors and to help the Department of Energy meet statutory goals for small business utilization.

The OSDBU is not a procurement office, but serves as a liaison between the small business community and the DOE procurement offices. The Small Business Act of 1953 as amended by Public Law 95-507 established the OSDBU.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salary & Benefits	1,980	2,340	2,351	+11
Travel	44	50	71	+21
Support Services	516	170	553	+383
Other Related Expenses	460	610	634	+24
Total, Program Direction	3,000	3,170	3,609	+\$439
Federal FTEs	11	15	15	0
Other Related Expenses				
EITS	100	100	124	+24
Working Capital Fund	320	470	470	0
Training	40	40	40	0
Total, Other Related Expenses	460	610	634	+24

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
\$3,170,000	\$3,609,000	+\$439,000
\$2,340,000	\$2,351,000	+11,000
• Provides funding for 15 FTEs.	• Provides funding for 15 FTEs.	• Reflects adjusted staffing plan funds Within Grade Increases for current staff and the hiring of new staff
\$50,000	\$71,000	+\$21,000
• Funds travel for small business training, event participation and outreach, and one to one small business counseling.	• Funds travel for small business training, event participation and one to one small business counseling.	• Increase reflects inflation, additional staff and special emphasis programs
\$170,000	\$553,000	+\$383,000
• Funds contractor support for communications and management support services, and subscription services.	• Funds contractor support for management support services and subscription services.	• Increase reflects projected new award for advisory support service
\$610,000	\$634,000	+\$24,000
• Funds Working Capital Fund, IT services, and staff training and development, and other services.	• Funds Working Capital Fund, IT services, and staff training and development, and other services.	• Increase reflects inflation and additional requirements

Economic Impact and Diversity Program Direction

Overview

The Office of Economic Impact and Diversity (ED) advises the Secretary on the impact of energy policies, regulations, and DOE programs on minority communities, minority institutions, and specific segments of the U.S. population. Established in 1979, ED is tasked to increase minority participation in energy sector programs, pursuant to Section 641, Title VI, Part 3 of the National Energy Conservation Policy Act (NECPA) of 1978. ED also ensures compliance with Titles VI and VII of the Civil Rights Act of 1964; Title IX of the Education Amendments Act of 1972; and other anti-discrimination statutes.

The public laws that provide ED with its statutory grounding articulate the cornerstones of ED's public value proposition. These cornerstones are summarized as follows:

- Maximizing the impact of ED *economic development* efforts and initiatives.
- Enhancing the value of ED's *stakeholder engagement* efforts and stakeholder *participation*.
- Maximizing *social justice* from its legal *compliance/enforcement* functions.
- Maximizing the contribution and value of ED's *policy analysis* capabilities and its *technical assistance programs*.

Highlights of the FY 2020 Budget Request

In FY 2020, ED will focus its efforts in three priority areas:

- Work with our geographically and demographically diverse stakeholders to leverage synergies among minority businesses, MSIs, and the energy workforce to promote economic vitality and help protect our national security interests.
- Expand collaborations and partnerships across the DOE complex and with external stakeholders.
- Work with internal and external stakeholders to increase awareness and commitment to the principles of equity and diversity as they relate to the DOE workplace and recipients of DOE financial assistance.
- In FY 2020, ED through the Office of Minority Economic Impact (OMEI), will collaborate with other federal and state agencies to assist with workforce development issues related to formerly incarcerated individuals in accordance with Executive Order 13828 on Reducing Poverty in America by Promoting Opportunity and Economic Mobility and Executive Order 13801 on Expanding Apprenticeships in America.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Economic Impact and Diversity				
Salaries and Benefits	5,860	5,860	5,754	-106
Travel	123	123	140	+17
Support Services	2,155	2,155	2,220	+65
Other Related Expenses	2,031	2,031	1,380	-651
Total, Program Direction	10,169	10,169	9,494	-675
Federal FTEs	37	37	37	0
Support Services				
Management Support				
Office of Minority Economic Impact (OMEI)	1,009	1,009	1,500	+494
Minority Business & Economic Development (MBED) ¹	300	300	0	-300
Office of Civil Rights & Diversity (OCRD) ²	620	620	720	+100
Diversity & Inclusion (D&I) ³	100	100	0	-100
Other Support Services	126	126	0	-126
Total Support Services	2,155	2,155	2,220	+65
Other Related Expenses				
Training	75	80	75	-5
DOECOE	554	554	260	-294
Working Capital Fund	1,402	1,397	1,045	-352
Total, Other Related Expenses	2,031	2,031	1,380	-651

¹ Per approved reorganization in September 2018, the Office of Minority Business and Economic Development was merged with the Office of Minority Economic Impact to increase synergies between programmatic work and initiatives related to minority communities, businesses, and educational institutions.

² Per approved reorganization in September 2018, the Office of Civil Rights and Equal Opportunity was renamed the Office of Civil Rights & Diversity to reflect merging of Diversity and Inclusion functions with the Equal Employment Opportunity (EEO) program.

³ Per approved reorganization in September 2018, the Office of Diversity and Inclusion is being incorporated under the Office of Civil Rights & Diversity (formerly the Office of Civil Rights and Equal Opportunity) to better align and coordinate diversity and inclusion initiatives with EEO's affirmative employment program.

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$10,169	\$9,494,000	-\$675,000
Salaries and Benefits \$5,860,000	\$5,754,000	-\$106,000
Provides funding for 37 FTEs who directly support the ED mission.	Request assumes no change in FTE supporting the ED mission.	Slight reduction in Salaries and Benefits to reflect actual spending rates.
Travel \$123,000	\$140,000	+\$17,000
Request reflects the mission requirements for outreach as well as regulatory activities of the Office of Civil Rights and the Equal Employment Opportunity function of the Office.	Mission outreach and regulatory activities undertaken with increased coordination with Agency programmatic activities.	Increase in travel based on operating needs.
Support Services \$2,155,000	\$2,220,000	+\$65,000
(\$1,009,000) <i>Minority Economic Impact (OMEI)</i> Funding supports the following activities: ○ MSI Grant Program that provides financial assistance to minority educational institutions and 501(3)(c) entities engaging in energy-related programs and activities. ○ Outreach to pre-college programs, primarily in minority communities, that promote energy literacy, academic excellence, and interest in disciplines relevant to energy. ○ Socioeconomic research and analysis that includes addressing environmental and energy-related concerns in underserved communities.	(\$2,000,000) Continuation of FY 2019 activities, with MBED functions merged under OMEI program to enhance Minority Education and Workforce Development Training program (MEWT) MEWT expands initiatives in FY 2020, focused on but are not limited to: ○ Minority Education: Increasing the participation of students enrolled in MSIs across the nation in STEM. ○ Workforce / Pipeline Analysis: research project to identify and quantify energy related economic opportunities, challenges, and recommendations for increased minority access and inclusion. ○ Workforce Development: providing formal incarcerated individuals knowledge, skills a training to improve their opportunities for employment in the energy sector. ○ Technical Assistance/Workforce Training: technical assistance for innovative projects support educational/business activities which complements and/or enhances workforce training to meet the nation's need for job	With the merging of the two offices, partnership and collaboration efforts will be expanded in FY 2020 to increase minority stakeholder awareness through outreach initiatives aimed at improving participation of minority businesses and MSIs in DOE programs, opportunities, and the energy sector.

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
	creation in diverse communities in the high energy growth sector. Capacity Building: Strengthening the STEM capabilities of MSIs by collaborating with the Department's national laboratories and scientific facilities.	
(\$300,000) <i>Minority Business & Economic Development (MBED)</i> Funding supports development of technical assistance programs to encourage, promote, and assist minority business enterprises in establishing and expanding energy-related business opportunities in minority communities that can provide jobs to residents. ED will bring together communities and corporations to support minority participation in major energy development projects. Resource applications include support of ED's partnerships to plan and execute local and regional programs that prepare minority businesses to participate in energy sector work. ED will continue regional activities that support minority business participation and employment opportunities in major regional energy development projects.	(\$0) MBED function and budget merged under OMEI office. See OMEI budget request above for details.	Function and budget transferred to the OMEI office, per reorganization.
(\$620,000) <i>Office of Civil Rights and Equal Opportunity (OCREO)</i> Funding supports developing and delivering Civil Rights training tailored to the DOE enterprise. Funds support conducting investigations of civil rights issues and contractual resources to assist with integration of Headquarters EEO site-based EEO functions, as outlined in Management Directive 715 and other EEOC directives. Request also supports processing of EEO complaints. Trend shows increasing number of complaints to be addressed.	(\$720,000) <i>Office of Civil Rights and Diversity</i> In FY 2020, the office will increase efforts to provide technical assistance related to external civil rights to DOE program offices and recipients of financial assistance with the aim of educating stakeholders of compliance requirements. In FY 2020, funding request also supports integrating the Diversity and Inclusion function into the EEO program within the new Office of Equity and Diversity, established in the September 2018.	Increase reflects transfer of Diversity and Inclusion function into the Equal Employment Opportunity program area.
(\$100,000) <i>Diversity & Inclusion (D&I)</i> Funding	(\$0) Diversity and Inclusion function and budget	Decrease due to transfer of activities under the

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
supports working closely with the EEO staff to extend the EEO principles and practices from a model EEO program to a fully inclusive DOE work environment that supports high performance and high employee satisfaction.	merged under Civil Rights and Diversity office. See OCRD budget request above.	Office of Civil Rights and Diversity.
(\$126,000) <i>Other Support Services</i> Funding for internal evaluation and performance reviews strategy formulation and data collection.	(\$0) No funding requested for this activity.	Funding shifted to support OCRD and OMEI programmatic needs. Internal resources being used to support data analytics function.
Other Related Expenses \$2,031,000	\$1,380,000	-\$651,000
(\$80,000) <i>Training</i> Funding for existing FTE count. Includes funding for security investigations.	(\$75,000) Funding supports training needs for staff in the organization.	Slight decrease in costs due to increased reliance on local and virtual training courses.
(\$554,000) <i>DOE-COE</i> Energy IT Services request supports the office desktop and any departmental mobile capabilities. Outreach includes generation of agency-wide training with IT delivery.	(\$260,000) Energy IT Services request supports the office desktop and any departmental mobile capabilities.	Reduction based on DOECO revised estimates.
(\$1,397,000) <i>Working Capital Fund</i> Working Capital Fund request supports rent and overhead costs associated with the office.	(\$1,045,000) Working Capital Fund request supports rent and overhead costs associated with the office.	Reduction in Working Capital Fund costs due to consolidated office space in the Forrestal building (1700 ft ² overall reduction) and CyberOne adjustment.

General Counsel Program Direction

Overview

The Office of the General Counsel (GC) is responsible for providing legal services to all Department of Energy offices, and for determining the Department's authoritative position on any question of law with respect to all Department offices and programs, except for those belonging exclusively to the Federal Energy Regulatory Commission. GC's responsibilities include the provision of legal opinions, advice, and services to administrative and program offices, and participation in or management of both administrative and judicial litigation. GC is responsible for the coordination and clearance of proposed legislation affecting energy policy and Department activities. The General Counsel serves as the Department's Regulatory Policy Officer under Executive Order 12866, and is responsible for ensuring consistency and legal sufficiency of the Department's regulations. GC administers and monitors standards of conduct requirements, conducts patent program and intellectual property activities, and coordinates rulemaking actions of the Department with other federal agencies.

GC includes the Office of NEPA (National Environmental Policy Act) Policy and Compliance, which provides independent technical and policy reviews to ensure that proposed Department actions comply with the NEPA and related environmental requirements. This office also serves as the focal point of the Department's NEPA expertise, develops NEPA compliance strategies, coordinates with other agencies on key policy matters, and prepares guidance and provides technical assistance to improve the efficiency and effectiveness of DOE's implementation of the NEPA process. GC also includes the Office of Standard Contract management which manages the Standard Contracts for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste between the Department and the nuclear industry under the Nuclear Waste Policy Act. This office also manages the Department's Nuclear Waste Fund activities.

Highlights of the FY 2020 Budget Request

There are no major programmatic changes proposed for General Counsel.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	22,640	22,110	22,610	+500
Travel	88	100	100	0
Support Services	951	610	110	-500
Other Related Expenses	9,321	10,255	10,255	0
Total, Program Direction	33,000	33,075	33,075	0
Federal FTEs	145	145	145	0
Support Services				
Technical Support				
NEPA Contract Services	941	600	100	-500
Intellectual Property Contract Services	10	10	10	0
Total, Support Services	951	610	110	-500
Other Related Expenses				
Information Technology	1,411	1,602	1,602	0
Working Capital Fund	6,424	6,424	6,424	0
Other Services	1,486	2,229	2,229	0
Total, Other Related Expenses	9,321	10,255	10,255	0

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$33,075,000	\$33,075,000	No change
Salaries and Benefits \$22,110,000	\$22,610,000	+\$500,000
Provides funding for 145 FTE to include salaries, benefits, overtime, etc.	Continuation of 2019 activities.	Slight increase to provide for actual costs of salaries and benefits for the year.
Travel \$100,000	\$100,000	No change
Provides funding for travel for hearings, depositions, court proceedings, site visits, conferences, and training.	Continuation of 2019 activities.	Level of activity expected to remain about the same.
Support Services \$610,000	\$110,000	-\$500,000
(\$600,000) NEPA Contract Services Provides contractor support for technical analysis of National Environmental Policy Act documents.	(\$100,000) Continuation of some NEPA activities.	Level of contractor support services for NEPA is expected to decrease due changes in departmental policy.
(\$10,000) Intellectual Property Provides for outside patent law firms to process the Department's intellectual property actions.	(\$10,000) Continuation of 2019 activities.	(No change) Level services required are expected to remain about the same.
Other Related Expenses \$10,255,000	\$10,255,000	No change
(\$1,602,000) Information Technology Provides for all GC IT service including desktop workstations and support (DOE/COE), database systems hosting, FISMA reviews and reporting, etc.	(\$1,602,000) Continuation of 2019 activities.	Level of service expected to remain about the same.
(\$6,424,000) Working Capital Fund Provides for rent, telecommunications, I-Manage, supplies, copiers, printing, etc.	(\$6,424,000) Continuation of 2019 activities.	No change.
(\$2,229,000) Other Services Provides for Online Legal Services, Government Agencies – Intellectual Property, Law Library Materials, US Patent Office charges for DOE patents, training, E-Gov, office furniture, etc.	(\$2,229,000) Continuation of 2019 activities.	Level of activity expected to remain the same.

**Energy Policy and Systems Analysis
Program Direction**

Overview

The Office of Energy Policy and Systems Analysis (EPSA) has served as the principal policy advisor to the Secretary of Energy on energy and related integration of energy systems.

In an effort to eliminate redundancies and increase efficiencies across the Department, EPSA's activities were phased out during FY 2018 in order to close the program by the end of the fiscal year.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	6,842	-	-	-
Travel	50	-	-	-
Support Services	800	-	-	-
Other Related Expenses	2,740	-	-	-
Total, Program Direction	10,432	-	-	-
Federal FTEs	40	-	-	-
Support Services				
Other Support Services	800	-	-	-
Total, Support Services	800	-	-	-
Other Related Expenses				
Working Capital Fund	2,132	-	-	-
Training	75	-	-	-
Energy IT Service	513	-	-	-
Other Expenses	20	-	-	-
Total, Other Related Expenses	2,740	-	-	-

**Office of Policy
Program Direction**

Overview

The Office of Policy (OP) serves as the principal policy office advising the Secretary of Energy. This DOE office reports to the Under Secretary of Energy and serves as a focal point for coordination within the Department on the formulation, analysis, and implementation of energy policy and related programmatic options and initiatives.

OP carries out strategic studies and policy analysis; performs assessments of the strength, reliability, and resiliency of, and anticipated challenges to, the Nation's energy systems; and helps identify and prioritize ways in which DOE programs may be strengthened to achieve their missions on behalf of the American people. Most recently, OP provided key analyses for the Staff Report to the Secretary on Electricity Markets and Reliability and the Report to Congress: Ethane Storage and Distribution Hub in the United States. OP also continues to advise the Environmental Protection Agency (EPA) on small refinery exemption petitions from the Renewable Fuel Standard (RFS).

Highlights of the FY 2020 Congressional Budget Justification

OP is requesting \$8,000,000 for FY 2020. In FY 2020, OP will continue to support analyses for Administration policy initiatives and activities related to Energy Security, Critical Materials, Energy-Water, Technology Innovation, and Energy Markets Policy. OP is the Departmental focal point for policy analysis, analytic support, and advice relating to energy supply and demand and energy markets. It will assist in developing long-term strategies to ensure energy security and to prepare for and respond to energy supply disruptions. OP will also analyze complex interactions within the energy economy, considering the overlapping effect of all energy supply and demand policies, including policies related to the electric grid and natural gas delivery infrastructure.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	-	6,100	4,439	-1,661
Travel	-	75	54	-21
Support Services	-	768	675	-93
Other Related Expenses	-	3,067	2,832	-235
Subtotal, Program Direction	-	10,010	8,000	-2,010
Prior Year Balance Use¹	-	-7,500	0	+7,500
Total, Program Direction	-	2,510	8,000	+5,490
Federal FTEs	-	40	28	-12
Support Services	-			
Other Support Services	-	768	675	-93
Total, Support Services	-	768	675	-93
Other Related Expenses				
Working Capital Fund	-	2,132	2,132	0
Training	-	25	54	+29
Energy IT Service	-	900	636	-264
Other Expenses	-	10	10	0
Total, Other Related Expenses	-	3,067	2,832	-235

¹The OP FY 2019 Budget Request is comprised of \$2,510,000 in new Budget Authority and \$7,500,000 in prior year balance use from the former Office of Energy Policy and Systems Analysis (EPSA) and the Other Departmental Administration account.

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$10,010,00	\$8,000,000	-\$2,010,000
Salaries and Benefits \$6,100,000	\$4,439,000	-\$1,661,000
Funding for salaries and benefits for the 40 FTEs needed to establish the Office of Policy.	Funding for salaries and benefits for the 28 FTEs needed to maintain the Office of Policy.	Funding for salaries and benefits for the 28 FTEs needed to maintain the Office of Policy, a reduction of 12 from FY 2019.
Travel \$75,000	\$54,000	-\$21,000
Travel to support 40 FTEs.	Travel to support 28 FTEs.	Travel to support 28 FTEs
Support Services \$768,000	\$675,000	-\$93,000
Support services needed for FY 2019 technical analysis and administrative requirements.	Support services needed for FY 2020 technical analysis and administrative requirements.	Decreased funding level will support technical analysis needed in FY 2020.
Other Related Expenses \$3,067,000	\$2,832,000	-\$235,000
Funding for working capital, IT, and other services for 40 FTEs.	Funding for working capital, IT, and other services for 28 FTEs.	Funding for working capital, IT, and other services for 28 FTEs.

Public Affairs Program Direction

Overview

The mission of the Office of Public Affairs (PA) is to communicate information about DOE's work in a timely, accurate, and accessible way to the news media and the general public.

PA directly supports the DOE mission by developing and implementing strategies for communicating the Department's mission, policies, initiatives, and information to the news media and the general public. PA is also responsible for managing and coordinating public affairs activities for DOE headquarters, field offices, and laboratories; serving as DOE's primary spokesperson in the news media; responding to requests for information from the public and the news media; arranging interviews with Department officials; providing speechwriting and media support services to the Secretary, Deputy Secretary and Under Secretaries; and preparing written press releases, fact sheets, electronic media and other products that communicate Departmental activities.

Through its Digital Strategy and Communications Office, PA continues to effect cost savings at the Department by consolidating website platforms, reducing duplication, and improving accessibility of information. The Digital Strategy and Communications Office drives the Department's mission online via the Energy.gov website, social networking tools, blog outreach, citizen engagement tools, and other emerging online communication technologies. Digital Strategy and Communications is an innovative and growing part of the mission, as PA seeks to serve the public in more efficient and effective ways online. It is through the Digital Strategy Office that PA is making government more collaborative and participatory.

Highlights of the FY 2020 Budget Request

The \$6,260,000 request is a \$334,000 decrease from FY 2019 Enacted.

**Program Direction
Funding (\$K)**

Washington Headquarters

Salaries and Benefits

Travel

Support Services

Other Related Expenses

Total, Program Direction

Federal FTEs

Support Services

Digital Communication and website support

Total, Support Services

Other Related Expenses

Energy IT Services

Working Capital Fund

Total, Other Related Expenses

FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
4,228	4,228	4,228	0
190	190	190	0
1,340	1,345	1,011	-334
831	831	831	0
6,589	6,594	6,260	-334
30	30	30	0
1,340	1,345	1,011	-334
1,340	1,345	1,011	-334
113	113	113	0
718	718	718	0
831	831	831	0

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$6,594,000	\$6,260,000	-\$334,000
Salaries and Benefits \$4,228,000	\$4,228,000	\$0
Provides funding for 30 full time employees (FTE). This includes DOE's team of media spokespersons, a New Media team managing digital communications and website efforts, the speechwriting team that supports the Secretary and other senior officials and program offices, and the administrative staff required to support DOE's mission.	Continuation of FY 2019 activities which provides funding for 30 FTE.	No change
Travel \$190,000	\$190,000	\$0
Travel expenses support the office's ability to provide appropriate staffing to the Secretary and Deputy Secretary; Staff travel for video production and presentations at conferences to enhance the DOE mission; enhanced video projects across complex; and other media projects.	Continuation of FY 2019 activities.	No change.
Support Services \$1,345,000	\$1,011,000	-\$334,000
Support services include continued contractor support to upgrade and maintain the Department's digital communications and website efforts. Funding also supports initiation of contractor services.	Support services include continued contractor support to maintain the Department's digital communications and website efforts.	The reduction in contractor services accounts for the decrease.
Other Related Expenses \$831,000	\$831,000	\$0
Funding of Working Capital Fund and Energy IT services for 30 FTEs.	Funding of Working Capital Fund and Energy IT services for 30 FTEs.	No change.

Project Management Oversight and Assessments

Overview

The Office of Project Management (PM) provides the Department of Energy (DOE) leadership and assistance in developing and implementing DOE-wide policies, procedures, programs, and management systems pertaining to project management. It manages the Department's project management career development program for DOE's Federal Project Directors. PM is directly accountable to and supports the Deputy Secretary as the Executive Secretariat of the Department's Energy Systems Acquisition Advisory Board (ESAAB) and the Project Management Risk Committee (PMRC). The Deputy Secretary chairs the ESAAB.

In FY 2020, PM will accomplish its mission through its program office functions:

- Energy Systems Acquisition Advisory Board (ESAAB). The PM Director serves as Executive Secretariat (and member) of the ESAAB and the PMRC for the Deputy Secretary. The Board reviews all capital asset projects with a Total Project Cost (TPC) of \$100,000,000 or greater. The Board focuses on projects at risk of not meeting their performance baselines and on making critical decisions for capital asset projects with a TPC of \$750,000,000 or greater. The ESAAB is a standing board that meets at least once a quarter. The ESAAB is supported by the PMRC, which meets at least monthly.
- Project Management Policy and Systems (PMPS). The office provides DOE policy, guidance and oversight for project management. Also, provides monthly project status report for senior leaders with independent assessments of capital asset projects with a TPC greater than \$50,000,000, with the goal to drive improvements in project management outcomes. They maintain an independent central repository, Project Assessment and Reporting System (PARS), of all relevant project data and performance metrics.
- Independent Cost Reviews/Estimates. The office conducts independent cost reviews (ICRs) or prepares statutorily-required independent cost estimates (ICEs) at critical decisions including re-baselining, as required by DOE Order 413.3B for capital asset projects with a TPC of \$100,000,000 or greater. All costs associated with the conduct of ICRs/ICEs, are funded by the Program Office/Project requiring it.
- Project Oversight. The office conducts External Independent Reviews (EIRs) to validate the project performance baselines (scope, cost, and schedule) of all capital asset projects with a TPC of \$100,000,000 or greater. Also, ensures projects are ready to be brought forward to the appropriate Project Management Executive (PME) for authorization to proceed.
- Earned Value Management System (EVMS) Certification. The office conducts initial certification and periodic surveillance reviews to ensure contractor's EVMS, for capital asset projects, comply with industry standards. All costs associated with the conduct of Reviews for Cause (RFC) and recertification of a contractor's system that had its certification withdrawn, to include PM federal staff travel, will be funded by the Program Office/Project requiring the RFC or recertification reviews.
- Professional Development. The office manages the Department's Project Management Career Development Program (PMCDP) to include the professional development, training and certification of Federal Project Directors (FPDs). The PM Director serves as the co-chair and as Executive Secretariat for the FPD Certification Review Board.
- Cost Estimating and Program Evaluation. PM provides independent analyses of DOE programs, including cost-effectiveness and alternatives. Develop DOE-wide cost estimating policy and practices, develop and make available historic cost estimates, and perform independent cost estimation for the Department.

Highlights of the FY 2020 Budget Request

The Department requests \$14,255,000 in FY 2020 for PM. This Office is accountable to and serves the Deputy Secretary as the Executive Secretariat for the Department's Energy Systems Acquisition Advisory Board (ESAAB) and the Project Management Risk Committee (PMRC). PM also executes other critical Department-wide functions to include preparing statutorily-required independent cost estimates, performing external independent reviews to validate performance baselines, conducting earned value management system certification and surveillance reviews, providing project management policy, guidance and oversight of all capital asset projects, and overseeing the Project Management Career Development Program (PMCDP).

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Program Direction				
Salaries and Benefits	5,680	5,680	5,850	+170
Travel	398	274	274	-
Support Services	7,607	7,607	6,687	-920
Other Related Expenses	1,507	1,444	1,444	-
Total, Program Direction	15,192	15,005	14,255	-750
Federal FTEs	30	30	30	-
Support Services				
External Independent Reviews (EIRs)	2,203	2,203	2,203	-
Earned Value Management System (EVMS) Certification	1,247	1,247	1,247	-
Project Assessment and Reporting System (PARS)	2,000	2,000	2,000	-
Cost Estimating and Program Evaluation	2,000	2,000	1,080	-920
Other Support Services	157	157	157	-
Total, Support Services	7,607	7,607	6,687	-920
Other Related Expenses				
Training	40	20	20	-
Energy IT Services	480	480	480	-
Working Capital Fund (WCF)	987	944	944	-
Total, Other Related Expenses	1,507	1,444	1,444	-

Program Direction

Activities and Explanation of Changes		
FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$15,005,000	\$14,255,000	-\$750,000
Salaries and Benefits \$5,680,000	\$5,850,000	+\$170,000
•Funding in support of 30 FTEs. Funding provides for salaries/benefits, overtime, lump sum leave, and performance awards.	•Funding in support of 30 FTEs. Continuation of FY19 activities.	•Slight increase for cost of living adjustment.
Travel \$274,000	\$274,000	\$0
•Funding in support of PM staff travel. Travel is necessary to support review activities (excluding Baseline Change Proposals (BCPs), Reviews for Cause (RFC), and Earned Value Management System (EVMS) recertification reviews) of program/project activities in the field.	•Continuation of FY19 activities.	•No Change.
Support Services \$7,607,000	\$6,687,000	-\$920,000
•Funding in support of contractual requirements, including External Independent Reviews (EIRs), Earned Value Management System (EVMS) certification and surveillance reviews, Project Assessment and Reporting System (PARS), Cost Estimating, and other support services.	•Continuation of FY19 activities.	•Decrease in funding is associated with the slow rollout and institutionalizing of the CEPE function.
Other Related Expenses \$1,444,000	\$1,444,000	\$0
•Other related expenses to cover Energy IT Services (EITS), Working Capital Fund (WCF) and other services.	•Funding in support of 30 FTEs. Continuation of FY19 activities.	•No Change.

Office of Technology Transitions Program Direction

Overview

The Office of Technology Transitions (OTT) seeks to expand the impact of the Department of Energy's (DOE) research and development portfolio to advance the economic, energy and national security interests of the United States of America. To achieve high-impact outcomes, OTT coordinates technology transition activities across DOE's programs (including NNSA), field offices, and National Laboratories, as well as with other federal agencies. Coordination reduces redundancies and improves the likelihood and speed of technology transfer and development of DOE's research outputs.

OTT priorities are to strengthen the capability of the National Laboratories to engage with industry and other partners, to reduce barriers to industry engagement with the National Laboratories, and to enhance the transfer of technologies from these laboratories to the private sector for commercialization.

Highlights of the FY 2020 Budget Request

The Department requests \$9,080,000 for OTT in FY 2020. This level of funding will support OTT's operational requirements and allow OTT to operate the Technology-to-Market functions transferred and centralized from other offices in FY 2018, fully establishing OTT as an integral function within DOE. The resources requested for FY 2020 are required to maintain adequate staffing to fulfill Congressional and Administration direction to increase Departmental engagement for the transition of new and evolving energy technologies to the U.S. markets.

Technology Transition Activities

Strategic Programs - to provide innovative training and tools to enhance success in transitioning promising technology.

Technology Commercialization Fund (TCF) Execution

In FY 2020, OTT will continue to implement the TCF, authorized in section 1001 of the Energy Policy Act of 2005. The TCF attracts matching funds from private partners and furthers development of promising National Laboratories' energy technologies with the potential for high impact commercialization. The fund is derived from 0.9 percent of the amount available to the Department's applied energy research, development, demonstration, and commercial application budget for each fiscal year. These funds are from the Office of Electricity, Office of Energy Efficiency and Renewable Energy, Office of Fossil Energy, Office of Nuclear Energy, and Office of Cybersecurity, Energy Security, and Emergency Response. In FY 2018, the fund received \$21 million that funded 64 projects at 10 National Laboratories and included 71 private sector partners.

The TCF focuses on commercializing promising energy technologies from the National Laboratories in order to (1) increase the commercial impact and the number of National Laboratory-developed energy technologies transitioned into commercial development; and (2) enhance the outcomes of the Department's technology transitions initiatives with a competitive and proactive approach to lab-industry partnerships. The TCF will continue to increase the number of National Laboratory technologies transitioned into private sector development and commercialization and increase taxpayer return on investment in National Laboratory research.

OTT will also continue evaluating the TCF, focusing on outcomes of the TCF awards over several years.

Technology-to-Market (T2M)

Technology-to-Market activities provide technology developers, startups, small- and medium-sized enterprises, sources of capital, and other key stakeholders, with tools, resources, and expertise to address barriers to commercializing promising technologies or otherwise develop new commercialization pathways.

The Energy I-Corps program is OTT's primary T2M program. It fosters an entrepreneurial workforce and creates a market-based commercialization mindset among DOE National Laboratory researchers. Since the program's inception in 2015 (as EERE's Lab-Corps), 90 teams from 11 National Labs have worked with industry to discover the commercial impact of technologies they have developed at the National Laboratories. Because of the teams' participation in the program, these

technologies have reached a point of commercial viability that has already attracted nearly \$10 million in follow-on funding. OTT is working across all the DOE programs to extend the reach of Energy I-Corps to the entire DOE portfolio and all the National Laboratories.

OTT will work with the National Laboratories, researchers, DOE programs, and the private sector to bring together existing activities, such as the Lab Accelerator piloted as part of the Technology-to-Market Lab Bridge initiative, the Small Business Vouchers Pilot, and the Build4Scale training on manufacturing, which can expand the capabilities of National Laboratory researchers to engage easily with the private sector and other third parties, and to mature and move technologies to commercialization, in collaboration with the private sector. OTT will seek to identify gaps that impede engagement with industry and develop activities that can assist in closing those gaps.

T2M activities strengthen the national energy innovation ecosystem with new, innovative, high-impact partnerships and programs across startups and small businesses, industry, universities, DOE National Laboratories, investors, and non-profit organizations. These efforts will support continued development of an entrepreneurial workforce, reduce technology commercialization barriers, improve private investment in the U.S. innovation ecosystem, and lead to increased jobs and U.S. competitiveness. T2M catalyzes successful commercialization, entrepreneurship, technology transfer, and manufacturing competitiveness outcomes from DOE's portfolio of research and development.

Lab Partnering Service

OTT will facilitate private sector access to the National Laboratory capabilities, expertise, technologies, and facilities through the Lab Partnering Service (LPS), a searchable, online platform developed to streamline access to unique capabilities that are often difficult for investors, innovators, and others to find because the capabilities are distributed across the National Laboratory enterprise and presented primarily for the scientific community. In FY 2020, OTT will maintain the LPS in technological fields of particular commercial relevance and to the extent possible, will continue integrating it with other tools that deliver additional value and information to stakeholders, further streamlining pathways for collaboration and other technology transfer activities with and at the National Laboratories.

Partnerships and Investment - to further America's technology leadership and economic competitiveness through targeted market engagement and commercialization of DOE's innovation portfolio.

OTT continues streamlining industry-lab connections and access with a broad strategy that includes live interaction between industries and the National Laboratories and tool development to increase, improve, and integrate digital information flow for stakeholders, such as investors, entrepreneurs, and industrial partners who develop and commercialize technologies. Through Partnerships and Investment (PI) (formerly the Energy Investor Center), OTT is working to manage DOE's network of capital providers and expand it beyond traditional investors (e.g., corporations, venture capitalists, private equity firms) to include non-traditional entities, such as foundations and family offices. By working with a diverse group of capital providers with various investment time horizons and innovators from the private sector and the National Laboratories, OTT is well-positioned to identify effective ways to address existing communication, knowledge, and awareness gaps and to facilitate private sector access to the National Laboratory capabilities, expertise, technologies, and facilities.

Policy and Practice - to coordinate across DOE programs and labs to improve and streamline technology transfer practices to accelerate technology transfer activities, and establish performance goals and evaluation methods.

OTT will continue its leadership role in coordinating commercialization policies and activities across the DOE and beyond. OTT implements National technology transfer laws and the policy priorities of the Administration and, in coordination with other federal agencies, where appropriate, through the Inter-Agency Working Group on Technology Transfer and the Federal Laboratory Consortium. OTT also participates and serves as co-chair on the Lab-to-Market subcommittee of the Office of Science and Technology Policy's National Science and Technology Council. These activities provide an opportunity for OTT to gain insights on best practices and program designs that can be shared across the federal government and considered for implementation at DOE.

Stakeholder engagement is assisted by a clear understanding of the capabilities and possibilities available at the National Laboratories. OTT regularly develops the information and tools necessary to showcase the DOE innovation story threaded

across the entire complex and update existing information and tools with new innovations. This helps bring to life the impacts that the National Laboratories have had on companies, industries, the Nation, and the world, further underscoring the future potential with streamlined access and strengthened technology transitions capabilities.

Using National Laboratory and facility data gathered, verified, and validated annually by OTT for statutory annual reporting, OTT conducts analyses that inform goals, objectives, best practices, policies, and effective metrics for the National Laboratories, other partners and the Department. OTT further uses the data to supplement Department-wide reports and to inform impact studies and other activities across the enterprise.

Outcomes of assessments initiated by OTT on various aspects of partnering with and transferring technologies from the National Laboratories to the private sector will strengthen technology transitions capabilities across DOE. These assessments will inform, and be followed by, development of best practices, guidance, and policies to reduce barriers, and streamline and improve predictability and consistency of technology transfer arrangements for industry and DOE and laboratory staff.

To achieve its mission, in FY 2020, OTT will continue to engage with stakeholders on streamlining central policies and procedures, easing and enabling private sector access to the capabilities and resources of the DOE National Laboratory enterprise, and expanding connections with a wide network of capital providers, entrepreneurs, and other stakeholders. OTT will continue to assess, document, and disseminate best practices, update the DOE Technology Transfer Execution Plan, and publish technology-focused materials and other documents and digital materials to raise the visibility of the DOE technology and capabilities portfolios and streamline access to them by the private sector.

Based on the criteria identified and design developed in FY 2019, OTT will pilot a new commercialization program with a goal of facilitating innovation and the transition of DOE funded R&D investments from the labs toward commercialization.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	2,835	2,986	2,986	0
Travel	97	150	150	0
Support Services	3,503	4,849	5,424	+575
Other Related Expenses	441	520	520	0
Total, Program Direction	6,876	8,505	9,080	+575
Total FTEs	16	18	18	0
Support Services				
Technology Transition Activities	2,603	3,949	4,524	+575
Technology Commercialization Fund Execution	900	900	900	0
Total, Support Services	3,503	4,849	5,424	+575
Other Related Expenses				
Working Capital Fund (WCF)	320	320	320	0
Other	121	200	200	0
Total, Other Related Expenses	441	520	520	0

Authorizations

Public Law 109–58, “Energy Policy Act of 2005,” Title V

15 U.S. Code § 3708(b & c) - Administrative arrangements – Corporation & Administrative authorization

15 U.S. Code § 3710(a) - Utilization of Federal technology

42 U.S. Code § 2121(a) - Authority of Commission

42 U.S. Code § 16391(e) - Establishes the Energy Technology Commercialization Fund

42 U.S. Code § 16391 - Improved technology transfer of energy technologies & Technology Transfer Coordinator

**Office of Technology Transitions
Activities and Explanation of Changes**

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$8,505,000	\$9,080,000	+\$575,000
Salaries and Benefits \$2,986,000	\$2,986,000	\$0
Funding supports 18 FTEs responsible for managing DOE's technology transfer portfolio and providing essential operations support.	Funding will support 18 FTEs responsible for managing DOE's technology transfer portfolio and providing essential operations support.	No change.
Travel \$150,000	\$150,000	\$0
Funding supports travel requirements associated with DOE's technology transfer portfolio, such as OTT engagement with the labs at the bi-annual Technology Transfer Working Group meetings, information gathering from Principal Investigators, outreach presentations, and OTT participation in lab events.	Funding will support travel requirements associated with DOE's technology transfer portfolio, such as OTT engagement with the labs at the bi-annual Technology Transfer Working Group meetings, information gathering from Principal Investigators, outreach presentations, and OTT participation in lab events.	No Change.
Support Services \$4,849,000	\$5,424,000	+\$575,000
Funding supports activities associated with industry-laboratory technology transitions activities, including technology transfer, integrating Lab Partnering Service and related information systems, initiating assessments, developing guidance and policies, implementing the Administration's technology transfer priorities and best practices, executing the Technology Commercialization Fund, and Technology-to-Market activities with a focus on strengthening National Laboratory capabilities, and conducting other statutorily required data collection, verification, validation, and reporting requirements.	Funding will support activities associated with industry-laboratory technology transitions activities, including technology transfer, Lab Partnering Service and related information systems, initiating assessments, developing guidance and policies, implementing the Administration's technology transfer priorities and best practices, executing the Technology Commercialization Fund, and conducting Technology-to-Market activities with a focus on strengthening National Laboratory capabilities, and conducting other statutorily required data collection, verification, validation and reporting requirements.	The increase in funding will support enhancements to OTT technology transfer activities, Technology Commercialization Fund execution, Lab Partnering Service integration, Technology-to-Market activities transferred during FY 2018, and other statutory requirements.
Other Related Expenses \$520,000	\$520,000	\$0

Funding supports the business costs associated with the DOE's Working Capital Fund (office space, phones, utilities, etc.); Energy IT Services (IT equipment and support); specialized software licensing; E-Gov costs; security investigations; and staff development and training to maintain and enhance work related skills and capabilities.	Funding will support the business costs associated with the DOE's Working Capital Fund (office space, phones, utilities, etc.); Energy IT Services (IT equipment and support); specialized software licensing; E-Gov costs; security investigations; and staff development and training to maintain and enhance work related skills and capabilities.	No change.
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Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Departmental Administration	FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
Advanced Photon Source			
Program Direction			
Program Direction	18,878	22,878	0
Total, Advanced Photon Source	18,878	22,878	0
Chicago Operations Office			
Strategic Partnership Projects			
Strategic Partnership Projects	200	200	200
Total, Chicago Operations Office	200	200	200
Golden Field Office			
Office of Indian Energy			
Office of Indian Energy	3,300	0	0
Total, Golden Field Office	3,300	0	0
Idaho Operations Office			
Strategic Partnership Projects			
Strategic Partnership Projects	1,000	1,000	1,000
Total, Idaho Operations Office	1,000	1,000	1,000
Lawrence Berkeley National Laboratory			
Strategic Partnership Projects			
Strategic Partnership Projects	3,500	3,500	3,500
Total, Lawrence Berkeley National Laboratory	3,500	3,500	3,500
National Energy Technology Lab			
Strategic Partnership Projects			
Strategic Partnership Projects	150	150	150
Total, National Energy Technology Lab	150	150	150
National Renewable Energy Laboratory			
Energy Policy and Systems Analysis			
Energy Policy and Systems Analysis	35	0	0
Office of Indian Energy			
Office of Indian Energy	2,583	0	0
Strategic Partnership Projects			
Strategic Partnership Projects	500	500	500
Total, National Renewable Energy Laboratory	3,118	500	500
NNSA Albuquerque Complex			
Strategic Partnership Projects			
Strategic Partnership Projects	8,500	8,500	8,500
Total, NNSA Albuquerque Complex	8,500	8,500	8,500

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Departmental Administration

**Oak Ridge Institute for Science & Education
Energy Policy and Sysems Analysis**

Energy Policy and Sysems Analysis

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
624	0	0
624	0	0

Total, Oak Ridge Institute for Science & Education

Oak Ridge Office

Chief Financial Officer

Program Direction

1,484 1,484 1,484

Strategic Partnership Projects

Strategic Partnership Projects

9,025 9,025 9,025

Total, Oak Ridge Office

10,509 10,509 10,509

Office of Scientific & Technical Information

Energy Policy and Sysems Analysis

Energy Policy and Sysems Analysis

26 0 0

Total, Office of Scientific & Technical Information

26 0 0

Pacific Northwest National Laboratory

Strategic Partnership Projects

Strategic Partnership Projects

10,325 10,325 10,325

Total, Pacific Northwest National Laboratory

10,325 10,325 10,325

Richland Operations Office

Strategic Partnership Projects

Strategic Partnership Projects

100 100 100

Total, Richland Operations Office

100 100 100

Sandia National Laboratories

Office of Indian Energy

Office of Indian Energy

700 0 0

Total, Sandia National Laboratories

700 0 0

Savannah River Operations Office

Strategic Partnership Projects

Strategic Partnership Projects

6,700 6,700 6,700

Total, Savannah River Operations Office

6,700 6,700 6,700

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Departmental Administration	FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
Washington Headquarters			
Chief Financial Officer			
Program Direction	47,000	47,428	50,516
Program Direction			
Program Direction	25,513	26,125	24,316
Chief Information Officer			
Program Direction	34,905	40,304	46,702
Cybersecurity and Secure Management	70,874	71,501	52,855
Corporate IT Program Support	20,495	19,819	24,997
Total, Chief Information Officer	126,274	131,624	124,554
Congressional, and Intergovernmental Affairs			
Program Direction	6,200	6,200	5,895
Economic Impact & Diversity			
Program Direction	10,169	10,169	9,494
Energy Policy and Sysems Analysis			
Energy Policy and Sysems Analysis	9,747	0	0
General Counsel			
Program Direction	33,000	33,075	33,075
Office of Indian Energy			
Office of Indian Energy	11,267	0	0
Management			
Program Direction	54,745	55,385	54,358
Office of Policy			
Office of Policy	0	10,010	8,000
Departmental Administration			
Program Direction	15,192	15,005	14,255
Small and Disadvantaged Business Utilization			
Program Direction	3,000	3,170	3,609
Office of the Secretary			
Program Direction	5,300	5,395	5,119
Public Affairs			
Program Direction	6,589	6,594	6,260
Total, Washington Headquarters	353,996	350,180	339,451
Western Area Power Administration			
Office of Indian Energy			
Office of Indian Energy	150	0	0
Total, Western Area Power Administration	150	0	0
Total, Departmental Administration	421,776	414,542	380,935

Inspector General

Inspector General

**Office of Inspector General
Proposed Appropriation Language**

For expenses necessary for the Office of Inspector General in carrying out the provisions of the Inspector General Act of 1978, [51,330,000] \$54,215,000 to remain available until September 30, [2020] 2021.

Public Law Authorizations

- Public Law 95-452, "Inspector General Act of 1978"
- Public Law 103-356, "Government Management Reform Act (GMRA) of 1994"
- Public Law 106-531, "Reports Consolidation Act of 2000"
- Public Law 107-347, "Federal Information Security Modernization Act (FISMA) of 2014"
- Public Law 111-5, "American Recovery & Reinvestment Act (ARRA) of 2009"
- Public Law 111-204, "Improper Payments Elimination and Recovery Act of 2010"
- Public Law 111-258, "Reducing Over-Classification Act"
- Public Law 112-194, "Government Charge Card Abuse Prevention Act of 2012"
- Public Law 112-199, "Whistleblower Protection Enhancement Act of 2012"
- Public Law 113-6, "Consolidated and Further Continuing Appropriations Act of 2013/2014 Omnibus Appropriations Act"
- Public Law 113-101, "Digital Accountability and Transparency Act"
- Public Law 114-117, "Grants Oversight and New Efficiency Act"
- Public Law 115-53, "Cybersecurity Act of 2015"
- Public Law 114-261, "To Enhance Whistleblower Protection for Contractor and Grantee Employees"

**Office of Inspector General
(\$K)**

FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
49,000	51,330	54,215

Overview

The Office of the Inspector General (OIG) is dedicated to its mission to strengthen the integrity, economy, and efficiency of the Department's programs and operations. The OIG is able to accomplish its mission effectively, in part, because it has the authority to inquire into all Department programs and activities as well as the related activities of persons or parties associated with Department grants, contracts, or other agreements. As a result of its work, the OIG has consistently provided a positive return on its investment. The OIG's FY 2016 through FY 2018 three year average Return on Investment (ROI) is \$7.68 for every dollar appropriated.

The OIG focuses its efforts to enhance the efficiency and effectiveness of the Department's programs and operations in the following key areas:

- **Hotline Allegations.** The OIG uses hotline allegations to identify potential areas of fraud, waste, and abuse. Changes in the Department's operating environment (e.g., program elimination, increased NNSA funding) has increased the number of allegations received through the OIG Hotline since FY 2017 by 24 percent.
- **Contractor Whistleblower Retaliation.** OIG is required by statute to conduct reviews of alleged contractor and grantee whistleblower retaliation that serve to inform health and safety issues throughout DOE. These are the most resource intensive reviews conducted by the OIG. The workload associated with this effort tripled last year.
- **Contract Review.** OIG assesses the Department's award and administration of approximately \$25,000,000,000¹ in contracts. Of particular concern is the oversight of subcontractors. Recent OIG work has resulted in sizeable settlements by subcontractors.
- **Cybersecurity Oversight Efforts.** Cyberattacks are becoming more prevalent. The OIG frequently partners with the Federal Bureau of Investigation to address attacks directly impacting the Department.
- **NNSA Modernization Efforts.** NNSA is undertaking a massive modernization effort that involves major projects (e.g., weapons complex transformation). Additionally, NNSA is slated to sustain a \$1.26B increase in funding in FY 2020. OIG Inspections help mitigate the risk associated with the very aggressive set of programs NNSA has to undertake to carry out the Nuclear Posture Review.
- **Environmental Management.** The Department's environmental liability of \$493,960,000,000² was added to the Government Accountability Office's (GAO) Biennial High Risk List in 2017. The OIG routinely reviews the efficacy of the Department's environmental management programs, which annually expend approximately \$6,500,000, including the \$690,000 Hanford Waste Treatment Plant.
- **Mission Support Costs.** OIG assists in identifying potential costs savings in areas such as the estimated \$5,900,000,000³ spent each year on National Laboratory support costs.
- **Loan Programs.** The proposed elimination of Title 17 Innovative Technology Loan Guarantee program and the Advanced Technology Vehicle Manufacturing direct loan program may require the OIG to utilize experts to assist with reviews to confirm compliance with loan terms and conditions and program termination requirements.
- **Cost Accounting Standards (CAS).** OIG provides reviews of Department contractors' incurred costs and compliance with Cost Accounting Standards.

Highlights of the FY 2020 Budget Request

The requested level for FY 2020 will ensure that the OIG can continue to operate at its current level and be able to focus on important areas identified below:

- **Contractor and Grantee Whistleblower Retaliation** – under Public Law 114-261, "To Enhance Whistleblower Protection for Contractor and Grantee Employees," passed in December 2016, the OIG is the only avenue contractor and grantee employees have for addressing alleged retaliation;

¹ Source: USASpending.gov as referenced in the *Management Challenges at the Department of Energy – Fiscal Year 2018* report.

² Source: Department of Energy's FY 2018 Agency Financial Report

³ Source: Department of Energy's FY 2018 Institutional Cost Report

- Subcontractor Oversight – recent significant false claim settlements by subcontractors highlights the need for additional proactive oversight efforts by the OIG;
- Digital Accountability and Transparency Act – the OIG will continue to assess the completeness, timeliness, quality, and accuracy of the Department’s data standards in accordance with the Act;
- Cybersecurity – under Public Law 114-53, “Cybersecurity Act of 2015,” the OIG must issue reports on the cybersecurity stance of the Department, while also working to provide additional oversight needed to address the increased frequency of cyberattacks; and
- Changes to Department Funding and Agency Realignments – may result in an increased level of OIG hotline complaints or potential fraud allegations.
- Implementation of a new data analytics program and modernization of our technical crimes capabilities.
- In FY 2020 OIG anticipates an influx of investigative work in the area of Foreign Government Talent Recruitment Programs. Scientific collaboration with foreign organizations adds value to the Department of Energy; however, such endeavors also carry a risk of scientific exploitation, which may threaten United States’ national interests.

**Program Direction
Funding (\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	41,874	43,314	45,631	+2,317
Travel	1,536	1,571	1,571	0
Support Services	500	500	500	0
Other Related Expenses	5,090	5,945	6,513	+568
Subtotal, Program Direction	49,000	51,330	54,215	+2,885
Use of Prior Year Balances	-	-	-	0
Total, Program Direction	49,000	51,330	54,215	+2,885
Federal FTEs	279	279	291	12
Support Services				
Management Support				
Federal Information Security Modernization Act (FISMA)	500	500	500	0
Total, Support Services	500	500	500	0
Other Related Expenses				
Council of the Inspectors General on Integrity and Efficiency (CIGIE)	135	115	142	+27
Information Technology	600	634	1,537	+903
Training	420	629	668	+39
Working Capital Fund	3,113	3,113	3,113	0
Other Related Expenses	822	1,454	1,053	-401
Total, Other Related Expenses	5,090	5,945	6,513	+568

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$51,330,000	\$54,215,000	+\$2,885,000
Salaries and Benefits \$43,314,000	\$45,631,000	+\$2,317,000
Funding supports Federal staff with specialized skill sets (e.g., Certified Public Accountants, Technology Crime Investigators, and Certified Fraud Examiners) who identify significant Departmental program and operational challenges.	Continue to identify significant Departmental challenges.	The funding increase reflects increase in FTE usage by 12 FTE. Additional FTE will enable OIG to implement a data analytics program, create a Thousand Talents oversight effort, and increase reviews of whistleblower retaliation cases.
Travel \$1,571,000	\$1,571,000	\$0
Funding supports travel to provide oversight at DOE's 25 geographically dispersed facilities.	Continue to perform audit, inspections, and investigations across the DOE complex.	No change.
Support Services \$500,000	\$500,000	\$0
Funding directly supports the <i>Federal Information Security Modernization Act of 2014</i> (FISMA). FISMA requires OIG to conduct an annual independent evaluation to determine whether the Department of Energy's unclassified cybersecurity program adequately protected its data and information systems.	Continued support for independent annual evaluations in accordance with FISMA.	No change
Other Related Expenses \$5,945,000	\$6,513,000	+\$568,000
This funding includes critical training for OIG staff to maintain required levels of proficiency and comply with the Inspector General Act. Funding also supports forensic hardware and software requirements needed to accomplish investigative responsibilities. Funds are included for mandatory support for Council of the Inspectors General on Integrity and Efficiency (CIGIE) and to fund OIG's share of the DOE Working Capital Fund and Energy IT Services.	Continue to support training, information technology needs, and other requirements in the performance of OIG duties.	The funding increase reflects forensic efforts, training costs, and the cost of personnel security investigations (\$341,000). The OIG will also need to increase its investments in forensic hardware and software to implement a data analytics program and expand the technical crimes capabilities.

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

Office of the Inspector General

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
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Washington Headquarters

Office of the Inspector General

Office of the Inspector General

49,000	51,330	54,215
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Total, Washington Headquarters

49,000	51,330	54,215
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Total, Office of the Inspector General

49,000	51,330	54,215
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International Affairs

International Affairs

**Office of International Affairs
Proposed Appropriation Language**

For necessary expenses for International Activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), \$36,100,000 to remain available until expended.

Explanation of Change

In FY 2020, funding for the Office of International Affairs is being requested in a separate appropriation to increase transparency and reflect the multi-year nature of program requirements. In alignment with Administration reforms and previous transfer of EERE international staff, this request also consolidates DOE international staffing currently within the Office of Fossil Energy and the Office of Nuclear Energy into the new Office of International Affairs.

International Affairs (\$K)		
FY 2018 Enacted ¹	FY 2019 Enacted ²	FY 2020 Request
18,878	22,878	36,100

Overview

The Department of Energy's (DOE) Office of International Affairs (IA) has primary responsibility for addressing international energy issues that have a direct impact on research, development, utilization, supply, and conservation of energy affecting the United States. IA performs analytical activities that integrate domestic and foreign energy policy, including provision of independent technical and policy advice for the Administration on international negotiations involving energy resources, energy technologies, or nuclear weapons issues.

IA pursues its mission by applying the Department's vast knowledge of energy technologies and markets to international policies and programs that advance U.S. energy policy and energy security, scientific and energy collaboration, broader economic objectives, and national security. IA works to accelerate development and deployment of clean and advanced energy solutions of all kinds in support of U.S. global energy, economic, and environmental goals.

Highlights of the FY 2020 Budget Request

IA's FY 2020 Budget Request of \$36,100,000 is \$13,222,000 more than the FY 2019 Enacted, to catalyze international cooperation in support of U.S. priorities. In FY 2020, funding for IA is being requested in a separate appropriation to increase transparency and reflect the multi-year nature of program requirements, including reimbursable work performed by IA staff for other Federal agencies.

In FY 2020, the additional funding will support IA's role in the U.S. – Israel Energy Center of Excellence, the salary, benefits, and other related expenses associated with additional staffing and consolidating the international staffing of the Office of Fossil Energy and the Office of Nuclear Energy into IA in alignment with Administration reforms, and the new requirements of the Foreign Investment Risk Review Modernization Act of 2018. In FY 2020, IA will create market opportunities for U.S. energy and technology exports of all types globally. Also, IA will increase engagement with key international energy partners through important multilateral groups including the G7, G20, International Energy Agency, Clean Energy Ministerial, Mission Innovation, Asia-Pacific Economic Cooperation, and the International Energy Forum.

In FY 2020, IA will continue efforts initiated in FY 2017-through 2019, including support for reforming energy policy to foster investment abroad, for example, Mexico and Israel; adding a focus on nuclear energy and carbon capture utilization and storage to the Clean Energy Ministerial; creating programs to increase resilience against cyber-attacks in Ukraine; developing a handbook to encourage the development of markets for liquefied natural gas (LNG) in Africa; encouraging policies to diversify pipeline and LNG access in Europe; creating market opportunities for coal trade in India and Ukraine; and supporting the development of policy structures to increase use of solar energy and energy efficiency technologies in Saudi Arabia and the United Arab Emirates.

¹ For FY 2018 Enacted, funding was provided for the IA program in the Departmental Administration (DA) appropriation.

² For FY 2019 Enacted, funding was provided for the IA program in the DA appropriation.

**International Affairs
Program Direction**

	FY 2018 Enacted¹	FY 2019 Enacted²	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Washington Headquarters				
Salaries and Benefits	9,830	10,600	17,500	+6,900
Travel	551	800	950	+150
Support Services	6,155	7,776	9,020	+1,244
Other Related Expenses	2,342	3,702	8,630	+4,928
Total, Program Direction	18,878	22,878	36,100	+13,222
Federal FTEs	54	72	100	+28
Support Services				
Energy Security and Clean Energy Initiatives	1,135	682	2,145	+1,463
U.S.-Israel Energy Center of Excellence ³	1,031	4,000	4,000	0
Binational Industrial R&D Foundation (BIRD)	2,000	2,000	2,000	0
Subscriptions/Publications Services	336	100	125	+25
Management Support Services	1,653	994	750	-244
Total, Support Services	6,155	7,776	9,020	+1,244
Other Related Expenses				
Working Capital Fund	1,848	3,077	4,700	+1,623
Energy IT and Other Services	452	550	3,850	+3,300
Training	42	75	80	+5
Total, Other Related Expenses	2,342	3,702	8,630	+4,928

¹ For FY 2018 Enacted, funding was provided for the IA program in the Departmental Administration (DA) appropriation.

² For FY 2019 Enacted, funding was provided for the IA program in the DA appropriation.

³ IA provided \$1,030,960 of FY 2018 appropriations to the U.S.-Israel Energy Center of Excellence. An additional \$2,969,040 was provided through the applied energy programs for this effort. Total DOE funding in FY 2018 = \$4,000,000

International Affairs Activities

International Energy Policy Coordination

IA serves as DOE's primary representative on interagency Policy Coordinating Committees (PCCs) held by the National Security Council (NSC) and functions as the conduit for policy and technical expertise between DOE and other Agencies. To achieve its mission, IA collaborates with DOE Senior Leadership, program offices and national laboratories, coordinating across the Department to leverage DOE's technical, policy, and market expertise with international partners. IA maintains authoritative knowledge of international energy matters relating to the activities, issues, and policies, for the Administration, Congress and energy producers and consumers. IA coordinates the Government's international energy relationships with other countries' energy ministries, working in concert with the Department of State and other relevant agencies, where appropriate, to advance innovative policy, build capacity, remove barriers, and foster markets to best achieve U.S. energy goals.

Coordination of Foreign Engagements with National Laboratories

IA also serves as the coordinating body for international engagement with DOE's 17 national laboratories. In this function, IA manages the DOE approval process for the national laboratories' international partnerships, which include, *inter alia*, Strategic Partnership Projects (SPP), under which the national laboratories conduct fee for service sponsored research for international customers on a 100% reimbursable basis; Cooperative Research and Development Agreements (CRADA), under which international private sector participants enter a financial and operating arrangement to utilize the laboratories' technologies, processes, research and development (R&D) capabilities, or technical expertise; Memoranda of Understanding (MOU), Agreements for Commercializing Technology (ACT); Technical Assistance (TA) Agreements; User Agreements; Technology Licensing Agreements; and Material Transfer Agreements.

IA coordinates DOE review of these agreements to ensure that such work is consistent with or complementary to the missions of DOE and the individual laboratories, and does not impede the laboratory's ability to accomplish its DOE mission. IA also ensures that the foreign engagements meet the requirements of DOE P 485.1, Foreign Engagements with DOE National Laboratories, to (1) align consistently with the strategic interests and foreign policies of the United States, (2) be legally sound and compliant with U.S. laws and regulations, and (3) address any counterintelligence considerations.

Consolidation of International Activities at DOE

In alignment with Administration reforms, this request consolidates the DOE international staffing currently within the Office of Fossil Energy and the Office of Nuclear Energy into the new Office of International Affairs, which already includes the headquarters' international affairs activities and former EERE international activities. The International Nuclear Energy Cooperation (INEC) mission will be consolidated into IA. INEC has provided the Department the ability to meet demands for engagement with international partners on civil nuclear policy, research, development, and demonstration (RD&D) and related activities. Activities consolidated from FE will include clean coal and carbon management.

CFIUS/FIRRMA

IA requests \$5 million for efforts to comply with the Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA), which expands the jurisdiction of the Committee on Foreign Investment in the United States (CFIUS) to address growing national security concerns over foreign exploitation of certain investment structures that traditionally have fallen outside of CFIUS jurisdictions. Additionally, FIRRMA modernizes CFIUS's process to better enable timely and effective reviews of covered transactions. The key provisions of FIRRMA are to: expand the scope of covered transactions; provide for an abbreviated filing; expand CFIUS's timelines; strengthen requirements on the use of mitigation agreements; grant special hiring authority; and delay the applicability of some of the most significant provisions until 18 months following enactment.

DOE CFIUS has been working with Treasury and OMB to estimate the expected increased workload for national security investigations with the passage of FIRRMA. Currently DOE CFIUS is understaffed for the current case workload of approximately 250 investigations per year with an average of about 40 active investigations at any given time. DOE is the second largest agency on CFIUS in terms of case workload. IA anticipates the workload will increase to an estimated 1,000 national security investigations per year based on the expansion of CFIUS' jurisdiction and authority under FIRRMA. DOE CFIUS foresees an immediate need for additional FTEs to train as national security investigators for CFIUS before the end of FY 2019. With the caseload likely to continue to increase in both volume and complexity, we expect to increase the staff

further by FY 2020. The increase in funding will support staffing requirements and construction of additional, secure space for conducting this activity.

BIRD

IA requests \$2 million for the Israel-US Binational Industrial Research and Development (BIRD). BIRD was established by the U.S. and Israel governments in 1977 to generate mutually beneficial cooperation between U. S. and Israeli companies. BIRD's scope extends to agriculture, communications, construction technologies, electronics, electro-optics, life sciences, software, homeland security, renewable and alternative energy and other technology sectors. BIRD supports approximately 20 projects annually. The cumulative sales of products developed through BIRD projects have exceeded \$10 billion.

United States-Israel Energy Center of Excellence

IA requests \$4 million in matching funds to contribute to the Center on behalf of the United States Government. Matching contributions are also provided by the Israeli Government and private partners from the United States and Israel. The Center is to leverage the experience, knowledge, and expertise of institutions of higher education, and entities in the private sector, among others, in offshore energy development to further dialogue and collaboration to develop more robust academic cooperation in energy innovation technology and engineering, water science, technology transfer, and analysis of emerging geopolitical implications, crises, and threats from foreign natural resource and energy acquisitions, and the development of domestic resources as a response. IA plans to engage with DOE program offices to identify experts to work with Israelis to: negotiate the detailed R&D priorities section and the selection criteria for a Funding Opportunity Announcement (FOA); participate in the technical merit review of FOA applicants; and stay engaged in periodic technical oversight of research progress.

Ukraine

Within the last years, IA has been providing support to Ukraine to ensure its energy security. One of the outcomes of this work was the development and implementation of a training exercise simulating a crisis at Ukraine's gas transmission system (GTS) that halted the natural gas supplies. With the involvement of American and other international experts, the exercise helped discover and eliminate technical deficiencies in the GTS operation, as well as improve the interaction between state authorities and international institutions during crisis situations.

Three Seas Initiative

The Three Seas Initiative is a European-led initiative launched in 2016 in Croatia by 12 countries that border the Baltic Sea, Adriatic Sea and Black Sea. The leaders of the 12 countries see this framework as a means to "complete Europe" by creating a north-south corridor in energy, telecommunications and infrastructure linking the "spokes" to each other. The 12 leaders see this initiative as a means to promote closer economic integration, increase competitiveness, bolster economic resilience and continue efforts to build a single European energy market, alongside a single European economic market. When President Trump spoke at the 3 Seas Summit last year in Warsaw, Poland, he indicated strong U.S. support for the goals of this initiative. Although the political and military bonds of the Warsaw Pact have been broken, the legacy of this energy single-supplier dependence remains, and has provided Russian leaders with the tools to maintain influence not only over energy policies of these countries, but to apply pressure in all areas of policy, trade, and investment. In 2014, after the annexation of Crimea and the invasion of Ukraine by Russian forces, Europeans were faced with the grim reality of these vulnerabilities; although Ukraine was on the front line, each country faced the possibility of Russian active measures which could be deployed to disrupt energy systems and critical infrastructure should the Kremlin choose to do so.

DOE is well-placed to work with the Three Seas Countries to advance energy security. Energy diversification and interconnectivity between states is a crucial to this effort, and key to eroding Russia's ability to use energy supplies and routes as tools for political or economic coercion. DOE could pursue several areas of engagement, including, *inter alia*: liberalization of energy markets, including a commitment to increase competition, create a transparent rules-based regime, and end corruption; advancement of grid synchronization efforts with the European grid network for the Baltic States and western Balkans; bolstering the reliability and resilience of regional grid and pipeline networks through

integration and energy cybersecurity measures and building capacity to improve energy efficiency in public and private industries.

Power Africa

DOE's work under both Electrify Africa and Power Africa has supported U.S. national energy security and foreign policy goals, including improved political and economic stability in Africa, while increasing opportunities for U.S. companies on the continent. To achieve program goals, IA: provides technical expertise to the coordinating bodies of U.S. interagency efforts in the African energy sector, which include an overarching Power Africa Working Group; implements \$650,000 in USAID Africa-funded technical assistance capacity building programs in Africa; and shepherds and reports on \$4.725 million in USAID-funded capacity building programs in Africa executed by the DOE national laboratories.

India

U.S.-India energy cooperation is a centerpiece of the important and growing strategic bilateral relationship. Our countries' converging economic and security agendas coupled with India's rising influence in the region have strengthened and elevated the important partnership between the world's largest and oldest democracies. Bilateral energy engagement with India advances U.S. and global energy security, U.S. commercial interests, nuclear security and regional stability.

India, the world's fourth largest energy consumer, expects to see its energy demand double over the next 20 years, with growing impact on energy markets, U.S. and global energy security. India now imports about 80 percent of its oil, 40 percent of its gas, and 25 percent of its coal and expects total energy imports to increase to 90 percent over the next decade. Our policy engagement can influence India's energy trajectory, to the benefit of U.S. economic and energy security interests.

China

Energy collaboration between the United States and China contributes to global energy security, global energy governance, clean energy development and deployment, lower energy costs, and nuclear security issues. It is a key priority for both countries. The United States, through the DOE, engages China on concrete, collaborative projects in these areas. China faces major climate and pollution challenges – not only with its air, but also with water and soil contamination. Water pollution is actually a larger problem for China than air. As such, China seeks innovative technologies to solve these problems, which offers opportunities for U.S. businesses. U.S.-China energy collaboration spans a number of bilateral platforms, most of which are public-private partnerships.

The U.S.-China Clean Energy Research Center (CERC) is a flagship, \$250 million collaborative program between DOE and China's Ministry of Science and Technology (MOST), and includes active participation by China's National Energy Administration (NEA) and China's Ministry of Housing and Urban Development. It pairs top researchers from both countries to accelerate development and deployment of critical technologies for clean energy in the United States and China. It is tri-funded by the U.S. government, the Chinese government, and private sector partners. It has broad participation from universities, research institutions and industry, supporting more than 1,100 researchers, with more than 100 U.S. and Chinese partnering entities (examples of U.S. partners include Lutron Electronics, Johnson Controls, Walt Disney Imagineering, General Electric, and Duke Energy). CERC also facilitates industry participation and cost sharing.

North American Energy Security

Recognizing the physical and commercial energy linkages between the United States, Canada, and Mexico, IA builds upon cooperation between the three countries that has taken place under the North American Leaders Summit to achieve energy security for North America. IA pursues cooperative engagements with strategic partners in the region to leverage Departmental expertise towards common energy security goals. The countries of the Western Hemisphere look to the United States to provide leadership to the region on shared energy and climate security challenges. DOE supports U.S. leadership through multilateral initiatives such as the Energy and Climate Partnership of the Americas. IA supports energy-related engagements and informs interagency deliberations on emerging U.S. foreign policy objectives in the Americas.

Multi-Lateral Engagement

G7: G-7 cooperation is currently designed around a set of seven G-7 endorsed energy security principles focused on transparent energy markets, diverse energy fuels, sources and routes, reducing greenhouse gas emissions, enhancing efficiency, promoting deployment of clean energy technologies as well as R&D, and improving energy system resilience and emergency response systems. Current DOE proposals include workshops on G-7 energy sector cybersecurity and energy-related employment. International Energy Agency (IEA) analytical work has also proven useful for the G-7 Energy Ministers' process. A commitment to energy security through diversification also carries economic benefits. For example, the first large-scale liquefied natural gas (LNG) exports from the continental United States began in February 2016. By most estimates, the U.S. will develop into the third largest LNG exporter by the end of the decade, creating a more global liquid natural gas market, which is consistent with G-7 energy security principles.

International Energy Agency (IEA): The Organization for Economic Cooperation and Development (OECD) was officially created on September 30, 1961, to continue the administration of American and Canadian aid under the Marshall Plan for reconstruction of Europe after World War II. The OECD helps the United States and its partners reap the benefits and confront the challenges of a global economy by promoting sound economic and social policies, free markets, safer and more efficient use of resources to reduce environmental impacts; and better innovation through science and technology. The IEA and the Nuclear Energy Agency (NEA) are Part II sister agencies under the OECD.

Asia-Pacific Economic Cooperation (APEC): APEC is the premier multilateral forum for advancing free and open trade and investment and enhancing cooperation in promoting sustainable economic growth in the Asia-Pacific region. Established in 1989, APEC seeks to leverage the growing interdependence of Asia-Pacific economies and create greater regional prosperity by promoting balanced, inclusive, sustainable, innovative and secure growth and by accelerating regional economic integration. As a non-binding, consensus-based organization, APEC fosters innovative and practical approaches to economic challenges in the region. APEC translates leader- and minister-level commitments into concrete outcomes. APEC also places a strong emphasis on private sector engagement to ensure the forum's initiatives benefit businesses as well as society at large.

Arctic Council: The Arctic is a complex system, and it remains a challenge to monitor and forecast changes—even more so due to its vastness, low population density, and extreme conditions. Arctic research is thus difficult and expensive, and it requires the availability of costly research infrastructures to observe, monitor and understand the rapid changes taking place in the Arctic. Cooperation among countries and research institutions is therefore mutually beneficial for the partnering entities. Existing national and international observing and research efforts are not yet fully able to meet the demand for comprehensive and integrated information on the Arctic. There is a need to enhance coordination and collaboration on Arctic observations from indigenous observers to high-tech autonomous systems. Costs can be reduced not only by sharing research infrastructure and observing systems, but also by making data freely and openly available in a timely manner.

Program Direction

Activities and Explanation of Changes

FY 2019 Enacted	FY 2020 Request	Explanation of Changes FY 2020 Request vs FY 2019 Enacted
Program Direction \$22,878,000	\$36,100,000	+\$13,222,000
Salaries and Benefits \$10,600,000	\$17,500,000	+\$6,900,000
The IA budget for salaries and benefits supports FTE required to execute the Office mission.	The IA budget for salaries and benefits supports FTE required to execute the Office mission.	+28 FTEs: 8 CFIUS, 3 Nuclear Energy, 7 Fossil Energy, 5 Energy Security, 5 Regional Programs.
Travel \$800,000	\$950,000	+\$150,000
Travel funding is used for international travel to meetings and events relevant to international energy policy, science and technology, and multilateral national security engagements.	Travel to support international policy, science and technology, and multilateral national security engagements.	Increase in travel activity is to support FTEs and expanded mission.
Support Services \$7,776,000	\$9,020,000	+\$1,244,000
IA is the DOE lead representative in international efforts relating to energy security and clean energy. Promote U.S. company investment and trade throughout key international markets • Support multilateral efforts to advance S&T expertise to accelerate clean energy deployment, encourage greater efficiency, promote grid integration and resilience, and boost economic opportunities. • U.S.-Israel Energy Center of Excellence • Israel-U.S. Binational Industrial R&D Foundation (BIRD) • Subscriptions/Publications. • Management Support – Provide administrative support services and technical experts for critical and complex initiatives (clean energy, innovation, energy security analysis, and infrastructure resilience.)	Management, technical and administrative support services to assist IA programmatic activities to support multilateral efforts to advance S&T expertise to accelerate clean energy deployment, encourage greater efficiency, promote grid integration and resilience, and boost economic opportunities. • U.S.-Israel Energy Center of Excellence • Israel-U.S. Binational Industrial R&D Foundation • Other Energy Initiatives • Subscriptions/Publications. • Management Support – Provide administrative support services and technical experts for critical and complex initiatives (clean energy, innovation, energy security analysis, and infrastructure resilience.)	Increase supports consolidated programs from Fossil Energy and Nuclear Energy, and Energy Security and Clean Energy Initiatives.
Other Related Expenses \$3,702,000	\$8,630,000	+\$4,928,000
Funds support Working Capital Fund expenses (including overseas presence), IT Services, and staff training.	Funds support Working Capital Fund expenses (including overseas presence), IT Services, and staff training.	Increase includes the requirements of the Foreign Investment Risk Review Modernization Act of 2018, for WCF costs associated with additional FTEs, and for IT services associated with additional FTEs.

Department Of Energy
FY 2020 Congressional Budget
Funding by Appropriation by Site
(\$K)

International Affairs

Headquarters

Program Direction

Total, Headquarters

Total, International Affairs

FY 2018 Total Enacted	FY 2019 Enacted	FY 2020 Request
0	0	36,100
0	0	36,100
0	0	36,100

Working Capital Fund

Working Capital Fund

**Working Capital Fund
Program Mission**

FY 2018 Obligations	(\$K) FY 2019 Estimate	FY 2020 Estimate
251,165	309,663	276,096

The Working Capital Fund (WCF or Fund) is a financial management tool for improving the financing and delivery of a range of common administrative services. Service delivery is assigned to business line service managers; financial responsibility resides in a Fund Manager and individual Business Line Managers are responsible for billing and funds control. The Fund creates a framework for business-like organization of support functions and market-like incentives for both customers and suppliers. The objectives of the Fund include:

- Improve the efficiency of administrative services by providing managers with the opportunity and responsibility to make choices on the amount, priority, and sources of administrative services used by their programs;
- Ensure that program mission budgets include a fair allocation of the costs of common administrative services; and
- Expand the flexibility of the Department's budget structure to permit service providers to respond to customer needs.

Fund businesses maintain performance-based plans that inform the budget and alert the Fund Manager of the need to change pricing policies. The Fund Manager reviews financial and business performance each quarter. These reviews culminate in an Annual Report that includes analysis of financial measures, including each business line's performance against its standards and its accomplishments.

WCF charges full cost recovery for each business line in its budget and program billings. Full costs in Fund prices improve cost accounting for WCF activities, support improved decision-making for business line operations and program spending, and allow the Fund Manager to benchmark against other federal agency equivalent costs. Good budgeting practice incorporates full costing, as laid out in OMB Circular A-94, to promote efficient resource allocation through well-informed decision-making that incorporates societal costs and benefits by the Federal Government.

This information will allow the Department to improve the efficiency of WCF service offerings. The Fund Manager has created controls to satisfy oversight requirements, including regular budget reports on spending. This is consistent with other agency WCFs and satisfies the need to recover costs in reimbursable activities. WCF operations are valued by customers, serve the Department, and remain within the fiscal and policy guidelines established by the Department and by Congressional Committees.

The Department continues to examine ways to use the Fund to gain greater management efficiencies. The Fund has reported efficiency and effectiveness performance metrics since its inception and documents continuous improvement efforts to provide program customers with the best goods and services possible in accordance with other statutory requirements.

Working Capital Fund: Business Line Budgets

Table 1 summarizes projected customer billings by business line. These billings are the result of established pricing policies, which provide the basis for programs to manage their utilization of the WCF and control their budgets. The FY 2020 guidance states that program office customers may utilize Program funding (as available and appropriate) for expenses that support program operations or agency mission/support and are independent of the number of staff: A-123/Internal Controls; Copy Services; Corporate Business Systems (all segments except Flexible Spending Accounts and Subsidy For Energy Employee Transit (SEET)); Financial Statement Audits; Interagency Transfers; Mail & Transportation; Pension Studies; Printing & Graphics; Project Management Career Development Program (PMCDP); and Procurement Management. WCF expenses that support staff operations or provide staff benefits and fluctuate based on the number of staff, are funded from Program Direction: Building Occupancy; Flexible Spending Accounts and Subsidy for Energy Employee Transit (SEET); Corporate Training Services; Health Services; Overseas Presence; Supply; and Telecommunications.

Table 1
FY 2020 Working Capital Fund Budget Business Lines^a
(\$K)

	FY 2018 Obligations	FY 2019 Estimate	FY 2020 Estimate
A-123/Internal Controls	2,402	2,589	2,590
Building Occupancy	125,247	112,231	112,989
Copy Services	2,936	4,038	4,085
Corporate Business Systems	38,176	47,159	47,267
Corporate Training Services	2,165	2,888	2,918
CyberOne	-21	34,831	0
Financial Statement Audits	11,959	12,166	12,170
Health Services	1,620	1,875	1,891
Indirect WCF	799	0	0
Interagency Transfers	6,732	8,807	8,813
Mail and Transportation Services	3,775	4,172	4,226
Overseas Presence	8,543	16,282	16,282
Pension Studies	270	557	557
Printing and Graphics	2,436	4,515	4,532
Procurement Management	6,486	16,264	16,264
Project Management Career Development Program (PMCDP)	1,516	1,627	1,627
Supplies	1,772	2,604	2,618
Telecommunications	34,351	37,059	37,268
Total, Working Capital Fund	251,165	309,663	276,096

^a Numbers may not add due to rounding.

Changes from FY 2019

WCF Budget estimates for FY 2020 represent a decrease of -\$33,567K compared to the FY 2019 budget submission. This includes: the removal of the CyberOne Business Line (as directed in the FY 2018 Omnibus Bill/Report) (-\$34,831K); and the addition of four new Program Office customers (+\$1,264K) – Office of Cybersecurity, Energy Security, and Emergency Response, CR; Office of Policy, OP (previously EPSA); Office of Project Management, PM; and Office of Technology Transitions, OTT – which were not included at the time of FY 2019 formulation as they had not yet been authorized in appropriations legislation.

Table 2 summarizes projected customer billings by business line and by customer program office. Billing for customer organizations may change as a result of the final FY 2020 appropriations enacted for each Program Office and/or any changes approved by the WCF Board.

Table 2
FY 2020 Working Capital Fund Budget Business Lines by Customer Program Office
(\$K)

ORG CODE	A-123/INT CNTRL	BLDG OCCUP	COPY SVCS	CORPORATE BUSINESS SYSTEMS	CORP TRNG SVCS	FIN STMT AUDITS	HEALTH SVCS	INTER-AGENCY TRANS	MAIL & TRANSP	OVERSEAS PRESENCE	PENSION STUDIES	PMCDP	PRINT & GRAPH	PROC MGMT	SUPPLY	TELECOM	TOTAL ALL ACTIVITIES	ORG
TYPE \$ *	P\$	PD\$	P\$	P\$/PD\$ (1)	PD\$	P\$	PD\$	P\$	P\$	PD\$	P\$	P\$	P\$	P\$	PD\$	PD\$	P\$+PD\$	
AR	\$ 31	\$ 2,139	\$ 10	\$ 647	\$ 8	\$ 147	\$ 16	\$ 76	\$ 55	\$ -	\$ -	\$ -	\$ 30	\$ 32	\$ 0	\$ 502	\$ 3,693	AR
AU	\$ 16	\$ 7,759	\$ 465	\$ 493	\$ 86	\$ 77	\$ 88	\$ 78	\$ 198	\$ -	\$ -	\$ -	\$ 177	\$ 51	\$ 163	\$ 1,544	\$ 11,195	AU
BPA	\$ -	\$ 121	\$ -	\$ 80	\$ 469	\$ -	\$ 99	\$ 156	\$ 15	\$ -	\$ -	\$ -	\$ 1	\$ -	\$ 1	\$ 44	\$ 986	BPA
CF	\$ 4	\$ 4,604	\$ 215	\$ 495	\$ 59	\$ 20	\$ 63	\$ 22	\$ 112	\$ -	\$ -	\$ -	\$ 61	\$ 26	\$ 81	\$ 1,128	\$ 6,890	CF
CI	\$ 1	\$ 658	\$ 7	\$ 44	\$ 9	\$ 2	\$ 10	\$ 2	\$ 36	\$ -	\$ -	\$ -	\$ 16	\$ -	\$ 14	\$ 174	\$ 972	CI
CR (2)	\$ 8	\$ 892	\$ 15	\$ 160	\$ 11	\$ 37	\$ 10	\$ 20	\$ 27	\$ 163	\$ -	\$ -	\$ 21	\$ -	\$ 15	\$ 195	\$ 1,573	CR
EA	\$ 7	\$ 1,894	\$ 60	\$ 162	\$ 32	\$ 31	\$ 24	\$ 25	\$ 80	\$ -	\$ -	\$ -	\$ 29	\$ 7	\$ 66	\$ 421	\$ 2,837	EA
ED	\$ 1	\$ 735	\$ 67	\$ 70	\$ 10	\$ 4	\$ 8	\$ 3	\$ 39	\$ -	\$ -	\$ -	\$ 56	\$ 16	\$ 20	\$ 192	\$ 1,221	ED
EE	\$ 201	\$ 11,066	\$ 621	\$ 3,550	\$ 181	\$ 945	\$ 138	\$ 498	\$ 244	\$ 651	\$ 13	\$ 24	\$ 1,970	\$ 966	\$ 321	\$ 3,810	\$ 25,200	EE
EI	\$ 11	\$ 7,466	\$ 118	\$ 841	\$ 105	\$ 51	\$ 119	\$ 39	\$ 157	\$ -	\$ -	\$ -	\$ 116	\$ 58	\$ 74	\$ 750	\$ 9,906	EI
EM	\$ 531	\$ 7,058	\$ 344	\$ 8,614	\$ 243	\$ 2,500	\$ 137	\$ 1,662	\$ 205	\$ 326	\$ 99	\$ 776	\$ 171	\$ 5,111	\$ 212	\$ 2,398	\$ 30,385	EM
FE	\$ 74	\$ 3,252	\$ 92	\$ 2,521	\$ 158	\$ 349	\$ 68	\$ 245	\$ 119	\$ 326	\$ -	\$ 74	\$ 133	\$ 1,698	\$ 94	\$ 1,458	\$ 10,659	FE
GC	\$ 3	\$ 4,609	\$ 72	\$ 350	\$ 65	\$ 13	\$ 66	\$ 13	\$ 92	\$ -	\$ -	\$ -	\$ 71	\$ 5	\$ 93	\$ 972	\$ 6,424	GC
HC	\$ 2	\$ 2,288	\$ 84	\$ 291	\$ 47	\$ 10	\$ 48	\$ 11	\$ 111	\$ -	\$ -	\$ -	\$ 49	\$ 21	\$ 51	\$ 922	\$ 3,936	HC
HG	\$ 0	\$ 787	\$ 9	\$ 92	\$ 6	\$ 2	\$ 7	\$ 2	\$ 22	\$ -	\$ -	\$ -	\$ 48	\$ -	\$ 4	\$ 88	\$ 1,069	HG
IA	\$ 1	\$ 1,618	\$ 48	\$ 119	\$ 15	\$ 7	\$ 24	\$ 8	\$ 115	\$ 651	\$ -	\$ -	\$ 45	\$ 21	\$ 25	\$ 817	\$ 3,514	IA
IE	\$ 2	\$ 100	\$ 8	\$ 23	\$ 1	\$ 8	\$ 2	\$ 4	\$ 6	\$ -	\$ -	\$ -	\$ 16	\$ 2	\$ 8	\$ 38	\$ 217	IE
IG	\$ 4	\$ 2,029	\$ 24	\$ 341	\$ 62	\$ 18	\$ 38	\$ 20	\$ 58	\$ -	\$ -	\$ -	\$ 36	\$ 6	\$ 33	\$ 445	\$ 3,113	IG
IM	\$ 7	\$ 5,926	\$ 113	\$ 259	\$ 48	\$ 33	\$ 39	\$ 43	\$ 251	\$ -	\$ -	\$ 2	\$ 92	\$ 37	\$ 158	\$ 3,189	\$ 10,198	IM
SSA	\$ 20	\$ 4,878	\$ 86	\$ 532	\$ 47	\$ 92	\$ 63	\$ 56	\$ 274	\$ -	\$ -	\$ 2	\$ 69	\$ 2	\$ 140	\$ 827	\$ 7,089	SSA
LM	\$ 14	\$ 412	\$ 23	\$ 256	\$ 19	\$ 68	\$ 8	\$ 41	\$ 24	\$ -	\$ 20	\$ 24	\$ 25	\$ 16	\$ 15	\$ 602	\$ 1,567	LM
LP	\$ 2	\$ 3,684	\$ 71	\$ 186	\$ 57	\$ 8	\$ 33	\$ 11	\$ 76	\$ -	\$ -	\$ -	\$ 26	\$ -	\$ 44	\$ 709	\$ 4,906	LP
MA	\$ 5	\$ 6,129	\$ 366	\$ 630	\$ 87	\$ 26	\$ 85	\$ 43	\$ 408	\$ -	\$ -	\$ -	\$ 267	\$ 221	\$ 145	\$ 2,038	\$ 10,420	MA
NA	\$ 956	\$ 18,924	\$ 760	\$ 13,571	\$ 429	\$ 4,503	\$ 270	\$ 3,676	\$ 672	\$ 11,259	\$ 369	\$ 373	\$ 355	\$ 3,594	\$ 423	\$ 8,879	\$ 69,011	NA
NE	\$ 82	\$ 2,264	\$ 69	\$ 1,474	\$ 85	\$ 386	\$ 66	\$ 327	\$ 112	\$ 2,418	\$ 8	\$ 103	\$ 110	\$ 47	\$ 60	\$ 1,129	\$ 8,741	NE
NR	\$ 117	\$ -	\$ -	\$ 1,308	\$ 37	\$ 554	\$ 40	\$ 272	\$ 5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5	\$ 12	\$ 2,350	NR
OE (2)	\$ 10	\$ 1,103	\$ 35	\$ 259	\$ 26	\$ 48	\$ 24	\$ 26	\$ 64	\$ 163	\$ -	\$ -	\$ 50	\$ 21	\$ 37	\$ 470	\$ 2,336	OE
OP (2)	\$ 3	\$ 1,304	\$ 24	\$ 138	\$ 18	\$ 13	\$ 21	\$ 8	\$ 60	\$ -	\$ -	\$ -	\$ 43	\$ -	\$ 38	\$ 461	\$ 2,132	OP
PA	\$ 0	\$ 365	\$ 39	\$ 55	\$ 5	\$ 1	\$ 8	\$ 2	\$ 18	\$ -	\$ -	\$ -	\$ 15	\$ 2	\$ 20	\$ 188	\$ 718	PA
PM (3)	\$ 1	\$ 565	\$ 35	\$ 93	\$ 24	\$ 3	\$ 11	\$ 5	\$ 41	\$ -	\$ -	\$ -	\$ 12	\$ -	\$ 4	\$ 151	\$ 944	PM
S	\$ 0	\$ 1,499	\$ 47	\$ 54	\$ 14	\$ 2	\$ 18	\$ 2	\$ 290	\$ -	\$ -	\$ -	\$ 90	\$ -	\$ 56	\$ 431	\$ 2,504	S
SB	\$ 0	\$ 266	\$ 9	\$ 12	\$ 2	\$ 1	\$ 3	\$ 1	\$ 36	\$ -	\$ -	\$ -	\$ 12	\$ -	\$ 5	\$ 39	\$ 386	SB
SC	\$ 469	\$ 6,283	\$ 165	\$ 7,625	\$ 209	\$ 2,210	\$ 185	\$ 1,325	\$ 180	\$ 326	\$ 49	\$ 244	\$ 186	\$ 4,262	\$ 181	\$ 1,615	\$ 25,512	SC
TT (3)	\$ 0	\$ 194	\$ 13	\$ 16	\$ 6	\$ 1	\$ 4	\$ 1	\$ 13	\$ -	\$ -	\$ -	\$ 5	\$ -	\$ 10	\$ 57	\$ 320	TT
WAPA	\$ 7	\$ 116	\$ 2	\$ 1,907	\$ 239	\$ -	\$ 51	\$ 90	\$ 11	\$ -	\$ -	\$ 4	\$ 128	\$ 43	\$ 2	\$ 573	\$ 3,174	WAPA
TOTALS (3)	\$ 2,590	\$ 112,989	\$ 4,085	\$ 47,266	\$ 2,918	\$ 12,170	\$ 1,891	\$ 8,813	\$ 4,226	\$ 16,282	\$ 557	\$ 1,627	\$ 4,532	\$ 16,264	\$ 2,618	\$ 37,268	\$ 276,096	

* Type \$ -- P\$ = Program funding; PD\$ = Program Direction funding.
 * Maximum amount is reflected for P\$; Program Office customers can still opt to use PD\$ funding at their discretion, within the authorization of their appropriation.
 * A number of DOE Program Offices have no P\$ funding, therefore their WCF share is financed with PD\$.
 1) Corporate Business Systems -- FSA & SEET segments = PD\$; all other segments = P\$.
 2) New organizations OP (EPSCA reorganization) and CR (OE split into two separate orgs) have been added as WCF customers for FY20 as they have received funding in an approved FY19 appropriations bill.
 3) FY19 Enacted Budget estimate is \$274,833K (not including CyberOne); adjusted FY20 amount includes +\$1,263K for PM and TT (not included at time of initial FY19 formulation, did not have an approved appropriation at the time) = \$276,096K adjusted total.

The following section includes a description of each business line, along with pricing policy and selected performance measures.

A-123/Internal Controls

Description

The OMB Circular A-123, *Management's Responsibility for Internal Control* and Federal Managers' Financial Integrity Act (FMFIA), define management's responsibility for internal control and include guidance for management to assess the effectiveness of internal control.

A-123/Internal Controls will ensure the Department meets the intent of the Congress and the Executive Branch for internal control of financial reporting and has appropriate support for the Secretary's annual assurance statement, included as part of the Agency Financial Report. Because the requirements of OMB Circular A-123 apply to the Agency as a whole, each benefiting program must share the cost. In addition, DOE pricing policy incorporates the full costing requirements laid out in OMB Circular A-94 to promote efficient resource allocation through well-informed decision-making by the Federal Government for evaluating societal costs and benefits.

In order to support these goals, the business line will develop, provide, and maintain the capabilities needed to implement a comprehensive Department-wide evaluation of internal controls over financial reporting. The technical support resources to maintain and support the evaluation data collection tools are currently not fully available in-house. Furthermore, the Department's internal controls over financial reporting are examined during our yearly external Financial Statement audit,

requiring as-needed technical support to document some Financial Statement related internal control processes with DOE-wide impact.

Pricing Policy

The A-123/Internal Controls charges customers a pro rata allocation of costs based on percentage share of three prior fiscal years' combined budget shares, using the Congressional request of the most recent year. Departmental programs that use proprietary financial systems, for example, Federal Energy Regulatory Commission (FERC) and the Power Marketing Administrations (PMA's) are excluded from billing for this business line.

Building Occupancy

Description

The core services in the Building Occupancy Business Line include space management (rent), utilities such as heat and electricity, cleaning services, snow removal, facility operation and preventive and restorative maintenance, pest control, trash removal, and waste recycling. Engineering and facilities services include drafting of construction documents, developing scopes of work, construction management and inspection, value engineering, leasehold administration, lock repair and key management, safety and occupational health, moving and warehousing services, and conference support. This business also provides electronic services, which involve audio/visual meeting and conferencing support, as well as repair and maintenance of Headquarters radio communications and electronic equipment. Approved improvements to the Headquarters complex are also included.

Pricing Policy

Policy is based on direct costs and allocations in the following manner:

- Each year, organizations sign occupancy agreements that define the space to be assigned to them.
- On a building-by-building basis, direct rental value of the space assigned to each organization is calculated, based on rent charged to the Department by the General Services Administration (GSA). Customer rent costs are based on areas assigned to each organization at the start of each fiscal year.
- Common use space costs in each building are divided among the tenants of that building based on their proportional shares of direct rental costs.
- Certain additional costs, such as common area improvements and health and life safety programs, are allocated as a pro rata addition to the building-by-building charges described above.
- Electronic Services charges are allocated according to direct building occupancy costs.
- In addition, tenants may arrange, at their own cost, alterations of office space.
- Charges related to property management are allocated based on program usage during the prior fiscal year.
- FY 2020 estimates reflect historical costs for utilities as well as information provided by GSA as to the anticipated rent for future years (as of FY 2017), and projections of space usage in future years (as of FY 2017) based on input from customer organizations, historical information, space availability, and Departmental objectives.

Copy Services

Description

This business provides the following services:

- Staffed photocopy centers at Forrestal and Germantown capable of reproducing 25,000 impressions per document;
- Centralized (walk-up) photocopy rooms;
- Dedicated (customer-assigned) photocopiers, including needs assessment analysis to determine workload and most appropriate equipment;
- Digital document management, including optical scanning of paper copy documents and storage on electronic files; and
- Digital news clips to programs based on subscriptions. (Note: News clips were previously provided as hard-copy documents prepared in the copy business.)

In FY 1996, before creation of the Fund, DOE Headquarters made over 100 million copies. The number of copies declined rapidly after creation of the Fund and has continued to decline. Currently, DOE Headquarters photocopies at an annual rate of 19 million copies.

Pricing Policy

Each office pays the full cost to maintain and supply its assigned dedicated photocopiers. For walk-up and staffed photocopiers, a cost per photocopy is calculated and programs are charged based on the number of photocopies made by program staff. The digitization pricing policy is to charge on a per-page basis to cover the costs of this business segment. FY 2020 estimates reflect amounts based on usage from the year prior to formulation (FY 2017).

Corporate Business Systems

Description

Corporate Business Systems (CBS) is the Department's solution for managing enterprise-wide systems and data. CBS is consolidating and streamlining Department-wide systems and business processes to integrate financial, budgetary, procurement, personnel, program, and performance information. CBS is supported at the core by a central data warehouse/portal that links common data elements from each of the Department's business systems and supports both external and internal reporting. The line of business provides efficiencies in its administration that result in a single, senior business manager for DOE's corporate business systems. The business consists of STARS, STRIPES, Funds Distribution System (FDS) 2.0, iPortal, Payment Processing (formerly ORFSC), CHRIS and related sub-segments, Digital Media and Payroll

Standard Accounting and Reporting System (STARS Segment) provides the Department with a modern, comprehensive, and responsive financial management system that records and processes accounting transactions for general accounting, payments, receivables, purchasing including obligations and reservations, accruals, plant and capital equipment, nuclear materials accounting, and many other functions. STARS is also used for financial reporting including GTAS, Standard Form (SF) 220.9, SF 224, and the Department's financial statements. Costs include all operations and maintenance support, including the Chief Information Officer's Application Hosting and annual Oracle Software licensing.

Strategic Integrated Procurement Enterprise System (STRIPES Segment) replaced and consolidated federal corporate, regional and local procurement-related systems across the Department. STRIPES automates all procurement and contract activities required or directly associated with planning, awarding, and administering various unclassified acquisition and financial assistance instruments; thereby, increasing the internal efficiency of the Department. STRIPES is also fully integrated with STARS, creating efficiency between the two systems and improving the accuracy and timeliness of funding commitments and obligations. Costs include all operations and maintenance support, including the Chief Information Officer's Application Hosting and the annual Compusearch subscription fees.

Funds Distribution System (FDS 2.0 Segment) is a corporate solution that automates, standardizes, and streamlines the funds distribution processes and procedures across the Department.

iPortal/Information Data Warehouse (IDW Segment) is the CBS face to its customers. It provides the gateway into all CBS applications and services. The IDW provides capability to integrate and store data from various corporate and/or program systems for reporting using Business Intelligence reporting tools. The CBS iPortal/IDW provides many services that connect our people, simplify our work, and liberate our data. Costs will include the operations and maintenance of the technical infrastructure, consisting mostly of Application Hosting and annual software licensing fees.

Payment Processing Segment The Oak Ridge Financial Service Center processes all of the Department's payments. Completes over 161,490 payments annually. Costs include operations and maintenance of Financial Accounting Support Tool (FAST), Vendor Inquiry Payment Electronic Reporting System (VIPERS), and the Department of Energy Payment and Collection (DOE-PAC) systems.

Corporate Human Resource Information System (CHRIS Segment) is a nation-wide operational portfolio of systems within the Department that serves as the official system of record for human resource management information for all employees. CHRIS supports the Administration's strategic human capital management initiative and expands e-government within DOE, combining electronic workflow and other best practices in work processes with a web-based IT architecture and suite of

software applications based on off-the-shelf products (PeopleSoft and Monster Government Solutions), and the legacy Employee Self-Service. This budget also funds Jobs One-Portal (J1P), recruitment using social media, and specific recruiting efforts to reach veterans and disabled veterans. In addition, costs for inter-agency contributions for electronic benefits are financed in WCF.

Digital Media Segment rationalizes hundreds of websites and streamline web operations, reducing duplicative spending, and improving overall digital communications. Costs will include the operations and maintenance of the technical infrastructure of the Department's Home Page (Energy.gov), consisting mostly of application hosting, iterative development, and platform upgrades to meet ongoing scale and usage demands.

Payroll Services Segment encompasses three areas: Payroll, Flexible Spending Account (FSA) administrative fees, and Subsidy for Energy Transit (SEET). Civilian payrolls are prepared based on authenticated documentation. Through the Defense Finance and Accounting Service (DFAS) this segment: computes, deposits, and reports Federal, State, and local income taxes; maintains employee records related to Civil Service and Federal Employees Retirement Systems (CSRS and FERS); reports retirement information to the Office of Personnel Management (OPM); and performs reconciliation of account balances with DFAS, OPM and Treasury. Accounts for and reports employee's health benefit coverage, thrift savings plans, transit subsidies (SEET), and unemployment compensation, among other non-salary employee payments. Processes donated leave into the Defense Civilian Pay System. Maintains and operates the Department's system of allocating payroll costs to the proper appropriation.

Pricing Policy

CBS activities charge programs a pro-rata allocation of costs based on percentage share of three prior fiscal years' combined budget shares, using the Congressional request of the most recent year. Exceptions to this pricing policy include:

- STRIPES charges based on the number of 1102 series system users recorded during the fiscal year prior to formulation (for FY 2020 this is FY 2017).
- ORFSC charges programs based on a pro-rata share of processed transactions during the fiscal year prior to formulation (for FY 2020 this is FY 2017).
- CHRIS and Payroll charges programs based on an allocation of Federal employment on-board by organization at the beginning of the formulation year (for FY 2020 this is FY 2018).
- SEET and FSA are charged to programs based on actual usage during the fiscal year. Estimates are derived from the twelve month period prior to formulation.

Corporate Training Services

Description

The Corporate Training Services (CTS) Business Line combines Training Delivery and Services (TDS), Learning Nucleus, OPM 360 Assessments and National Defense University (NDU) business segments to deliver courses which support the Department's mission at competitive pricing and fee for service pricing.

Learning Nucleus (formerly Online Learning Center, OLC) Segment is a web-based commercial off-the-shelf training system that provides access to online learning and training. The goal of this business segment is to use technology to deliver learning activities to the desktop where such delivery can be demonstrated to improve learning outcomes and reduce costs independently or in combination with other training methods. The overall vision of the Learning Nucleus program is to provide the capability for all DOE federal employees to have access to web-based training via the desktop. The Learning Nucleus has been structured to meet DOE needs with a customized access process and DOE-specific information (including DOE-mandated training).

Training Delivery and Services (TDS) Segment includes the design, development, and delivery of competency-based courses to meet critical skills development needs in Project Management, Program Management, and Acquisition and Assistance Management.

A series of Continuing Education courses has been added to present new topics and refresher training. Program offerings include modular course design and customized training for on-site and centralized delivery. The training management services are offered to customers on a negotiated basis only.

OPM 360 Degree Assessment Program Segment provides services through an Interagency agreement with the Office of Personnel Management. DOE's program is part of a larger effort to change the leadership culture throughout the agency. By administering leadership behavior assessments and simple, but targeted, evaluations of leadership training efforts, the Department can track changes in the perception of leadership behaviors over time and assess the effectiveness of leadership training. Participants are rated by people of varying relationships to the participant (e.g., peer, subordinate/direct report, and supervisor). Assessments will focus on leadership competencies most relevant to DOE's current strategic plan, and include items related to personal training experiences and the effectiveness of those experiences.

National Defense University (NDU) Segment provides services through an Interagency Agreement with the National Defense University (NDU/DOD) for DOE participation at the National Defense University (National War College) for Energy Master/Certificate Programs and the Advanced Management Program.

Pricing Policy

Pricing policy for Corporate Training Services Business Line is as follows:

- Learning Nucleus - Participating DOE organizations pay for Learning Nucleus access through a fixed annual fee per student and allocation of administrative costs, based on number of employees per program.
- TDS - Participating DOE organizations in the TDS pay \$250/day for each employee enrolled in professional skills training courses.
- OPM 360 - Participation in the OPM 360 Assessments is financed by the benefitting program; fees per person are based upon specific assessment options.
- NDU - Participation in the NDU is financed by the benefitting program; fees per person are based upon the specific training program.
- Federal staff support consists of program management, developing curriculum, contractor oversight of distance learning, and managing classroom delivery by contractor staff.
- FY 2020 estimates reflect amounts based on usage from the fiscal year prior to formulation (FY 2017), except Learning Nucleus, which is based on an allocation of the number of employees on-board by organization at the beginning of the formulation year (FY 2018).

Financial Statement Audits

Description

Support services relating to the audit contract are required to attain contractor expertise, needed primarily for financial statement audits required by the Government Management Reform Act (GMRA) (e.g., actuaries, petroleum engineers, information technology support personnel and vulnerability testing as required by the Federal Information Security Management Act (FISMA)). Oversight of this process and contract activities is provided by the Office of the Inspector General

Pricing Policy

The business line charges customers a pro-rata allocation of costs based on percentage share of three prior fiscal years' combined budget shares, using the Congressional request of the most recent year. Departmental programs that use proprietary financial systems (e.g., the FERC and the PMA's) will be excluded from billing for this business.

Health Services

Description

The Health Services Business Line provides common administrative services to the DOE Headquarters community. These services include Headquarters health centers, a drug testing program (DOE-wide), an employee assistance program, and disability services. The Department's analysis shows cost reductions will result from consolidating these activities under one enterprise with a focus on program demand for these services.

Health Center Segment consists of two HQ facilities: one at Forrestal and one at the Germantown. Services provided include: emergency response; travel immunizations; fitness-for-duty and pre-employment physical exams; annual influenza

vaccinations; and general occupational health concerns. The health center is operated under an Interagency Agreement with the Department of Health & Human Services, Federal Occupational Health (HHS/FOH) to provide packaged services, which reduces costs and DOE resource needs.

Drug Testing Program Segment, a DOE-wide program, provides for collection, testing, and medical review of alcohol and drug testing. This activity supports testing of DOE positions for fitness-for-duty, pre-employment, and random drug testing and positions which require a clearance (e.g., security, technical, and/or executive positions) in line with Federal mandates (Executive Order 12564; Department of Transportation Regulations; and 49 Code of Federal Regulations Part 40). The Department has an existing Interagency Agreement with Department of the Interior to utilize their contracts, which reduces costs and saves DOE resources.

Employee Assistance Program (EAP) Segment at Headquarters finances professional EAP counselors to offer assistance to DOE federal employees for family, work, health, and other concerns (work-life) in line with Federal mandates (Executive Order 12564; Public Law 79-658; Public Law 99-570 (5 U.S.C. §§7361 and 7362); Public Law 98-24 (42 U.S.C. §290dd-1); Public Law 96-24 (42 U.S.C. §290ee-1); Sec. 7361 and Sec. 7362 of Public Law 99-570; and the Public Health Services Act).

Disability Services Segment coordinates contract vendors to provide sign language interpreting services for deaf and hard-of-hearing federal employees at Headquarters in line with Federal mandates (Rehabilitation Act of 1973, as amended).

Pricing Policy

Charges for Health Service segments are based on an allocation of Headquarters Federal employment on-board by organization at the beginning of the formulation year (for FY 2020 this is FY 2018). Charges for the Drug Testing segment are based on an allocation of DOE-wide Federal employment on-board by organization at the beginning of the formulation year (for FY 2020 this is FY 2018).

Interagency Transfers

Description

Interagency transfers are necessary to finance National Archives and Records Administration (NARA) storage and management of critical DOE records and the Integrated Acquisition Environment. Other activities include E-Government initiatives, which consist of consolidation studies of lines of businesses, agency assessments and other intergovernmental procurement systems.

The DOE Records Management Program ensures compliance with the Federal Records Act of 1950, as amended, by promoting the management of records throughout their life cycle in an economical, efficient, and effective manner. DOE maintains an annual agreement with NARA on records storage costs and appropriate records management and disposition, consistent with approved records schedules.

Integrated Acquisition Environment (IAE) provides a secure business environment that facilitates and supports cost effective acquisition of goods and services in support of mission performance. To accomplish this mission, IAE focuses on the following goals:

- Create a simpler, common integrated business process for buyers and sellers that promotes competition, transparency and integrity. Increase data sharing to enable better business decisions in procurement, logistics, payment, and performance assessment.
- Take a unified approach to obtaining modern tools to leverage investment costs for business-related processes.

IAE is operated under an Interagency Agreement with General Services Administration (GSA) to provide packaged services, reduce costs, and save DOE resources by leveraging economy of services. GSA is charged with the fiduciary responsibility to work across government to provide acquisition services to support agency missions by delivering timely acquisition tools and services, including but not limited to, the Central Contractor Registration, excluded parties list, electronic subcontracting reporting, federal business opportunities, federal procurement data, wage determinations, and others, as business requirements are identified by the acquisition community.

Per the Office of Personnel Management (OPM), agencies will need to contribute funding to cover credit monitoring and related services/benefits for the OPM cybersecurity incidents affecting Federal and contract employees. Coverage will include a suite of services (e.g., credit monitoring, call center/support services, and identity theft protection).

Pricing Policy

E-Gov and NARA - these activities will be charged to programs on a pro rata allocation of costs based on percentage share of three prior fiscal years' combined budget shares, using the Congressional request of the most recent year.

OPM Credit Monitoring - Program office cost shares are based on an allocation of HQ and Field credential numbers by organization from the beginning of the formulation year (for FY 2020 this is FY 2018).

Mail and Transportation Services

Description

The Mail Center provides a variety of mail services for all official and other authorized mail for DOE and its employees. Services include the processing of all incoming postal mail, outgoing official mail, internal mail processing, accountable mail processing, pouch mail, a variety of overnight express mail services, messenger services, directory services, and pick-up and delivery services. In response to the risk of terrorism, the business line has implemented various processes for sanitizing and testing mail against bio-terrorist attacks.

The Transportation Service includes shuttle bus operations, Headquarters executive transportation, motor vehicle fleet administration, and courier service. The shuttle bus operates between DOE Headquarters facilities; utilizing two bio-diesel buses. Executive transportation is provided to Headquarters executive staff for official business required to further the mission of the Department of Energy. Motor vehicle fleet administration includes fleet maintenance, monitoring and tracking fleet activity, conducting fleet management activities, and the vehicle maintenance program. Courier service is for the delivery and pick-up of sensitive and non-sensitive material within the Washington Metropolitan area.

Pricing Policy

Mail and transportation pricing has multiple components:

- Offices pay the actual dollar cost for outgoing United States Postal Service (USPS) mail and for Federal Express or other special mail services. Offices pay for internal mail distribution based on the number of mail stops.
- Offices pay for Mail Security based on their percentage of incoming USPS mail over the preceding six-month period.
- Offices pay for Express Mail labor based on their percentage of the total volume of incoming and outgoing special mail during the preceding six-month period.
- Offices pay for USPS Outgoing labor based on their percentage of actual outgoing mail for the preceding six months.
- Offices pay for specified special services on a negotiated basis.
- Programs pay for shuttle bus services based on their prior year usage.
- Programs pay for courier and messenger services based on their prior year usage.
- Programs pay for Headquarters executive transportation services based on their prior year usage.

Overseas Presence

Description

The Department has a long-standing presence in several foreign capitals; this enables the Department to promote American trade and support critical treaties with our allies.

DOE funds 22 federal positions and 27 locally employed staff in ten countries that support the Secretary and, by extension, the entire Department. The business line provides administrative and operational support service to Departmental personnel traveling overseas for mission programs.

The budget finances federal salaries, overseas operating costs, and International Cooperative Administrative Support Services (ICASS) and Capital Security Cost Sharing (CSCS) programs. The Department utilizes State Department resources as shared services to ensure that costs are minimized.

Pricing Policy

Charges for Overseas Presence are based on actual usage of these services by program offices. The annual bill for these charges will cover the fixed cost of the program and be allocated to programs based on the previous year's actual usage. FY 2020 estimates reflect allocations determined by the Overseas Presence Advisory Board based on negotiations with related programs.

Pension Studies

Description

Pension Studies provide program offices with an independent measure of contractor benefits and compare each contractor to both an internal and external benchmark. Program offices use the results of these studies in discussions with contractors regarding the need for reducing costs associated with contractor employee benefits. Results can be measured by the changes made to contractor employee benefit plans.

Pension Studies require access to actuarial expertise that is essential to understanding the implications on federal budgets of potential pension liabilities. Factors that impact pensions are dynamic and include: volatility of contributions, inflation, provisions in benefit plans, workforce restructuring, and pension legislation. These studies support the Department's budget projections, financial statements analysis, Office of General Counsel, and pension management plan.

Under the terms of the contracts that the Department has with each of its management and operations (M&O) contracts, the Department reimburses the contractors for reasonable costs associated with fulfilling their duties under the terms of the contract. These reasonable costs include costs associated with providing benefits to the contractors' employees. Beginning in 2009, the Department increased its oversight of these benefits and began annual reporting on the expected reimbursements for pension plans. DOE also reports on expected reimbursements for other postretirement benefits (primarily medical).

A key goal of this oversight is to improve transparency among the contractors with respect to the benefits being provided to the contractors' employees, as well as the associated annual cost per employee. The collection and analysis of this data requires a great deal of personnel, including the use of external actuarial services. However, publicizing the results of the survey has exerted pressure on the contractors to address the costs associated with their benefit plans. In addition, the Department has relied on external actuarial services to assist in the analysis of the information provided during the annual pension management review process, as well as in analyzing the impact of various proposals for cost reduction in the benefits provided by the different contractors. Given that there are approximately 50 pension plans and a similar number of postretirement benefit plans, analysis across the entire complex requires a significant amount of resources.

Pricing Policy

Programs will be charged based on each program's sites' ratio of the total pension and post-retirement reimbursements reported in the April Report to Congress for the prior fiscal year. Studies are conducted on a biannual cycle (currently the odd fiscal years), with reduced funding levels required for off-cycle years (currently even fiscal years).

Printing and Graphics

Description

The Printing and Graphics Business Line provides procurement and liaison services with commercial printers through the Government Printing Office. It also provides design and development of pre-press graphics, electronic forms and exhibits, and court reporting services. Contractor staff distributes materials produced in-house as well as materials produced by other government agencies. This business line also provides professional photography, lab technicians, portrait studio

operations, graphics, visual aids, and presentation materials. Centralized visual archives are provided through a repository of general interest photos.

Pricing Policy

Organizations pay direct costs for printing, printed products, Federal Register publications, and graphics services. Additionally, programs pay maintenance costs on graphics equipment and graphics supplies as a percentage allocation of costs incurred in the previous fiscal year. FY 2020 estimates reflect amounts based on usage from the fiscal year prior to formulation (FY 2017).

Procurement Management

Description

Audit Services, Contract Closeout, and Purchase Card Surveillance business segments work together to help validate compliance with procedures and improve the internal controls of the Department. These segments also respond to specific issues raised by the Inspector General. Ultimately, savings to programs are realized by preventing fraud, waste, and abuse.

Audit Services Segment of the business actually represents funding to various federal audit agencies; however, the majority of the funding is provided to the Defense Contract Audit Agency (DCAA). DCAA provides audit services to the Department's program offices and contracting officers in support of their acquisition activities. These services benefit the contracting officers in supporting their determination for reasonableness and realism of the contractor's proposed rates.

Contract Closeout Segment of the business is the final stage in contract administration support for DOE Headquarters elements. Services include ensuring that all contracted products and services have been delivered, final releases are obtained, final invoices and vouchers are processed for payment, and any remaining unexpended funds under the contract are released. Since FY 1996, the universe of contract instruments has steadily decreased. Over \$217 million has been de-obligated from expired contracts in the 22 years this activity has been operating as a Fund business. During FY 2018 the return on investment calculation shows that for every one dollar invested in the contract closeout activity, \$26 of uncosted funding was de-obligated from expired instruments. As a result of the Grants Oversight and New Efficiency (GONE) Act of 2016, the closeout of financial assistance instruments were prioritized. During FY 2018, the Contract Closeout Team successfully closed all GONE Act financial assistance awards that were delivered to HQ Procurement Services for retirement.

Purchase Card Data Mining segment monitors purchase card usage within the Department. DOE purchase cards are issued under a task order through the SmartPay2 program administered by GSA. Funding for this effort is derived from rebates DOE elements receive, based upon the dollar volume of purchases. The vendor provides a version of the data mining system, entitled to DOE at no cost for the basic version. This business unit will detect patterns, trends, and/or anomalies for use in risk management, spend patterns, and other areas of analysis.

Pricing Policy

Procurement Management pricing has multiple components:

- Closeout - each Headquarters element pays the actual contract closeout cost, determined by the unit price of each contract type and negotiated level of service.
- Purchase Card Data Mining costs are allocated based on the distribution of refunds resulting from the DOE purchase card program.
- DCAA audits are charged to programs based on actual usage from the previous fiscal quarter.
- FY 2020 estimates reflect amounts based on usage from the fiscal year prior to formulation (FY 2017).

Project Management Career Development Program

Description

The Project Management Career Development Program (PMCDP) provides a wide range of developmental, mentoring, training, and rotational activities which lead to project management certification. Project management certification under the program is based upon the requirements for training, developmental activities, and experience outlined in the certification standard contained in DOE Order 361.1B, Chapter IV, and meets the certification requirements of the Federal Acquisition Certification for Program and Project Managers defined in OMB OFPP Policy Memo dated December 16, 2013. PMCDP defines necessary DOE project management knowledge, skills and abilities, as well as DOE training course requirements. Components of PMCDP also include a DOE career development tracking system and a DOE project management certification program.

Pricing Policy

In FY 2020, the business line will continue to assess programs based on the number of projects, the amount of projects in the portfolio, and the number of incumbent project directors or potential project directors identified by the programs. Fixed costs related to the PMCDP will be charged to programs based on their pro-rata share of the number of projects and the value of those projects in the Project Assessment and Reporting System (PARS II). The variable costs of delivering courses will be charged to programs based on their pro-rata share of targeted participants. FY 2020 estimates reflect amounts based on programmatic statistics reported in PARS II and PMCDP Program participant profile data at the time of formulation (FY 2017). This data includes estimates of present and forecasted needs that include number of projects, portfolio value of projects, and the number of incumbent and candidate project directors.

In addition, we expect some programs outside of the assessment pool to desire participation in the training offered. In those cases, the business will allocate a certain number of slots, on a space-available basis, at the rate of \$200 per day. These charges will offset other development costs and future charges to the programs.

Supplies

Description

This business line operates two self-service stores, which carry a wide variety of consumable office products. At customers' request, it acquires specialty items, not stocked in the stores. Products carried are based on review of equipment in the agency inventory and customer input and suggestions. This business operates the supply stores as a commercial operation, which is paid only for the supplies purchased by DOE employees. In support of federal green purchasing Executive Orders and statutory mandates, the Headquarters supply stores (located in Forrestal and Germantown) offer a wide range of environmentally-friendly supplies that are energy efficient or contain post-consumer waste (recycled) materials, bio-based materials (biological, agricultural or forestry-based), and biodegradable materials (decompose easily).

Pricing Policy

Each organization pays for supplies purchased by its employees. FY 2020 estimates reflect amounts based on usage from the fiscal year prior to formulation (FY 2017); extraordinary or unusual changes in usage patterns are not anticipated in the Fund's estimates.

Telecommunications

Description

The Telecommunications Business Line consists of comprehensive enterprise activities to include: Network and Voice Infrastructure Services, DOE Net Services and Cellular Services.

Network and Voice Infrastructure Services Segment provides connectivity for DOE Headquarters (HQ) and Field operations through Local and Wide Area Networks. This connectivity provides interoperability for organizational Local Area Network (LAN) segments in two main Headquarters and associated satellite buildings; and connectivity to the Headquarters application host systems. LAN connections provide access to and cybersecurity for the internet, electronic mail and other applications for information processing and sharing through infrastructure.

Voice infrastructure connects two main Headquarters and satellite buildings for internal dialing and basic line service. The infrastructure includes communication networks, installed telephone and processing switching equipment. Telephone services includes local, long distance and international dialing; and specialized services such as operator-assisted conference calls, voice mail, call forwarding and automatic ring-back.

DOEnet Services Segment provides connectivity to the entire national complex. DOEnet is a centrally managed DOE-Wide Area Network that provides a common standard service to carry business related data, access to the Trusted Internet Connection (TIC) compliant service, and access to Headquarters Corporate applications, systems and services DOE-wide.

Cellular Services Segment encompasses procurement of cell phones, smart phones, pagers and other cellular equipment. The cellular device costs are monitored regularly and carrier plans are centrally adjusted to attain maximum savings.

Direct Customer Charges Segment supports above-standard services including: local, long distance and international person-to-person and operator-assisted calling; specialized services such as multiple-party conferencing and electronic voice mail; Federal Relay Services which enable federal employees who are deaf, hard-of-hearing, deaf/blind, or have speech disabilities equal communication access; Wireless Access Point (WAP) hardware; cabling projects requiring use of external vendor support; toll-free services; circuit costs that support specific customer locations; and procurement of other telecommunications related equipment.

Pricing Policy

Charges for Telecommunications are based on actual usage of these services by program offices, including the following components:

- **Network and Voice Infrastructure Services Segment** – Infrastructure charges represent infrastructure costs which are composed of: (1) the cost of leased telecommunications circuits; (2) the cost of maintaining common infrastructure components and upgrades where needed; and (3) the cost of providing technical staff to install, repair and monitor/operate the various common infrastructure components. These charges are allocated among program organizations based on the number of active LAN connections and phone numbers, as a monthly charge. Since the Fund's inception, program customers have been validating the number of these connections. The costs of dedicated communication circuits are allocated to organizations requesting installation of such lines. All long distance, local and international calls at Headquarters are allocated to the originating telephones and thus to programs based on the actual billing information.
- **DOEnet Services Segment** - DOEnet costs are predominately comprised of: (1) the cost of leased telecommunications circuits; (2) site hardware components and maintenance; and (3) the cost of technical support staff. DOEnet costs are allocated to participating sites based on the costs associated with providing the service – circuit costs, hardware and maintenance costs, and the costs of technical support staff.
- **Cellular Services Segment** - Cellular charges represent costs which are composed of: (1) administrative support involved with ordering, activation, rate analysis, rate selection, deactivation, accumulating, translating and validating commercial vendor billing data systematically for the record keeping, accounting and financial reporting and customer reporting; (2) cellular device costs; (3) cellular plan costs. Administrative charges are allocated among program organizations based on the number of active cellular devices, as a monthly charge. All cellular device and plan costs are allocated to the program office owner.
- **Direct Customer Charges Segment** - Programs are billed in proportion to consumption of goods and services. FY 2020 estimates reflect amounts based on usage from the fiscal year prior to formulation (FY 2017); extraordinary or unusual changes in usage patterns are not anticipated in the Fund's estimates.

Crosscutting Activities

Crosscutting Activities

Exascale Computing Initiative (ECI) (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
DOE Office of Science	\$413,500	\$513,706	\$499,735
National Nuclear Security Administration	\$208,408	\$157,072	\$309,303
Total, Exascale Computing Initiative	\$621,908	\$670,778	\$809,038

Summary

The Department of Energy continues its support for the Exascale Computing Initiative (ECI) in FY 2020. The objective of the ECI is to develop and deploy three exascale-capable computing systems with an emphasis on sustained performance for relevant applications and analytic computing to support DOE missions. The ECI is a partnership between the Office of Science (SC) and the National Nuclear Security Administration (NNSA). In FY 2020, funding will support continued development of two SC-supported exascale systems to be hosted at the Leadership Computing Facility (LCF) at Argonne (ALCF) and Oak Ridge (OLCF) National Laboratories. The first of these two exascale systems will be deployed calendar year 2021 at ALCF, with the OLCF system coming on line in the 2021 – 2022 timeline. In addition, the FY 2020 Request will provide support for the procurement of and site preparation for a third exascale system delivered to NNSA at Lawrence Livermore National Laboratory (LLNL) in FY 2023. All three systems are being designed to provide complementary capabilities in order to ensure U.S. leadership in high performance computing.

Overview

It is imperative for the United States to retain its primacy in high-performance computing (HPC) to ensure its national security, economic prosperity, technological strength, and scientific and energy research leadership. Failure to address our national security, science, and increasing big data needs will open the door to other nations with demonstrated commitment to HPC investment to take the lead not only in high-end computing but also eventually in science, national defense, and energy innovation, as well as in the commercial computing market. If the U.S. defers the lead in HPC technology to other nations, the risks could include being subject to potential export controls exerted by these nations, as well as cybersecurity and computer supply chain risks. To achieve the exascale goal, the U.S. government must actively engage industry in HPC technology development. Past partnerships between the U.S. government and industry have led to the development of highly innovative technologies that met both federal government and private sector objectives.

In 2015, the National Strategic Computing Initiative (NSCI) was established to maximize the benefits of HPC for U.S. economic competitiveness, scientific discovery, and national security. Within that initiative DOE, represented by a partnership between SC and NNSA, has the responsibility for executing a joint program focused on advanced simulation through an exascale-capable computing program, which will emphasize sustained performance and analytic computing to advance DOE missions. The objectives and the associated scientific challenges define a mission need for a computing capability of 2 – 10 ExaFLOPS (2 billion billion floating-point operations per second) in the early to mid-2020s.

SC and NNSA are collaborating on the ECI, involving close coordination of future and relevant existing programs. Through a coordinated pursuit by government, industry, and academia, the key exascale challenges are: parallelism, system reliability, energy efficiency, and memory and storage. The ECI goal is to significantly accelerate the development and deployment of exascale-capable computing systems, applications and software infrastructure to meet national security needs and to provide next-generation tools for scientific discovery. The planned systems would provide a 50-fold increase in sustained performance over today's 20 petaFLOP (PF) computing systems and enabling applications to address next-generation science, engineering, and data problems in support of DOE missions.

Future-generation systems will require significant changes in how high performance computers are designed and developed. The new designs proposed by industry to address the growing need for energy efficiency, artificial intelligence and data analytics will result in massive parallelism, down to the processor level, which the HPC user community has never experienced before. We have reached a point where the continued improvement in processing performance requires breakthroughs to resolve the Von Neumann memory bottleneck, reducing power consumption, and solving unique problems of computing at unprecedented scales. As a consequence, DOE's approach to overcoming HPC technology challenges is aimed not simply at realizing a single, albeit exceptional, computing performance objective, but rather at setting the U.S. on a new design trajectory to support a broad spectrum of capabilities over the succeeding years.

Concurrent research and development (R&D) in applications that will optimally exploit emerging new exascale computing architectures is a critical component of a federally funded effort in exascale computing. SC and NNSA have already initiated R&D efforts in extreme-scale application development. Starting in FY 2017, these two offices began to provide leadership and assist with the enabling of the next generation of important applications to solve applied energy and national security problems. Selected applications include those that support nuclear weapons stockpile stewardship, scientific discovery, energy technology innovation, electrical generation and distribution, nuclear reactor design and longevity, and data assimilation and analysis.

In FY 2017, the SC R&D portion of the ECI was segregated into the Office of Science Exascale Computing Project (SC-ECP) as a new Exascale Computing subprogram in SC's Advanced Scientific Computing Research (ASCR) program. ECP provides the R&D necessary to design an exascale-capable system. For additional transparency, in the FY 2020 Budget Request, ASCR provides funds in ECI to support site preparations and non-recurring engineering investments at the Leadership Computing Facility (LCF) at Argonne (ALCF) and Oak Ridge (OLCF) National Laboratories for the deployment of an exascale system in calendar year 2021 at ALCF and an architecturally diverse exascale system in the 2021-2022 timeframe at OLCF. In addition, the ECI also includes the portion of the FY 2020 Budget for Basic Energy Sciences (BES) investments that include computational materials and chemistry applications related to exascale computing.

In FY 2020, the NNSA portion of the ECI is categorized as the Office of Advanced Simulation and Computing (ASC)'s Advanced Technology Development and Mitigation (ATDM) subprogram and the Exascale System procurement effort. In addition, the NNSA ECI portfolio also includes the Lawrence Livermore National Laboratory infrastructure modernization project to prepare for the siting of the NNSA exascale system in FY 2023.

The DOE ECP is organized around three technical focus areas: 1) Application Development, targeting specific R&D activities and outcomes that address critical DOE missions applications and grand challenge problems; 2) Software Technology, with efforts that span low-level operational software to high-level applications software development environments, including the software infrastructure to support large data management and workflows; and 3) Hardware and Integration, which supports vendor-based R&D efforts and the integration of ECP with the facilities projects that are delivering the exascale systems.

Highlights and Major Changes in the FY 2020 Budget Request

In FY 2020, DOE proposes to establish the baseline for the Exascale Computing Project and proposes to continue its efforts in three ECP technical focus areas. SC and NNSA will fund the relevant applications in their respective areas, equitably fund software technology projects to support each program's application requirements, and jointly invest in vendors' hardware technologies.

ECP Focus Area 1: Application Development

- Exascale Co-Design Centers, research to co-design, with industry, hardware and software architectures for a set of DOE mission-relevant applications;
- Readiness to use Exascale-capable Systems, continuing the development of a suite of exascale applications

software packages that address exascale challenges to ensure maximal scientific and engineering impact of the exascale systems.

ECP Focus Area 2: Software Technology

- Software Technology Research and Development, developing the many necessary, complex exascale software technologies, including programming environments, scientific data management, software productivity and resilience, libraries and frameworks and will develop an high quality, sustainable software suite.
- The resulting software stack must cover the full spectrum of computing, including terascale and petascale, as well as the exascale systems.

ECP Focus Area 3: Hardware and Integration

- Hardware Research and Development, to be conducted by computer vendors, aimed at developing critical exascale technologies.
- Integrate deployment of specific outcomes and products on targeted systems at computing Facilities, including the transitioning completed PathForward projects to Facility non-recurring engineering (NRE) (where appropriate), and the engaging in continuous integration of software and applications on pre-exascale and exascale system resources at Facilities

Exascale Computing

Funding by Appropriation and Program (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 vs FY 2019
SC-ECP (17-SC-20)	\$205,000	\$232,706	\$188,735	-\$43,971
<i>ECP Focus Area 1: Applications</i>	\$118,000	\$120,706	\$115,735	-\$4,971
<i>ECP Focus Area 2: Software</i>	\$47,000	\$62,000	\$60,000	-\$2,000
<i>ECP Focus Area 3: Hardware</i>	\$40,000	\$50,000	\$13,000	-\$37,000
Argonne Leadership Computing Facility (ALCF)	\$110,000	\$140,000	\$150,000	+\$10,000
Oak Ridge Leadership Computing Facility (OLCF)	\$62,500	\$100,000	\$125,000	+\$25,000
Basic Energy Sciences	\$26,000	\$26,000	\$26,000	+\$0
Biological and Environmental Research	\$10,000	\$15,000	\$10,000	-\$5,000
Total, SC Exascale¹	\$413,500	\$513,706	\$499,735	-\$13,971
Advanced Simulation and Computing (ASC)				
-Advanced Technology Development & Mitigation (ATDM)	\$183,408	\$89,072	\$174,825	+\$85,753
<i>ECP Focus Area 1: Applications</i>	\$30,000	\$30,000	\$30,000	-\$0
<i>ECP Focus Area 2: Software</i>	\$45,000	\$35,073	\$15,000	-\$20,073
<i>ECP Focus Area 3: Hardware</i>	\$40,000	\$0	\$40,000	+\$40,000
<i>ECI Stockpile Simulation</i>	\$16,000	\$11,000	\$35,005	+\$24,005
<i>ECI Stockpile Computing</i>	\$52,408 ²	\$12,999	\$54,820	+\$41,821
- Exascale Class Facility Modernization (18-D-620)	\$3,000	\$23,000	\$50,000	+\$27,000
- Exascale Class Computer Cooling Equipment (18-D-670)	\$22,000	\$24,000	\$0	-\$24,000
- Exascale System	\$0	\$21,000	\$84,478	+\$63,478
Total, NNSA Exascale	\$208,408	\$157,072	\$309,303	+\$152,231
Total, ECI	\$621,908	\$670,778	\$809,038	+\$138,260

Departmental Collaboration

ECP is being executed within a tailored project framework that follows the principles of DOE Order 413.3B, which defines critical decision points, overall project management, and requirements for control of a baselined schedule and cost. A single federal official from the Oak Ridge Site Office has overall responsibility for execution of the project, in partnership with a deputy federal project director from the Lawrence Livermore Field Office, and they report to the cognizant SC and NNSA Headquarters program offices and are accountable to an Acquisition Executive, as defined in DOE Order 413.3B. Project execution is governed by a baselined schedule and cost envelope, using Office of Science processes, and will follow defined processes for change control and management of contingency once the performance baseline for ECP is established.

¹ The SC-ECP project was initiated in FY 2017 and in FY 2018 funds to prepare the LCFs for deployment of at least one exascale system were included in ECI. Only a portion of the OLCF funds are shown because they are also operating Summit which is a 200 PF pre-exascale system; funding for the ALCF is primarily focused on the delivery of the exascale system. BES investments in computational materials and chemistry applications are also included in ECI but not shown on the table for FY 2017 and beyond.

² Subsequent to FY 2018 Enactment, funding was reallocated to reflect cost schedule changes.

Because of the breadth and complexity of the research and development of the applications, software environment and hardware technologies, along with the deployment of usable exascale computers for DOE, an Integrated Project Team (IPT) has been established through an IPT charter with defined roles and responsibilities. The IPT supports the federal official, who leads the IPT through the lifetime of the project.

ECP Focus Area 1: Application Development (\$145.735M)

SC: ASCR (\$115.735M)

In this focus area, ASCR will continue to prepare applications critical to the scientific and energy missions of the Department and other Federal agencies for the delivery of the 2021 Exascale system. SC-ECP will build on ASCR's long history of the development of computational partnerships to ensure that scientists will make effective use of high performance computing.

NNSA: ASC (\$30.0M)

NNSA will be responsible for determining the scope and management of the stockpile simulation application development that is included in this focus area. Confidence in the safety and reliability of the nuclear weapons stockpile relies on high-fidelity simulations of all of the physical processes occurring within a nuclear weapon and the processes that support the design, production, maintenance, and evaluation of the nuclear arsenal, including life extension programs and weapons dismantlement. The ASC integrated design codes (IDCs) model various aspects of nuclear weapons and each have several million lines of code to accurately reflect the multi-scale, multi-physics phenomena occurring in a nuclear weapon. The accuracy of these IDCs underpins confidence in the U.S. nuclear deterrent and must be improved, with the ATDM Application funding, to ensure continued future confidence in the nation's stockpile. Exploiting the multi-level parallelism demanded by emerging architectures leading to exascale requires significant investment for new stockpile simulation code development over the next 5-7 years.

ECP Focus Area 2: Software Technology (\$75.0M)

SC: ASCR (\$60.0M)

In partnership with NNSA, investments in the Software Technology focus area will provide the required software that effectively bridges between the other focus areas of the ECP. In FY 2020 the SC-ECP the software technology effort will continue to test and scale the software stack on current platforms in preparation for the delivery the exascale system in 2021. In addition, information from scaling studies will be shared with the application development teams to ensure that the application codes can fully utilize exascale architectures and that are resilient to hardware faults.

NNSA: ASC (\$15.0M)

With its stockpile stewardship mission, ASC will make strategic investments in ECP ST to directly support its IDC development requirements, where appropriate. Funding will support further development of compilers and math libraries for the NNSA suite of weapons codes that are aligned with the algorithms and approaches used in those codes. This focused research is needed to optimize the performance of the algorithms within the overall simulations that are the most time demanding or require highest control of precision in numerical approximations. Also, investments will be made in various performance analysis tools and visualization techniques to aid code developers and users to navigate on the new advanced architecture systems.

ECP Focus Area 3: Hardware and Integration (\$53.0M)

SC: ASCR (\$13.0M)

In partnership with NNSA, ASCR investments will support the Hardware and Integration focus area, providing funds to support research and development to deliver critical exascale hardware technologies through the PathForward program. ASCR will have fulfilled its PathForward obligations in FY 2019. Funds in FY 2020 will be used continue the support of the close integration between ECP and the ASCR Leadership Computing Facilities, which will provide

the testbeds and other computational resources to test and scale ECP applications and software.

NNSA: ASC (\$40.0M)

NNSA will conclude its obligation to fund the vendor R&D PathForward projects in FY 2020. Where appropriate, ASC will make strategic investments to directly support its stockpile stewardship code development requirements, such as scalable and high-performance interconnect technologies, multi-level memory management and heterogeneous-architecture programming.

Other Non-Focus Area ECI Investments (\$535.303M)

SC: BES and Biological and Environmental Research (BER) exascale application development (\$36.0M)

Both programs are focused on development of new application areas that will be exascale ready. BES will be responsible for determining the scope and management of the Functional Material and Computational Chemistry programs that are included in the in the focus area. BER will be responsible for determining the scope and management of the Climate Modeling programs that are included in the focus area.

SC: LCF Investments (\$275.0M)

ASCR will provide the ECP teams with access to current testbeds and upgraded systems in the ALCF and OLCF as well as systems at the National Energy Research Scientific Computing Center (NERSC). ASCR will also invest in site preparation and significant non-recurring engineering activities at the LCFs to deliver at least one exascale system in 2021 timeframe.

NNSA: Stockpile Simulation (\$35.005M)

NNSA will continue funding the development of hostile environment simulation capabilities and provide support for additional physics and engineering models, as well as new verification and validation methodologies, required for its next-generation weapons codes. In FY 2020, NNSA will evaluate and transition, as appropriate, the viable and validated next-generation code capabilities into its IDC portfolio which will be used for annual assessment activities. Funding also supports projects at the NNSA Labs that will seek to increase the capacity and capability of an enduring national HPC ecosystem via inter-agency collaborations with other U.S. Federal agencies.

NNSA: Stockpile Computing (\$54.82M)

NNSA will deploy additional advanced-architecture testbeds and prototype systems for the initial testing and iterations of its next-generation integrated design codes. Funding will also be for the development, maintenance and user support for the tri-lab software stack that will be required for the next-generation codes to run efficiently on these advanced hardware. In addition, NNSA will invest in the application of advanced machine learning techniques, which are well suited to the imminent advanced architectures, to solving stockpile stewardship problems.

NNSA: Infrastructure Modernization (\$50.0M)

NNSA will continue its investment in upgrading the structural, mechanical, and electrical capacities at Lawrence Livermore National Laboratory to prepare for the hosting of its 2023 exascale system, named El Capitan.

NNSA: Exascale System (\$84.478M)

NNSA will embark on a multi-year, non-recurring engineering collaboration with selected 2023 exascale system vendor, focusing on key advanced system engineering efforts and software technologies to turn the 2023 exascale system into a capable and productive computing resource for the Stockpile Stewardship Program.

Key Accomplishments and Objectives

FY 2016 Key Accomplishments

- Formally started the DOE Exascale Computing Initiative.
- Initiated the ECP and established Project Office at Oak Ridge National Laboratory.
- Initiated the first set of ECP projects in the areas of Application Development, Co-Design and Software Technologies. Initiated greater engagement with the applied energy offices.
- Initiated interaction with other U.S. agencies to establish co-design centers for their application areas of interest.
- Completed exascale requirements gathering activities with SC program offices.
- Achieved approval of Mission Need statement at Critical Decision-0 (CD-0) for ECP in July 28, 2016.

FY 2017 Key Accomplishments

- Achieved approval of the ECP Alternatives Selection (CD-1) and of Long Lead Procurement (CD-3A) to invest in hardware technology research and testbeds after the appropriate independent project reviews.
- Initiated additional ECP projects in the areas of software technologies and co-design centers.
- Initiated additional ECP SC application development projects.
- Finalized site preparations activities for CORAL upgrade at the OLCF.
- In July, began deployment of Summit, the CORAL system at the OLCF.
- Continued to renegotiate the CORAL ALCF contract with Intel/Cray to include non-recurring engineering investments for the delivery of an exascale capable system in calendar year 2021.
- Conducted a Design Review for the proposed exascale system at ALCF in September.
- Developed and approved CORAL II Mission Need Statement to begin planning for an exascale capable system at the OLCF in 2021-2022.
- Established six ECP Hardware Technology PathForward contracts.
- Held the first annual meeting of the ECP project teams with over 400 participants.
- Developed succession plan for ECP project management.

FY 2018 Key Accomplishments

- Conducted annual Independent Project Review to evaluate the ECP's progress in January that approved moving \$1.12B in scope for testbeds and NRE activities with the vendors to the relevant ASCR and NNSA high performance computing facilities
- Added a co-design center focused on artificial intelligence which is comprised of researchers from eight national laboratories (ANL, BNL, LANL, LBNL, LLNL, ORNL, PNNL, SNL)
- Completed deployment of the 200 PF Summit and begin operations at the OLCF. Summit was the most powerful system in the world according to the June, 2018 and November, 2018 Top500 list.
- Conducted an Independent Project Review (IPR) to re-baseline the ALCF Coral project to reflect the change in scope to deploy an exascale system in calendar year 2021 and begin NRE and site preparation activities.
- Finalized the NRE and build contracts between Argonne and Intel/Cray for the delivery and deployment of an exascale system in calendar year 2021.
- Conducted an IPR at OLCF to approve the siting and alternative analysis (Critical Decision 1) for the proposed exascale system to be deployed in the 2021-2022 timeframe.
- Released the CORAL II RFP on April 9, 2018 with proposals due May 24, 2018.
- Accelerated development of NNSA's next-generation integrated design code and develop new hostile environment simulation capabilities.
- Improved NNSA proxy applications to enhance co-design interactions with computer vendors.
- Deployed advanced hardware test beds to assist in the performance analysis of NNSA's next-generation weapons codes.
- Completed Analysis of Alternatives, Critical Decision (CD)-1, CD-2/3, and final construction design for the Lawrence Livermore ECFM Project.

- Convened the second annual meeting of the ECP project teams in February to review progress and continue co-design discussions between activities.
- Met with relevant DOE program offices to review progress on key applications.
- Finalized engagement plans between ECP and ASCR and NNSA high performance computing facilities to support scaling of ECP applications and software on current systems. Also include relevant ECP applications in early science programs for proposed ALCF and OLCF exascale systems.
- Developed a comprehensive milestone table that includes important ECP and facility milestones.

FY 2019 Key Accomplishments

- Conduct an IPR of ECP in early FY 2019 to ensure that the project is on track for finalizing the project's cost, schedule and scope.
- Conduct a second IPR in late FY 2019 or early FY 2020 to approve CD- 2 for ECP to finalize the project's cost, schedule and scope.
- Review and approval Critical Decision 2 for the OLCF CORAL II system.
- Conduct the annual IPR for the ALCF CORAL exascale system to ensure that the project and vendor is on track to deliver an exascale system in calendar year 2021.
- Convene third annual meeting of the ECP teams in January to review progress and continue co-design discussions between activities.
- Continue testing new application codes and system software on pre-exascale hardware at DOE facilities.
- Finalize site preparation at LANL for the siting of the ASC Crossroads system.
- Evaluate the performance potential of the NNSA ATDM application codes and software on the LLNL Sierra system.
- Initiate the LLNL Exascale system's NRE contract and the Center of Excellence activities with the selected vendor.

FY 2020 Key Objectives

- Obtain approval for CD- 2 for ECP.
- Conduct annual IPR of ECP to ensure the project is on track and meeting cost, scope and schedule.
- Finalize site preparations at the ALCF for delivery of exascale system in calendar year 2021.
- Continue NRE investments at the ALCF, OLCF and LLNL for proposed exascale systems.
- Demonstrate the viability of and initiate transfer of select NNSA ATDM application and software technologies to the ASC IDC portfolio for annual assessment mission
- Convene fourth annual meeting of the ECP project teams in February to review progress and continue co-design discussions between activities.
- Initiate delivery of NERSC-9

Research and Development

The FY 2020 Budget Request refocuses the Department's energy and science programs on early-stage research and development (R&D) across the Department of Energy (DOE) complex, program offices, and national laboratories to advance American primary scientific and energy research in an efficient and cost effective manner. This continues the move to focus on cutting-edge innovation, while promoting the transition of those breakthroughs to the private sector for commercialization.

The DOE supports R&D activities and facilities to ensure that the U.S. remains at the leading edge of discovery and to provide the science and technology to fuel innovation and long-term economic growth. The vast scope of the R&D activities encompasses high priority areas such as exascale computing, quantum information science, artificial intelligence, energy sector resilience and cybersecurity; and the operation of a vast array of scientific user facilities in support of R&D.

The Department's FY 2020 budget request ensures the Department's world-leading science and technology enterprise—including its 17 national laboratories—continue to expand the frontiers of energy R&D in support of the Nation's energy and national security.

Highlights of the R&D budget are as follows:

- The Office of Science (SC) supports a balanced research portfolio of basic scientific research probing some of the most fundamental questions in areas such as: high energy, nuclear, and plasma physics; materials and chemistry; biological and environmental systems; applied mathematics; next generation high-performance computing and simulation capabilities; and basic research for advancement in new energy technologies. In addition, the SC FY 2020 Request is organized around providing support for the following Administration priorities:
 - Artificial Intelligence to improve the robustness, reliability, and transparency of 'Big Data' and AI technologies, uncertainty quantification, and development of software tools to tightly couple simulation, data analysis, in support of AI for DOE mission applications.
 - Exascale Computing Initiative (ECI) that will enable delivery of at least one exascale-capable system (calculations at the rate of a billion billion operations per second) in calendar year 2021—reasserting U.S. leadership in this critical area along with research to enable the use of exascale computing in SC research activities. ECI is a partnership between SC and the National Nuclear Security Administration (NNSA). In addition to providing needed capabilities to achieve NNSA's objectives, the ECP will support many of DOE's applied energy technology developments.
 - Quantum Information Science to understand how quantum systems behave and research to exploit recent advances in quantum computing to address scientific challenges that are beyond the capabilities of classical computers.
 - Microelectronics for research into next-generation microelectronics, as well as to inform the design and synthesis of systems with advanced optoelectronic and spin properties relevant to microelectronics.
 - Biosecurity for research into genome-modification techniques to identify and predict biosecurity implications for energy and the environment.

The FY 2020 Request also provides support for the continuation of direct support of the design, development, construction, and operation of unique, open-access scientific user facilities including five x-ray light sources, two neutron scattering sources, and five nanoscale science research centers. The Request also provides initial support for two new research infrastructure projects:

- Matter in Extreme Conditions Upgrade aimed at providing an experimental collaborative National User Facility for High-Energy-Density Science; and
- U.S. Stable Isotope Production and Research Center to consolidate stable isotope efforts throughout the Oak Ridge National Laboratory and enhance electromagnetic ion separation and gas centrifuge production capabilities for enriched stable isotopes which are used for hundreds of applications that benefit society every day.

Research and Development

- Energy Efficiency and Renewable Energy will focus resources on early stage R&D across a variety of technologies that support American energy independence and promote domestic job-growth in the near to mid-term.
- Electricity funding will support key efforts to improve the resilience and reliability of the nation's electricity system, and includes investments in our transmission system to support resource adequacy and generation diversity; moving forward with new architecture approaches for the transmission and distribution system to enhance security and resilience; and advancing energy storage.
- Office of Cybersecurity, Energy Security, and Emergency Response (CESER) includes funds for R&D to deliver game-changing tools and technologies that help utilities secure today's energy infrastructure from advanced cyber threats and design next-generation systems that are built from the start to automatically detect, reject, and withstand cyber incidents, regardless of the threat
- Nuclear Energy supports advanced reactor R&D, including through funding that puts DOE on a path to construct the Versatile Advanced Test Reactor, a facility that would enable development and testing of advanced fuels and materials for the next generation of commercial nuclear reactors. The Budget Request also supports R&D for enhanced accident tolerance on light water reactor fuel concepts; strategic investments in research capabilities to develop innovative and crosscutting nuclear energy technologies, including modeling and simulation; and investments into the reliability and availability of the Advanced Test Reactor.
- Fossil Energy Research and Development focuses on cutting edge, early stage R&D to advance transformative science and innovative technologies that enable the reliable, efficient, affordable, and environmentally sound use in fossil fuels.

Within the Nuclear Security dimension the Budget Request makes key R&D investments in science and technology innovation to support the stewardship of the nuclear weapons stockpile, to modernize the nuclear security enterprise; to protect the United States from nuclear threats; and to provide the Navy with nuclear reactors that meet ever more stringent and evolving requirements to power the fleet.

The Department's estimates of R&D activities include those administrative and support functions necessary to the success of the R&D programs consistent with government-wide and international reporting practices. These include program direction, safeguards and security, and infrastructure costs. This funding was not included in the R&D reporting in the FY 2016 and prior year budget justifications. The following table details funding of R&D in the budget by categories; basic, applied, development, equipment, and related construction; and program office.

Research and Development

	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Basic Research			
Science	4,978,915	4,471,870	-507,045
Electricity	14,702	13,528	-1,174
Cybersecurity, Energy Security, and Emergency Response	977	1,295	318
Fossil Energy R&D	32,934	26,405	-6,529
Defense Nuclear Nonproliferation	125,821	105,979	-19,842
Total, Basic Research	5,153,349	4,619,077	-534,272
Applied Research			
Science	0	0	0
Electricity	75,110	65,219	-9,891
Cybersecurity, Energy Security, and Emergency Response	35,865	18,564	-17,301
Energy Efficiency and Renewable Energy ¹	1,407,000	239,000	-1,168,000
Fossil Energy R&D	625,751	501,695	-124,056
Nuclear Energy	892,113	504,405	-387,708
Advanced Research Project Agency - Energy (ARPA-E)	183,000	-287,000	-470,000
Environmental Management	9,240	4,290	-4,950
Defense Nuclear Nonproliferation	171,205	109,784	-61,421
Weapons Activities	4,411,257	5,212,607	801,350
Total, Applied Research	7,810,541	6,368,564	-1,441,977
Development			
Electricity	45,933	79,080	33,147
Energy Efficiency and Renewable Energy	435,000	83,000	-352,000
Cybersecurity, Energy Security, and Emergency Response	11,722	15,542	3,820
Fossil Energy R&D	0	0	0
Nuclear Energy	401,519	207,369	-194,150
Advanced Research Project Agency - Energy (ARPA-E)	183,000	0	-183,000
Naval Reactors	1,225,928	1,186,739	-39,189
Environmental Management	18,760	8,710	-10,050
Defense Nuclear Nonproliferation	66,277	55,509	-10,768
Weapons Activities	207,636	268,538	60,902
Total, Development	2,595,775	1,904,487	-691,288
Subtotal, R&D			
Science	4,978,915	4,471,870	-507,045
Electricity	135,745	157,827	22,082
Cybersecurity, Energy Security, and Emergency Response	48,564	35,401	-13,163
Energy Efficiency and Renewable Energy	1,842,000	322,000	-1,520,000
Fossil Energy R&D	658,685	528,100	-130,585
Nuclear Energy	1,293,632	711,774	-581,858
Advanced Research Project Agency - Energy (ARPA-E)	366,000	-287,000	-653,000

¹ Data in the FY 2020 column is based on the net appropriation of \$343M as opposed to the programmatic level of \$696M achieved through the use of prior year unobligated balances.

Research and Development

	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Naval Reactors	1,225,928	1,186,739	-39,189
Environmental Management	28,000	13,000	-15,000
Defense Nuclear Nonproliferation	363,303	271,272	-92,031
Weapons Activities	4,618,893	5,481,145	862,252
Subtotal, R&D	15,559,665	12,892,128	-2,667,537
R&D Related Equipment			
Science	277,069	182,408	-94,661
Energy Efficiency and Renewable Energy ²	0	0	0
Fossil Energy R&D	22,500	23,000	500
Naval Reactors	17,500	25,900	8,400
Weapons Activities	276,222	285,000	8,778
Total, Equipment	593,291	516,308	-76,983
R&D Related Construction			
Science	1,261,065	821,194	-439,871
Energy Efficiency and Renewable Energy ³	0	0	0
Electricity	0	5,602	5,602
Naval Reactors	287,000	261,700	-25,300
Weapons Activities	85,308	106,241	20,933
Total, Construction	1,633,373	1,194,737	-438,636
Total Department of Energy R&D and R&D Facilities			
Science	6,517,049	5,475,472	-1,041,577
Electricity	135,745	163,429	27,684
Cybersecurity, Energy Security, and Emergency Response	48,564	35,401	-13,163
Energy Efficiency and Renewable Energy	1,842,000	322,000	-1,520,000
Fossil Energy R&D	681,185	551,100	-130,085
Nuclear Energy	1,293,632	711,774	-581,858
Advanced Research Project Agency - Energy (ARPA-E)	366,000	-287,000	-653,000
Naval Reactors	1,530,428	1,474,339	-56,089
Environmental Management	28,000	13,000	-15,000
Defense Nuclear Nonproliferation	363,303	271,272	-92,031
Weapons Activities	4,980,423	5,872,386	891,963
Total, Department of Energy R&D and R&D Facilities	17,786,329	14,603,173	-3,183,156

² Funding for major R&D equipment was inadvertently prorated to conduct of R&D. Amounts that should have been reported separately are: FY 2019 \$7.5M and FY 2020 \$7.7M. Future updates of Schedule C will be reported on line 1312.

³ Funding for R&D related construction was inadvertently prorated to conduct of R&D. Amounts that should have been reported separately are: FY 2019 \$9.3M, and FY 2020 \$14.3M. Future updates of Schedule C will be reported on line 1322.

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

The Department of Energy manages two separate Small Business Innovation Research (SBIR) & Small Business Technology Transfer (STTR) programs, one administered by the Office of Science and the other by the Advanced Research Projects Agency – Energy (ARPA-E). The Office of Science has managed the DOE SBIR and STTR programs for the Department since the SBIR program was created in 1982 and the STTR program was created in 1992. The ARPA-E SBIR/STTR programs were created in FY 2012 to manage ARPA-E’s SBIR & STTR allocations independently.

The SBIR/STTR Reauthorization Act of 2011 reauthorized the SBIR and STTR programs and provided for annual increases phased in over six years. The Act directs DOE to expend not less than the percentages of nonexempt extramural R&D as tabulated below. By statute, “amounts obligated for atomic energy defense programs solely for weapons activities or for naval reactor programs” are exempt [15 USC 638(e)(1)].

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017 – FY 2020
SBIR	2.5%	2.6%	2.7%	2.8%	2.9%	3.0%	3.2%
STTR	0.30%	0.35%	0.35%	0.40%	0.40%	0.45%	0.45%
Combined	2.80%	2.95%	3.05%	3.20%	3.30%	3.45%	3.65%

DOE SBIR/STTR Programs Office

The SBIR/STTR Programs Office works collaboratively with fourteen participating offices to administer the programs: seven R&D program offices within the Office of Science, Office of Cybersecurity, Energy Security and Energy Response, Office of Electricity, Energy Efficiency and Renewable Energy, Fossil Energy, Nuclear Energy and Environmental Management; and the Office of Defense Nuclear Nonproliferation within the National Nuclear Security Administration. Each office makes awards commensurate with its allocation, and collaborates with other offices as necessary.

The participating programs are responsible for topic selection, reviewer assignment, award selection, and project oversight. Each program office considers its high priority research needs and program mission, as well as the Department’s goals for the program in developing research topics. The specific research topics selected for the SBIR and STTR programs are developed by the Department’s technical program managers.

The SBIR/STTR Programs Office is responsible for issuing topics and solicitations, managing the peer review and award selection process, working with the Science Office of Acquisition and Assistance 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 regarding the two programs.

In our DOE implementation of SBIR/STTR in prior years, we have assessed each program office at the minimum required percentages for both SBIR and STTR to meet expenditure requirements. However, Congressional reprogramming restrictions have limited our ability to award funds to the most promising innovations. Going forward, DOE plans to vary the allocations such that each program office will continue to make same total SBIR and STTR contribution, but the amounts given to SBIR and STTR will be adjusted to provide executable amounts, while in total DOE will meet the expenditure requirements for both SBIR and STTR, and at the same time remain within the purpose of each control point.

ARPA-E SBIR/STTR Program

ARPA-E manages a separate SBIR/STTR program. It employs the same rigorous merit review, accelerated contracting, funding, and active project management as all other ARPA-E programs. It focuses on targeted, mission-relevant areas where the agency believes that small business provides the best opportunity for innovative technology development. Beginning in FY 2020 ARPA-E activities will be absorbed within the Applied Energy Programs.

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted
Advanced Research Projects Agency - Energy				
SBIR	8,941	19,198		-19,198
STTR	420	2,700		-2,700
Electricity				
SBIR	5,041	3,698	4,996	1,298
STTR	709	520	703	183
Cybersecurity, Energy Security, and Emergency Response				
SBIR		1,391	1,108	-283
STTR		196	156	-40
Energy Efficiency and Renewable Energy				
SBIR	51,600	57,206	9,995	-47,211
STTR	8,044	8,045	1,406	-6,639
Environmental Management				
SBIR	1,216	896	416	-480
STTR	172	127	59	-68
Fossil Energy Research and Development				
SBIR	14,876	12,997	8,916	-4,081
STTR	2,092	1,828	1,254	-574
Defense Nuclear Nonproliferation				
SBIR	8,545	9,118	8,680	-438
STTR	1,202	1,282	1,221	-61
Nuclear Energy				
SBIR	20,434	23,120	9,715	-13,405
STTR	2,873	3,251	1,366	-1,885
Science				
SBIR	143,935	148,264	132,747	-15,517
STTR	20,240	20,851	18,667	-2,184
Total, SBIR	254,588	275,888	176,573	-99,315
Total, STTR	35,752	38,800	24,832	-13,968

Safeguards and Security

Crosscut

Program Mission

The Safeguards and Security (S&S) program at headquarters and each DOE field site protects against theft, diversion, sabotage, espionage, unauthorized access, compromise, and other hostile acts which may cause damage to national security, program continuity, the health and safety of employees, the public or the environment. The 'crosscut' summarizes the S&S programs that are distributed through the budget volumes. Each program's S&S components are described in the budget justifications for:

- Science
- Weapons Activities
- Defense Environmental Cleanup
- Nuclear Energy
- Energy Efficiency and Renewable Energy
- Fossil Energy R&D
- Strategic Petroleum Reserve
- Legacy Management
- Enterprise Assessments
- Environment, Health, Safety and Security
- Energy Information Administration
- Specialized Security Activities
- Chief Financial Officer
- Chief Information Officer

Program Overview

The budget for the direct funded S&S programs is organized to ensure consistency in program and budget execution and ensure management, direction, tracking and monitoring of security costs throughout the Department. Each program budget provides visibility for S&S issues in order to help management ensure effective and efficient S&S program implementation. Figure 1 shows comparable overall funding for S&S in the FY 2018 Enacted, FY 2019 Enacted, and the FY 2020 Request. It does not include funding for Energy Sector cybersecurity.

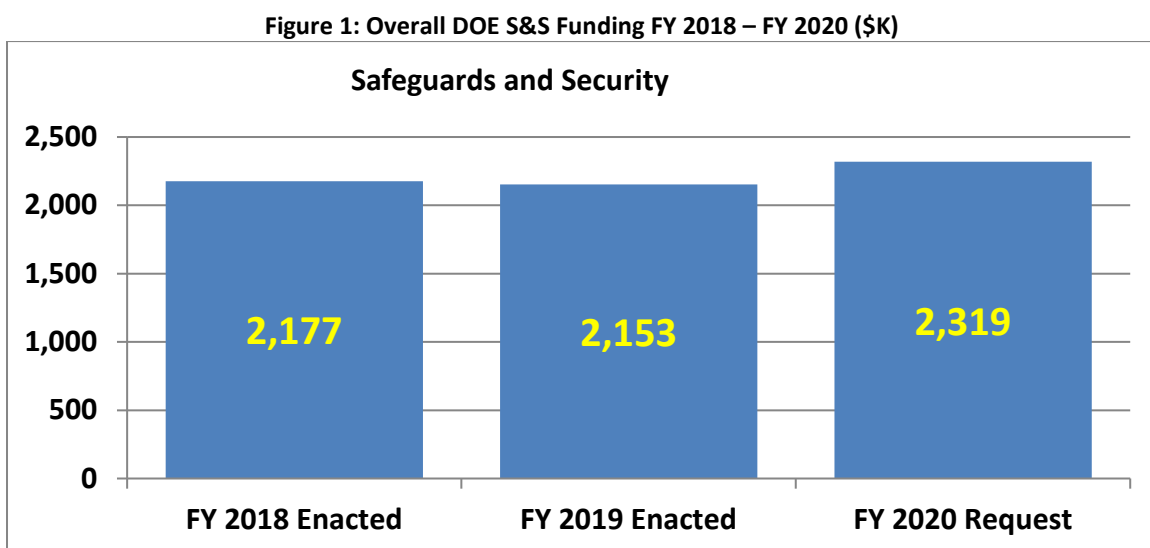


Table 1: Functional Components of S&S

The S&S crosscut budget is comprised of the functional components shown in the following table.

Protective Forces	Provides for the protection of special nuclear materials, information, employees, and government property from theft, diversion, sabotage, and malicious destruction.
Physical Security Systems	Addresses access control and interior/exterior intrusion detection systems.
Information Security	Ensures that individuals protect classified matter and sensitive unclassified matter, and establishes protection systems that require degrees of protection for each classification level.
Cybersecurity	Assures protection of computer resources and networks.
Personnel Security	Supports activities associated with the access authorization program.
Material Control and Accountability	Provides assurance that the nuclear materials used and/or stored at DOE facilities are properly controlled and accounted for at all times.
Program Management	Assures a framework for efficient and effective security operations.
Security Investigations	Provides for background investigations for access authorizations.
Transportation Security	Provides secure transportation of nuclear materials.
Security Infrastructure/Construction	Provides for update and repair of security-related infrastructure and construction for that purpose.
Specialized Security Activities	Provides highly specialized analyses in support of national security objectives.

Table 2 shows S&S funding by program cost elements; and Table 3 by functional cost elements. Subsequent sections break out each functional element of field security by program.

Highlights:

In FY 2020, the Department's overall S&S investment (field and HQ) is \$2.319 billion, an increase of +\$165.6 million, or +7.7%, above the FY 2019 Enacted level. By Functional Element, DOE is making strategic investments at field sites in Physical Security Systems (+\$83.3 million, or 54.2 %), Cybersecurity (+\$46.8 million, or 17.8%), and Transportation Security (+\$38.5 million, or 13.8%). Overall, there is an increase at field sites (+\$191.1 million, or +11.0%), offset by a decrease for Headquarters elements (-\$25.5 million, or -6.1%).

By program, there are significant increases in Weapons activities (+\$175.5 million, or 15.5%) and the Strategic Petroleum Reserve (+\$5.2 million, or 20.9%). Weapons activities requests increased investments in physical security systems, cybersecurity activities, and transportation security. In Strategic Petroleum Reserve there are increases requested for protective force and security infrastructure/construction (related to maintenance tasks). These increases are partially offset by decreases in Headquarters cybersecurity to focus resources on needed IT infrastructure modernization efforts as system enabling investments.

Table 2: S&S Funding by Program (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Safeguards and Security (S&S) by Program					
Field Security					
Science	103,000	106,110	110,623	4,513	4.3%
Weapons Activities	1,192,997	1,135,026	1,310,565	175,539	15.5%
Defense Environmental Cleanup	298,102	304,434	317,622	13,188	4.3%
Nuclear Energy	133,000	146,090	137,808	-8,282	-5.7%
Energy Efficiency and Renewable Energy	9,200	9,700	9,700	0	0.0%
Fossil Energy R&D	5,877	7,371	8,152	781	10.6%
Strategic Petroleum Reserve	23,245	24,890	30,091	5,201	20.9%
Legacy Management	2,184	2,335	2,478	143	6.1%
Subtotal, Field S&S	1,767,605	1,735,956	1,927,039	191,083	11.0%
Headquarters Safeguards and Security					
Enterprise Assessments	4,864	5,741	5,741	0	0.0%
Environment, Health, Safety and Security	68,404	70,521	75,820	5,299	7.5%
Fossil Energy R&D	843	884	439	-445	-50.3%
Energy Information Administration	885	885	902	17	1.9%
Specialized Security Activities	262,912	266,378	254,578	-11,800	-4.4%
Chief Financial Officer	963	1,245	1,300	55	4.4%
Chief Information Officer	70,874	71,501	52,855	-18,646	-26.1%
Subtotal, Headquarters S&S	409,745	417,155	391,635	-25,520	-6.1%
Total, Safeguards and Security	2,177,350	2,153,111	2,318,674	165,563	7.7%

Table 3: S&S Funding by Functional Cost Element (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
S&S by Functional Cost Element					
Field Security					
Protective Forces	712,574	713,878	726,035	12,157	1.7%
Physical Security Systems	159,932	153,701	236,961	83,260	54.2%
Information Security	47,794	57,874	60,006	2,132	3.7%
Cybersecurity	226,667	262,753	309,560	46,807	17.8%
Personnel Security	61,443	66,233	68,212	1,979	3.0%
Material Control and Accountability	40,261	44,128	46,714	2,586	5.9%
Program Management	125,372	132,917	137,772	4,855	3.7%
Security Investigations	2,836	4,289	4,098	-191	-4.5%
Transportation Security	291,363	278,834	317,357	38,523	13.8%
Security Infrastructure/Construction	99,363	21,349	20,324	-1,025	-4.8%
Subtotal, Field S&S	1,767,605	1,735,956	1,927,039	191,083	11.0%
Headquarters Safeguards and Security					
Enterprise Assessments	4,864	5,741	5,741	0	0.0%
Environment, Health, Safety and Security	68,404	70,521	75,820	5,299	7.5%
Fossil Energy R&D	843	884	439	-445	-50.3%
Energy Information Administration	885	885	902	17	1.9%
Specialized Security Activities	262,912	266,378	254,578	-11,800	-4.4%
Chief Financial Officer	963	1,245	1,300	55	4.4%
Chief Information Officer	70,874	71,501	52,855	-18,646	-26.1%
Subtotal, Headquarters	409,745	417,155	391,635	-25,520	-6.1%
Total Safeguards and Security	2,177,350	2,153,111	2,318,674	165,563	7.7%

Protective Forces

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Protective Forces*					
Science	43,545	43,545	43,545	0	0.0%
Weapons Activities	407,855	377,414	384,457	7,043	1.9%
Defense Environmental Cleanup	165,129	191,186	191,446	260	0.1%
Nuclear Energy	71,802	76,881	79,450	2,569	3.3%
Energy Efficiency and Renewable Energy	3,100	3,100	2,080	-1,020	-32.9%
Fossil Energy R&D	2,840	2,840	2,983	143	5.0%
Strategic Petroleum Reserve	17,755	18,354	21,355	3,001	16.4%
Legacy Management	548	558	719	161	28.9%
Total, Protective Forces	712,574	713,878	726,035	12,157	1.7%

*Does not include EHSS funding for HQ Protective Forces, FY 2018, \$31,391; FY 2019, \$32,333; and FY 2020, \$33,303

Mission

The Protective Forces element of field S&S provides funding to protect the Department's critical assets, which include nuclear weapons in DOE custody, nuclear weapons components, special nuclear materials, classified information and DOE facilities against a spectrum of threats, including terrorist activity, sabotage, espionage, theft, diversion, loss or unauthorized use.

Protective Force programs throughout the complex provide for personnel salaries, wages and benefits for personnel; management and supervision; and well-maintained and logically deployed equipment and facilities to ensure effective performance of assigned functions and tasks under normal and emergency conditions.

Protective Forces programs include the conduct of access control and security response operations; the physical protection of special nuclear material, classified matter and information, and government property; emergency response forces and tactical assistance during events as well as an on-scene security commander; random patrols; coordination with local law enforcement and protective force elements aimed at providing effective response to emergency situations; random prohibited article inspections; security alarm monitoring and dispatch services; the collection and destruction of classified matter; and testing of the protective force to respond to various event scenarios.

Protective Forces programs maintain a Special Response Team capability to provide resolution of incidents that require effective and timely response with force options that exceed the capability of front line protective force personnel. This includes, prevention, recapture and recovery operations involving the use of special weapons, systems and tactics to prevent access to special nuclear material or effect recovery from unauthorized control.

Highlights:

- Reduction in EERE protective forces funding due to redirection of funds necessary for cybersecurity.
- Increase in SPR Protective Force includes 15 Uniformed Personnel, allowing for 151 protective force officers to be on board at all times.
- Increase in LM reflects funding for protective forces at the Legacy Management Business Center.

Physical Security Systems

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Physical Security Systems					
Science	10,097	10,370	14,883	4,513	43.5%
Weapons Activities	101,293	107,932	182,911	74,979	69.5%
Defense Environmental Cleanup	35,859	23,217	26,841	3,624	15.6%
Nuclear Energy	10,575	10,075	10,075	0	0.0%
Energy Efficiency and Renewable Energy	750	750	750	0	0.0%
Fossil Energy R&D	151	151	159	8	5.3%
Strategic Petroleum Reserve	1,070	1,067	1,193	126	11.8%
Legacy Management	137	139	149	10	7.2%
Total, Physical Security Systems	159,932	153,701	236,961	83,260	54.2%

*Does not include EHSS funded HQ Physical Security Systems; FY 2018, \$5,588; FY 2019, \$7,493; FY 2020, \$10,793

Mission

The Physical Security Systems element of field S&S provides for the physical protection of special nuclear material and equipment, sensitive information, Departmental property and unclassified facilities. Included are buildings, fences, barriers, lighting, sensors, surveillance devices, entry control devices, access control systems, explosive detection systems, power systems and other real property and hardware designed for, or affecting security. This hardware and equipment are operated and used to support the protection of DOE property and other interests of national security.

Security Systems programs support DOE-wide efforts required to conduct performance assurance testing. These programs also ensure that security alarm systems are operational and functioning in accordance with applicable DOE requirements. Physical Security System programs are also responsible for two subprograms: (1) a barriers, secure storage, and lock program to restrict, limit, delay or deny entry into a designated area; and (2) an entry control and access program that provides positive identification of personnel requiring access to facilities and initial access to facilities in general, ensuring that persons entering or leaving facilities are authorized, and do not introduce prohibited articles into or remove Government property from Departmental facilities.

The budget estimates include all access control administrative activity involving production, accountability and destruction of access authorization badges and firearms credentials. They also include systems components and tamper-safe oversight by monitoring and responding to alarms, determining access and securing all alarmed structures on site. In addition, this element provides for handling all radio communications for the protection of the facilities.

Highlights:

- Funding increase for Science reflects beginning implementation of Design Basis Threat mandated physical security modifications at Science laboratories. Automated access controls are the program's first priority to protect the workforce and mitigate active shooter and workplace violence threats.
- Funding increase for Weapons Activities reflects: (1) regular escalation and support of high-priority security infrastructure upgrades; (2) preventive and corrective maintenance for aging systems and infrastructure at NNSA sites, pending completion of upgrades/replacement; and (3) realignment of request to accelerate Security Infrastructure Revitalization Program (SIRP) related projects.
- Funding increase for Defense Environmental Cleanup reflects additional maintenance costs associated with obsolete systems that need to be replaced.

Information Security

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Information Security					
Science	4,356	4,356	4,356	0	0.0%
Weapons Activities	32,929	43,011	44,004	993	2.3%
Defense Environmental Cleanup	5,004	5,004	6,102	1,098	21.9%
Nuclear Energy	4,674	4,674	4,674	0	0.0%
Energy Efficiency and Renewable Energy	500	500	500	0	0.0%
Fossil Energy R&D	91	91	98	7	7.7%
Strategic Petroleum Reserve	234	232	251	19	8.2%
Legacy Management	6	6	21	15	250.0%
Total, Information Security	47,794	57,874	60,006	2,132	3.7%

*Does not include EHSS funded HQ Information Security; FY 2018, \$9,757; FY 2019, \$11,179; FY 2020, \$11,679

Mission

The Information Security element of field S&S ensures that material and documents that may contain sensitive and classified information are accurately and consistently identified, properly reviewed for content, appropriately marked and protected from unauthorized disclosure, and ultimately destroyed in an approved manner.

Information Security programs provides for plans, policies, procedures and training to ensure that all employees are aware of the requirements for the identification, review, classification, declassification, marking, protection and proper disposal of sensitive information and classified material. In addition, operational security considerations are used to preclude inadvertent compromise of classified material.

Highlight:

- Increase for Defense Environmental Cleanup reflects hiring of additional information technology personnel to meet security operation requirements.

Cybersecurity

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Cybersecurity*					
Science	30,619	33,346	33,346	0	0.0%
Weapons Activities	126,528	159,175	207,890	48,715	30.6%
Defense Environmental Cleanup	43,356	40,943	37,395	-3,548	-8.7%
Nuclear Energy	16,856	16,856	16,856	0	0.0%
Energy Efficiency and Renewable Energy	3,680	4,180	5,200	1,020	24.4%
Fossil Energy R&D**	2,387	3,881	4,416	535	13.8%
Strategic Petroleum Reserve	2,111	3,175	3,235	60	1.9%
Legacy Management	1,130	1,197	1,222	25	2.1%
Total, Cybersecurity	226,667	262,753	309,560	46,807	17.8%

*Cybersecurity amounts shown do not include Working Capital Fund or Energy Information Technology System contributions

** Does not include Fossil Energy R&D-funded HQ cybersecurity (FY 2018, \$843K; FY 2019, \$884K; FY 2020, \$439K)

Mission

The Cybersecurity element of field S&S ensures that sensitive and classified information that is electronically processed, transmitted, or stored, is properly identified and protected. Cybersecurity programs also ensure that electronic systems are appropriately marked and protected. The programs plan, document, and test classified automated information systems (AIS), communications security (COMSEC), investigations and studies of compromising emanations (TEMPEST); and maintain an appropriate level of infrastructure reliability and integrity, as well as an unclassified AIS program. Included are appropriate plans, policies and procedures, assessments, tests, monitoring and self-assessments, certifications, and user and administrator training and awareness.

The amounts given here are program funds and do not include security elements that are within software applications developed for the Department's programmatic or administrative purposes; whether directly or indirectly funded. They do include IT Security and Compliance entries within the IT Investment portfolio. Highlights of field cybersecurity activities can be found within the IT and Cybersecurity Crosscut, and within the individual program budget requests.

Headquarters (HQ) Cybersecurity: The table below includes cybersecurity efforts in HQ offices. In EA and EHSS, HQ cybersecurity pertains to cybersecurity testing, oversight, and insider threat activities. In FE R&D, funding for HQ cybersecurity to protect the DOE enterprise. The CIO also funds headquarters cybersecurity through an enterprise-wide CyberOne effort managed within the CIO. The EIA provides cybersecurity mechanisms for the National Energy Information System. The CFO funds cybersecurity activities in the areas of security assessment and accreditation activities; and web application vulnerability scanning for CFO systems.

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Cybersecurity (including Headquarters Offices)					
Field Cybersecurity	226,667	262,753	309,560	46,807	17.8%
Environment, Health, Safety and Security	5,409	5,517	5,634	117	2.1%
Fossil Energy R&D	843	884	439	-445	-50.3%
Enterprise Assessments	4,864	5,741	5,741	0	0.0%
Chief Information Officer	70,874	71,501	52,855	-18,646	-26.1%
Energy Information Administration	885	885	902	17	1.9%
Chief Financial Officer	963	1,245	1,300	55	4.4%
Total, Cybersecurity	310,505	348,526	376,431	27,905	8.0%

Personnel Security

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Personnel Security					
Science	5,334	5,444	5,444	0	0.0%
Weapons Activities	34,219	40,376	40,959	583	1.4%
Defense Environmental Cleanup	12,137	11,712	13,055	1,343	11.5%
Nuclear Energy	8,703	7,714	7,714	0	0.0%
Energy Efficiency and Renewable Energy	200	200	200	0	0.0%
Fossil Energy R&D	154	154	225	71	46.1%
Strategic Petroleum Reserve	662	598	580	-18	-3.0%
Legacy Management	34	35	35	0	0.0%
Total, Personnel Security	61,443	66,233	68,212	1,979	3.0%

*Does not include EHSS funded HQ Personnel Security; FY 2018, \$5,692; FY 2019, \$6,187; FY 2020, \$6,692

Mission

The Personnel Security element of field S&S supports the access authorization program, and ensure security sensitivity through security briefings such as the initial refresher and termination briefings, re-orientations, computer-based training, special workshops and classes, publications, closed circuit television programs, signs, posters and special event days. Support for the access authorization program includes: (1) personnel security assurance program, adjudications, screening and analysis of personnel security cases for determining eligibility for access authorizations, administrative reviews, and handling of Freedom of Information and Privacy Act requests related to security access authorizations; (2) security awareness and education; and (3) activities associated with classified and unclassified visits and assignments by foreign nationals.

Highlight:

- Increase for Defense Environmental Cleanup reflects planned hiring of additional personnel to support the Savannah River Site badging office.

Material Control and Accountability

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Material Control and Accountability					
Science	2,431	2,431	2,431	0	0.0%
Weapons Activities	27,532	31,125	32,506	1,381	4.4%
Defense Environmental Cleanup	5,422	5,696	6,901	1,205	21.2%
Nuclear Energy	4,876	4,876	4,876	0	0.0%
Total, Material Control and Accountability	40,261	44,128	46,714	2,586	5.9%

Mission

The Material Control and Accountability (MC&A) element of field S&S provides assurance that nuclear materials are properly controlled and accounted for at all times. MC&A provides evidence that all nuclear materials are accounted for appropriately and that theft, diversion, or operational loss has not occurred. MC&A also supports weapons production, nuclear nonproliferation, nuclear materials operations, facility closure, and nuclear critical safety by determining and documenting the amounts of nuclear materials in weapons and packaged items. MC&A administration includes the following: (1) assessing the levels of protection, control and accounting required for the types and quantities of materials at each facility; (2) documenting facility plans for nuclear materials control and accounting; (3) assigning authorities and responsibilities for MC&A functions; (4) ensuring that facility MC&A personnel are trained and qualified to perform their responsibilities; (5) establishing programs to report occurrences such as nuclear material theft, the loss of control or inability to account for nuclear materials, or evidence of malevolent acts; (6) conducting performance testing of required program elements; and (7) establishing facility programs to conduct and document internal assessments of their operations and MC&A programs.

Highlight:

- Increase in Defense Environmental Cleanup associated with additional FTEs to support surplus plutonium disposition related to court-ordered mandates.

Program Management

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Program Management*					
Science	6,618	6,618	6,618	0	0.0%
Weapons Activities	86,223	94,654	97,946	3,292	3.5%
Defense Environmental Cleanup	21,560	20,552	21,917	1,365	6.6%
Nuclear Energy	8,175	8,175	8,175	0	0.0%
Energy Efficiency and Renewable Energy	800	800	800	0	0.0%
Fossil Energy R&D	254	254	271	17	6.7%
Strategic Petroleum Reserve	1,413	1,464	1,713	249	17.0%
Legacy Management	329	400	332	-68	-17.0%
Total, Program Management	125,372	132,917	137,772	4,855	3.7%

* In Weapons Activities, titled, *Security Program Operations and Planning*

Mission

The Program Management element of field S&S develops the framework for efficient and effective security operations. This includes the development and updating of S&S plans, conducting vulnerability assessments to determine if assets are at risk, modeling to ensure the plans and operations meet mission objectives, identifying assets that need protection, developing local threat assessments and participating in the S&S quality panel process and security education. In addition, these programs ensure that plans are developed and revised in accordance with DOE requirements, professional and technical training is administered, and Departmental S&S goals and objectives are implemented complex wide.

The programs develop S&S plans or other applicable security plans and implement S&S requirements, conduct surveys to determine whether S&S requirements have been implemented, respond to national and local threats and perform a vulnerability analysis that measures the risk of S&S assets. Program Management includes participation in the quality panel process, which raises issues from the field to the headquarters managers and ensures that the staff is properly educated in security matters.

Highlights:

- Increase for SPR reflects expanded support in the Planning area and associated FTE increase.
- Decrease for LM reflects a reduction in programmatic security travel and support.

Security Investigations

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Security Investigations					
Weapons Activities	1,650	2,700	2,730	30	1.1%
Defense Environmental Cleanup	1,016	1,419	1,198	-221	-15.6%
Energy Efficiency and Renewable Energy	170	170	170	0	0.0%
Total, Security Investigations	2,836	4,289	4,098	-191	-4.5%

* Nuclear Energy and Science Security Investigations costs for Federal Employees are subsumed within Personnel Security.

Mission

The Security Investigations element of field S&S funds background investigations associated with providing access authorizations (security clearances) to DOE Federal and contract personnel who, in the performance of their official duties, require access to classified information or certain quantities of special nuclear material. Background investigations are required by Section 145 of the Atomic Energy Act of 1954, as amended, and Executive Order 12968, Access to Classified Information. The investigations are performed and access authorizations granted based on 10 C.F.R. 710, Criteria and Procedures for Determining Eligibility for Access to Classified Matter or Special Nuclear Material. Funding provides for initial single scope background investigations, periodic reinvestigations, and initial and reinvestigation national agency checks.

Highlight:

- Reduction in Defense Environmental Cleanup reflects progress made in the reduction of the investigations backlog.

Transportation Security

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Transportation Security					
Weapons Activities	291,168	278,639	317,162	38,523	13.8%
Defense Environmental Cleanup	195	195	195	0	0.0%
Total, Transportation Security	291,363	278,834	317,357	38,523	13.8%

Mission

Transportation security provides for the secure transport of nuclear weapons, weapons components, and special nuclear materials to support Directed Stockpile Work and consolidation and disposition of nuclear material; to meet mission requirements. This functional component of S&S is funded primarily within NNSA's Secure Transportation Asset (STA) Program.

STA currently has the mission capacity to meet NNSA stockpile sustainment priorities, strategic material and component transfers, and other DOE workload. The Secure Transportation Steering Committee balances and prioritizes customer requests against STA capacity.

Highlight:

- Increase in Weapons Activities reflects support for STA's development of the Mobile Guardian Transporter (MGT), funding of deferred maintenance, and minor construction projects at existing facilities. STA program direction funds support efforts to increase the number of Federal Agents and escalation.

Security Infrastructure/Construction

Funding Schedule (\$K)

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	\$ Change FY20 vs. FY19	% Change FY20 vs. FY19
Security Infrastructure/Construction					
Weapons Activities	83,600	0	0	0	n/a
Defense Environmental Cleanup	8,424	4,510	12,572	8,062	178.8%
Nuclear Energy	7,339	16,839	5,988	-10,851	-64.4%
Strategic Petroleum Reserve	0	0	1,764	1,764	n/a
Total, Security Infrastructure/Construction	99,363	21,349	20,324	-1,025	-4.8%

Mission

Security Infrastructure provides critical security infrastructure investments and protection enhancements necessary to ensure adequate protection of DOE sites and personnel.

Highlights:

- In FY 2019 and FY 2020, no Line Item funding requested in Weapons Activities. In FY 2018, funds were provided for the Security Improvements Program (\$30,000,000) and for the West End Protected Area Reduction Project (WEPAR), Y-12 National Security Complex (\$53,600,000).
- Defense Environmental Cleanup funding supports Savannah River non-alarm/monitoring equipment, to include testing and training facilities, assessment and evaluation analytical systems, security structures (like ballistic resistant enclosures), and vehicles. Funding also supports Paducah On-site fire range completion.
- The Nuclear Energy decrease reflects completion of Phase IIA Implementation Plan activities and the limited start of Phase IIB Implementation plan activities consistent with the approved protection strategy. The decrease also reflects the one-time congressionally funded activity to construct a protective forces facility at the Advanced Test Reactor Complex.
- The increase to SPR Security Infrastructure / Construction represents two Major Maintenance tasks with security impacts (Replace ADAS Servers, Workstations, and Video Services at Bayou Choctaw and Bryan Mound).

**Information Technology (IT) and Cybersecurity
(\$K)**

FY 2019 Enacted (CY)	FY 2020 Request (BY)
\$ 1,149,035	\$1,246,732 ¹²

Overview

As directed in OMB Circular A-11 (2018) Section 51.3, the Department of Energy's (DOE) IT Budget by appropriation is presented below. In FY 2020 (BY), DOE plans to spend \$1.247 billion on information technology (IT) and cybersecurity, an increase of \$98 million from FY 2019 (CY). In alignment with the President's Management Agenda, the Department will continue to prioritize the modernization of the DOE IT infrastructure to deliver effective services supporting smart, efficient cybersecurity and enhance DOE's cybersecurity risk management structure to create transparency across the Enterprise in FY 2020 (BY). Network modernization initiatives will improve IT infrastructure, enhance cybersecurity, increase resiliency (including the expanded use of cloud services), scale capacity commensurate with demand to meet customers' needs, raise awareness, and promote best practices across the DOE Enterprise.

In addition, the Department's *Protecting the DOE Enterprise* portion of Cybersecurity Spending by Appropriation is shown below. In FY 2020 (BY), DOE will spend \$444 million on cybersecurity, a \$35 million increase from FY 2019 (CY). DOE's Cybersecurity Strategy aims to advance the Department's mission through the collaborative development and adoption of enterprise-wide cybersecurity policies matched by prioritized risk management-based implementation of cybersecurity defenses that enable outstanding customer operations while balancing risk, efficiency and the need for innovation, and that are subject to clear and measurable performance goals for securing information resources and systems Department-wide.

DOE IT Spending by Appropriation

As directed by OMB Circular A-11 (2018), Section 51.3, the following IT Table shows IT spending by DOE Appropriation. The IT Table by Appropriation is derived from spending amounts reported in DOE's BY 2020 IT Portfolio.

¹ Includes Direct IT Spending only (i.e., spending directed and funded by DOE programs). The total does not include IT spending directed by M&Os using overhead funding.

² Power Marketing Administration (PMA) IT spending is not included due to the minimal impact on the Department's budget. PMAs are primarily funded by collections.

Information Technology Funding Appropriation
In Thousands (\$K)

Appropriation	FY 2018 Actuals	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs. FY 2019 Enacted	% Change
National Nuclear Security Administration					
Defense Nuclear Nonproliferation	60,695	59,408	59,001	-407	-0.7%
Federal Salaries and Expenses	12,835	10,120	12,071	1,951	19.3%
Naval Reactors	108,129	108,673	109,282	609	0.6%
Weapons Activities	281,305	332,832	436,537	103,705	31.2%
Subtotal, NNSA	462,963	511,034	616,891	105,858	20.7%
Environmental and Other Defense Activities					
Defense Environmental Cleanup	81,138	90,121	91,376	1,256	1.4%
Non-defense Environmental Cleanup	2,791	2,791	2,839	48	1.7%
Other Defense Activities	43,716	38,961	38,877	-84	-0.2%
Nuclear Waste Disposal	2,730	2,478	2,690	212	8.6%
Subtotal, Environmental and Other Defense Activities	130,376	134,350	135,782	1,432	1.1%
Energy Programs					
Cybersecurity, Energy Security, & Emergency Response	-	1,650	1,657	7	0.4%
Electricity	4,628	3,043	3,178	135	4.4%
Energy Efficiency and Renewable Energy	34,205	32,876	31,455	-1,420	-4.3%
Fossil Energy Research and Development	58,690	48,138	50,308	2,170	4.5%
Northeast Home Heating Oil Reserve	377	310	323	13	4.2%
SPR Petroleum Account	498	223	140	-83	-37.2%
Strategic Petroleum Reserve	18,922	17,969	16,642	-1,327	-7.4%
Nuclear Energy	19,097	19,551	19,637	86	0.4%
Science	57,872	58,347	58,682	335	0.6%
Subtotal, Energy Programs	194,288	182,107	182,022	-84	0.0%
Departmental Administration					
Departmental Administration	164,206	150,805	139,494	-11,311	-7.5%
<i>Chief Financial Officer</i>	8,877	9,354	9,423	69	0.7%
<i>Chief Information Officer</i>	149,658	137,545	126,092	-11,453	-8.3%
<i>Other DA Programs</i>	5,670	3,906	3,979	73	1.9%
Inspector General	300	320	325	5	1.6%
Energy Information Administration	17,997	17,997	18,013	16	0.1%
Working Capital Fund ^{1,2}	74,039	81,857	89,514	7,656	9.4%
EITS	76,780	70,566	64,690	-5,876	-8.3%
Subtotal, Departmental Administration	333,322	321,545	312,036	-9,509	-3.0%
Total, Department of Energy	1,120,948	1,149,035	1,246,732	97,697	8.5%

¹ WCF is comprised of CIO, CF, MA, HC and Inter-Agency Investments.

² EITS and WCF customer costs are excluded from Programs' IT spend reporting to avoid double counting.

Highlights and Major Changes

Details on new investments in the BY 2020 IT Portfolio or substantial changes from the BY 2019 IT Portfolio are described below. IT spending amounts provided by DOE's BY 2020 IT Portfolio submission.

Office of the Chief Information Officer (OCIO)

The FY 2020 (BY) OCIO budget continues investment in core infrastructure, IT modernization, and cybersecurity functions. The decrease in OCIO's IT Security and Compliance Standard Investment reflects efficiencies and adjustments related to National Lab cybersecurity activities as well as the benefits achieved with increasing reliance on Continuous Diagnostics and Monitoring (CDM) activities. Additionally, the OCIO is placing an emphasis on the balancing federal oversight and support with the pace of IT infrastructure investments reflected in an investment of federal cyber and IT workforce staff.

National Nuclear Security Administration (NNSA)

In FY 2020 (BY), NNSA's request includes increases to fund continuation of its IT and cybersecurity modernization efforts. NNSA – Weapons Activities is reporting two new investments in FY 2020: NNSA Enterprise Secure Network (ESN) 2.0 which upgrades and will eventually replace the current ESN, and an NNSA OCIO IT Management Standard investment. Through ongoing efforts to better capture IT spend, NNSA has several current investments that are newly reported in FY 2020 (BY). These include: Savannah River Site (SRS) Tritium Programs, Safety Oversight, APEX FI Tool, Doxcelerate, the DNN CST Website, NNSA BUILDER, and NNSANET at SRS. NNSA's FY 2018 changes from the BY 2019 IT Portfolio submission to the BY 2020 (BY) IT Portfolio submission are due to reporting improvements, as well as reallocation of Doxcelerate from Weapons Activities to Federal Salaries and Expenses.

NNSA will increase cybersecurity spending in FY 2020 (BY) to continue modernization improvements started in FY 2019 (BY) at the Information Assurance Response Center (IARC), as well as efforts to improve cybersecurity operations at NNSA's Management and Operations (M&O) contractor sites. Specifically, capability and capacity gaps at IARC and the M&O sites will be addressed to improve continuous monitoring. The cybersecurity portions of the modernized network solution to address current supply chain and software assurance issues will also be implemented in FY 2020 (BY). Additionally, NNSA will implement Technical Surveillance Counter Measures.

Office of Electricity (OE) and Office of Cybersecurity, Energy Security and Emergency Response (CESER)

In FY 2019 (CY), the Office of Electricity Delivery and Energy Reliability was split into two programs: the Office of Electricity (OE) and Cybersecurity, Energy Security, and Emergency Response (CESER). As a result, two existing Office of Electricity Delivery and Energy Reliability investments, ISERNet and EAGLE-I, have been transitioned to CESER in the BY 2020 IT Portfolio. These investments were funded by OE in FY 2018 (PY) and are funded by CESER in FY 2019 (CY) and FY 2020 (BY). The funding for these investments became part of CESER's FY 2019 (CY) Enacted Budget. The IT investments were not reported under CESER in the BY 2019 IT Portfolio because, at the time of the submission, CESER did not exist as an Office. The eCPIC data for FY 2019 (CY) institutes CESER as the funding source for these IT investments. Both OE's and CESER's portfolios have been updated to reflect these changes in the BY 2020 IT Portfolio. Also, in FY 2019 (CY) and FY 2020 (BY) CESER will invest in cybersecurity at Oak Ridge National Lab (ORNL) and National Energy Technology Lab (NETL) to support the security and compliance requirements of EAGLE-I and ISERNet environments.

Office of Energy Efficiency and Renewable Energy (EERE)

In FY 2020 (BY), EERE is increasing cybersecurity spending for the National Renewable Energy Laboratory (NREL) to reduce vulnerabilities and lessen the threat of successful cyberattacks. Specifically, the funding increase in EERE's IT Security and Compliance Standard Investment provides additional staff resources to support the management of security plans and controls, system security testing and analysis, and incident management and response. The requested increase also provides funding for software licenses for mature vulnerability scanning and data loss prevention software.

Office of Fossil Energy and Research Development (FERD)

FERD will increase cybersecurity spending in FY 2020 (BY) within its IT Security and Compliance Standard investment. In FY 2020, FERD will expand Cybersecurity Authorization and Assessment (A&A), continuous monitoring, and mobile device forensics. The increase also provides for the implementation of the Governance Compliance and Risk (GRC) platform and anti-phishing software, as well as a Nessus Security Center Continuous View (SCCV) upgrade. The decrease in IT spending within the Strategic Petroleum Reserve (SPRO) Petroleum Account is due to upgrades to the SPRO Crude Oil Valuation and Tracking system software being completed and a return to a normal operations and maintenance state in FY 2020 (BY). The Strategic Petroleum Reserve account expects to decrease spending in hardware and software operations and maintenance in FY 2020 (BY).

Working Capital Fund (WCF)

In FY 2020 (BY), IT spending in the WCF will increase due to data center migration of DOE's Corporate Business Systems. In a multi-phase effort, the existing DOE Germantown and Albuquerque Data Centers will be retired and the systems currently residing there will be migrated to a cloud service provider.

Cybersecurity – Protecting the DOE Enterprise

The table below shows DOE's IT Spending on Cybersecurity. In an effort to improve consistency and quality in IT budget reporting, the FY 2020 (BY) Protecting the DOE Enterprise Cybersecurity table is derived from the IT Security and Compliance Standard Investments within DOE's BY 2020 IT Portfolio, as well as additional cybersecurity investments. As directed in the BY 2020 IT – Budget Capital Planning Guidance, agencies are now required to report on their Standard Investments for IT Security and Compliance at the level that they are managed and executed. In support of Federal Information Security Modernization Act (FISMA) and the Federal IT Acquisition Reform Act (FITARA), every organization managing a security program must now provide visibility of costs and outcomes of its cybersecurity activities.

Cybersecurity by Appropriation ^{1,2}
Protecting the DOE Enterprise
In Thousands (\$K)

Appropriation	FY 2018 Enacted (PY)	FY 2019 Enacted (CY)	FY 2020 Request (BY)	FY 2020 Request (BY) vs. FY 2019 Enacted (CY)	% Change
NNSA					
Weapons Activities	142,990	181,225	231,520	+50,295	+27.8%
Federal Salaries and Expenses ³	1,656	1,656	2,046	+390	+23.6%
Subtotal, NNSA	144,646	182,881	233,566	+50,685	+27.7%
Environmental & Other Defense Activities					
Defense Environmental Cleanup	43,013	49,432	49,972	+540	+1.1%
Other Defense Activities	10,725	11,555	11,597	+42	+0.4%
<i>Enterprise Assessments</i>	5,044	5,741	5,741	0	+0.0%
<i>Environmental Health, Safety and Security</i>	4,346	4,617	4,634	+17	+0.4%
<i>Legacy Management</i>	1,335	1,197	1,222	+25	+2.1%
Subtotal, Environmental & Other Defense Activities	53,738	60,987	61,569	+582	+1.0%
Energy Programs					
Cybersecurity, Energy Security, & Emergency Response	-	290	296	+6	+2.1%
Energy Efficiency and Renewable Energy	5,451	6,178	7,116	+938	+15.2%
Fossil Energy Research and Development	3,230	4,767	5,326	+559	+11.7%
Strategic Petroleum Reserve	2,111	3,173	3,245	+72	+2.3%
Nuclear Energy	17,651	17,841	17,849	+9	+0.1%
Science	34,535	34,964	34,996	+32	+0.1%
Subtotal, Energy Programs	62,979	67,212	68,829	+1,616	+2.4%
Departmental Administration					
Departmental Administration	92,915	97,487	79,460	-18,026	-18.5%
<i>Chief Financial Officer</i>	1,165	1,245	1,300	+55	+4.4%
<i>Chief Information Officer⁴</i>	91,750	96,242	78,160	-18,081	-18.8%
Energy Information Agency	885	885	901	+16	+1.8%
Subtotal, Departmental Administration	93,800	98,372	80,361	-18,011	-18.3%
Total, Protecting the DOE Enterprise Cybersecurity	355,163	409,452	444,325	34,873	+8.5%

¹ Cybersecurity spending is based on IT Security and Compliance Standard Investments, as well as other Cybersecurity investments reported in DOE's BY 2020 IT Portfolio.

² Includes only Directly-funded Cybersecurity spending. Indirectly-funded M&O directed Cybersecurity spending is excluded.

³ NNSA Federal Salaries and Benefits funds internal labor attributed to cybersecurity.

⁴ Chief Information Officer Includes \$3M in Working Capital Fund dollars for an annual payment to OPM for Credit Monitoring.

Infrastructure

Crosscut

Infrastructure funding is managed within a number of programs and includes funding for capital equipment, maintenance and repair, minor construction, line item construction, and excess facilities. This funding includes both direct funding and indirect funding – funding through laboratory overhead. The ‘crosscut’ summarizes the infrastructure funding that is distributed through the budget volumes. Descriptions of each program’s Infrastructure components can be found in the budget justifications for:

- Weapons Activities
- Defense Nuclear Nonproliferation
- Naval Reactors
- Environmental Management
- Science
- Nuclear Energy
- Energy Efficiency and Renewable Energy
- Fossil Energy R&D
- Strategic Petroleum Reserve
- Electricity
- Enterprise Assessments

Table 1 provides a department-wide summary of infrastructure funding by Program, while Table 2 provides the breakout by category of expenditure.

Table 1. Overall DOE Infrastructure Funding by Program (FY 2018 – FY 2020, \$K)

Program ^{a,c,d}	FY 2018 Enacted ^b	FY 2019 Enacted ^b	FY 2020 Request ^b	FY 2020 Request vs FY 2019 Enacted	% Change
National Nuclear Security Administration ^{e,f}	3,259,686	3,561,977	3,956,176	+394,199	+11.1%
Environmental Management	1,880,120	2,050,155	2,036,791	-13,364	-0.7%
Science	1,648,002	1,767,679	1,203,093	-564,586	-31.9%
EERE	27,807	28,040	33,283	+5,243	+18.7%
Nuclear Energy	136,985	108,700	53,432	-55,268	-50.8%
Fossil Energy	31,710	32,046	32,314	+268	+0.8%
Strategic Petroleum Reserve	401,533	347,481	484,172	+136,691	+39.3%
Other	1,200	2,670	6,670	+4,000	+149.8%
Total, Infrastructure	7,387,043	7,898,748	7,805,931	-92,817	-1.2%

Notes:

a - Does not include annual lease costs.

b - Maintenance and Repair and Minor Construction are actual dollars for FY 2018 and planned dollars for FY 2019 and FY 2020.

c - Includes both direct-funded dollars and indirect-funded dollars.

d - Reflects Total Project Costs (TPC) for each Line Item Construction Project.

e – National Nuclear Security Administration funding does not include all indirect-funded minor construction less than \$5M.

f - Includes Weapons Activities Infrastructure & Operations Recapitalization disposition planning and project funding.

Table 2. Overall DOE Infrastructure Funding by Category (FY 2018 – FY 2020, \$K)

Infrastructure Category ^{a,b}	FY 2018 Enacted ^b	FY 2019 Enacted ^b	FY 2020 Request ^b	FY 2020 Request vs FY 2019 Enacted	% Change
Capital Equipment					
National Nuclear Security Administration	471,774	523,821	633,711	+109,890	+21.0%
Environmental Management	0	0	0	+0	N/A
Science	177,779	283,569	178,908	-104,661	-36.9%
EERE	5,100	7,468	7,700	+232	+3.1%
Nuclear Energy	14,182	750	0	-750	-100.0%
Fossil Energy	0	0	0	+0	N/A
Strategic Petroleum Reserve	6,447	8,594	5,766	-2,828	-32.9%
Other	0	0	0	+0	N/A
Total, Capital Equipment	675,282	824,202	826,085	+1,883	+0.2%
Maintenance & Repair^c					
National Nuclear Security Administration	860,052	844,234	805,687	-38,547	-4.6%
Environmental Management	612,478	637,678	636,291	-1,387	-0.2%
Science	297,068	325,984	289,431	-36,553	-11.2%
EERE	14,907	11,272	11,283	+11	+0.1%
Nuclear Energy	107,642	50,548	43,202	-7,346	-14.5%
Fossil Energy	15,667	14,794	15,238	+444	+3.0%
Strategic Petroleum Reserve	47,257	38,887	28,406	-10,481	-27.0%
Other	1,200	1,670	1,670	+0	0%
Total, Maintenance & Repair	1,956,271	1,925,067	1,831,208	-93,859	-4.9%
Minor Construction^c					
National Nuclear Security Administration ^e	306,025	355,174	474,107	+118,933	+33.5%
Environmental Management	46,433	112,430	77,046	-35,384	-31.5%
Science	256,995	157,359	142,689	-14,670	-9.3%
EERE	7,800	9,300	14,300	+5,000	+53.8%
Nuclear Energy	6,585	26,243	4,488	-21,755	-82.9%
Fossil Energy	15,782	17,000	17,000	+0	0%
Strategic Petroleum Reserve	0	0	0	+0	N/A
Other	0	0	0	+0	N/A
Total, Minor Construction	639,620	677,506	729,630	+52,124	+7.7%
Line Item Construction^d					
National Nuclear Security Administration	1,448,302	1,614,208	1,782,047	+167,839	+10.4%
Environmental Management	1,209,464	1,213,647	1,090,454	-123,193	-10.2%
Science	908,270	991,765	589,400	-402,365	-40.6%
EERE	0	0	0	+0	N/A
Nuclear Energy	6,000	30,000	5,242	-24,758	-82.5%
Fossil Energy	0	0	0	+0	N/A
Strategic Petroleum Reserve	347,829	300,000	450,000	+150,000	+50.0%
Other	0	1,000	5,000	+4,000	+400.0%
Total, Line Item Construction	3,919,865	4,150,620	3,922,143	-228,477	-5.5%

Table 2. Overall DOE Infrastructure Funding by Category (FY 2018 – FY 2020, \$K) (continued)

Infrastructure Category ^{a,b}	FY 2018 Enacted ^b	FY 2019 Enacted ^b	FY 2020 Request ^b	FY 2020 Request vs FY 2019 Enacted	% Change
Excess Facilities^c					
National Nuclear Security Administration ^f	173,533	224,540	260,624	+36,084	+16.1%
Environmental Management	11,745	86,400	233,000	+146,600	+169.7%
Science	7,890	9,002	2,665	-6,337	-70.4%
EERE	0	0	0	+0	N/A
Nuclear Energy	2,576	1,159	500	-659	-56.9%
Fossil Energy	261	252	76	-176	-69.8%
Strategic Petroleum Reserve	0	0	0	+0	N/A
Other	0	0	0	+0	N/A
Total, Excess Facilities	196,005	321,353	496,865	+175,512	+54.6%
Total, Infrastructure	7,387,043	7,898,748	7,805,931	-92,817	-1.2%

Notes:

a - Does not include annual lease costs.

b - Maintenance and Repair and Minor Construction are actual dollars for FY 2018 and planned dollars for FY 2019 and FY 2020.

c - Includes both direct-funded dollars and indirect-funded dollars.

d - Reflects Total Project Costs (TPC) for each Line Item Construction Project.

e - National Nuclear Security Administration funding does not include all indirect-funded minor construction less than \$5M.

f - Includes Weapons Activities Infrastructure & Operations Recapitalization disposition planning and project funding.

Capital Equipment

Capital equipment funding includes both the cost of equipment acquired by purchase and fabricated by a site/facility management contractor that exceed the capitalization threshold of \$500,000. Included in the capital equipment funding are major items of equipment (MIEs). MIEs are listed individually in each program's budget justification.

Minor Construction

Minor Construction funding includes all minor construction projects. A Minor Construction Project is any construction project not specifically authorized by law for which the approved total estimated cost does not exceed the minor construction threshold [50 US Code 2743 (d)].^a Minor Construction Projects including Accelerator Improvement Projects (AIPs), Direct-Funded Projects like General Plant Projects (GPPs) and Indirect-Funded Projects (such as Institutional GPPs (IGPPs)) that exceed \$5M are listed individually in each program's budget justification. Individual projects listed in the program budget justification are considered to have met the authorization requirement of Title 50 USC 2743 and the notification requirement of Pub. L. 111–84, div. C, title XXXI, § 3118(c), Oct. 28, 2009, after the budget has been submitted to Congress.

Line Item Construction

Line Item Construction funding includes all construction projects specifically authorized by law for which the approved total estimated cost exceeds the minor construction threshold [50 US Code 2743 (d)]. The funding captured in this crosscut

^a Although 50 USC 2743 applies to use of funds pursuant to defense authorization, the Department policy is to apply the minor construction threshold for nondefense funding.

includes the annual total project costs – both total estimated costs and other project costs. The individual line item construction projects can be found in both the program’s construction projects summary and the individual project data sheets.

Maintenance and Repair

The Department’s Facilities Maintenance and Repair activities are tied to its programmatic missions, goals, and objectives. The Facilities Maintenance and Repair activities funded by this budget are intended to halt asset condition degradation and maintain operability. This excludes maintenance of excess facilities (including high-risk excess facilities) necessary to minimize the risk posed by those facilities prior to disposition.

Excess Facilities

Excess Facilities are facilities no longer required to support the Department’s needs, present or future missions or functions, or the discharge of its responsibilities. The funding to deactivate and dispose of excess infrastructure, including stabilization and risk reduction activities at high-risk excess facilities, resulting in surveillance and maintenance cost avoidance and reduced risk to workers, the public, the environment, and programs is included. Also included is the maintenance of excess facilities (including high-risk excess facilities) necessary to minimize the risk posed by those facilities prior to disposition.

**Energy Sector Cybersecurity
(\$K)**

FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
\$108,117	\$145,814	\$115,704

Overview

Cybersecurity has emerged as one of the Nation’s most important security challenges. The Department of Energy’s (DOE’s) FY 2020 budget request is aligned with the National Cyber Strategy and demonstrates the Administration’s commitment to strengthening the Nation’s cybersecurity capabilities and addressing the most pressing cyber threats. The FY 2020 budget supports DOE’s responsibilities as Sector-Specific Agency (SSA) for cybersecurity for the energy sector, as established under the Fixing America’s Surface Transportation (FAST) Act of 2015. As SSA, DOE works closely with the critical infrastructure lead, the Department of Homeland Security (DHS), and our other federal partners including law enforcement and the intelligence community, as well as stakeholders across industry, and state and local governments, to secure the Nation’s critical energy infrastructure from cyber threats and attacks.

As adversaries increase the frequency and sophistication of their malicious cyber activities, the Department has increased investment in cybersecurity to identify solutions to reduce risk for the energy sector, as well as the enterprise systems supporting the Department’s internal operations. The FY 2020 request builds upon the strategy outlined in the Multiyear Plan (MYP) for Energy Sector Cybersecurity and the establishment of the Office of Cybersecurity, Energy Security and Emergency Response (CESER).

In particular, in FY 2020, CESER requests \$94 million a \$4.5 million increase, or 5%, over the FY 2019 Enacted level for Cybersecurity for Energy Delivery Systems (CEDS). This reflects the critical need to accelerate and expand efforts to strengthen the energy infrastructure against cyber threats and mitigate vulnerabilities, focusing on enhancing the speed and effectiveness of cyber threat and vulnerability information sharing, establishing a national cyber supply chain assessment capability in partnership with industry, and accelerating game-changing Research and Development (R&D).

The FY 2020 CESER budget request supports:

- Advancing threat mitigation through Cyber Analytics Tools and Techniques (CATT, which addresses both Information Technology (IT) and Operational Technology (OT) infrastructure to provide the energy sector with situational awareness and actionable information to support discovery and mitigation of advance cyber threats to U.S. energy infrastructure, enriched with classified threat information, unique analytical tradecraft owned by the U.S. Government., and Cybersecurity for the Operational Technology Environment (CyOTE), aimed to design an industry-led approach for collecting and sharing OT data to advance threat mitigation to the energy sector;
- Identifying systemic and supply chain risks and vulnerabilities by correlating test data through a Cybersecurity Testing for Resilience and Control Systems (CyTRICS) initiative;
- Improving energy sector situational awareness by expanding the current configuration of EAGLE-I, the Federal Government’s situational awareness tool for national power outages;
- Maintaining and developing cyber operation tools, including tools that \maintain situational awareness and enable operations in degraded states;
- Establishing a national physical energy system and component testing capability designed to address threats to electromagnetic pulses (EMPs) and geomagnetic disturbances (GMDs);
- Building a coordinated emergency management response effort for cyber events in a whole of government approach;
- Conducting industry-focused cyber exercises and internally focused, no-notice cyber exercises to identify improvements to policies, procedures, and capabilities;
- Expanding the CyberForce competition to support development of the energy sector’s cyber defense workforce Nation-wide; and
- Establishing a national state, local, tribal, and territorial initiative to help reskill the energy and emergency management workforce.

In FY 2020, EERE requests \$15.6 million to include support for:

- Solar-specific cybersecurity vulnerability studies, including laboratory calls in the Solar Energy Technology Office (\$7 million);
- New approaches to cyber secure sensors, modeling, communications, and controls in manufacturing (\$5 million);
- Addressing priorities identified in the comprehensive threat assessment for vehicle-grid interface conducted in FY 2019 (\$1 million);
- Cyber threats analysis at laboratories and the new H2@scale projects in Fuel Cell Technology Office (\$1 million);
- Continued efforts to integrate cyber-attack threat detection capabilities and develop optimization-based control strategies in the Building Technologies Office (\$1 million);
- Data gathering efforts on the classification, security status, vulnerabilities, and consequences of Supervisory Control and Data Acquisition (SCADA) Software cybersecurity in hydroelectric power facilities in the Water Power Technologies Office (\$350K); and
- Maintenance of tools and features developed for the facilities cybersecurity framework, as well as continued support for industry outreach and increase situational awareness and collaboration of Energy Efficiency Sector Cybersecurity in the Federal Energy Management Program (\$200K).

In FY 2020, NE requests \$5 million for the Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development (CTD) subprogram to expand its nuclear reactor cybersecurity research to support development of intrusion-resistant systems and practices. Research will be conducted in four areas:

- Cyber risk management;
- Secure architectures;
- Modeling and simulation; and
- Supply chain cyber security assurance.

NEET-CTD will perform simulated cyber-attacks against existing and next generation control system architectures to verify attack difficulty and control efficacy, methods, and metrics.

In FY 2020, FE R&D (Headquarters) requests \$439K for advanced sensors that can be used to monitor and identify transients associated with a cyber-attack, providing increased reliability and grid stability.

In FY 2020, CIO requests \$665K for the DOE Spectrum Management Program to manage DOE radio frequency spectrum-dependent resources for NNSA, Power Marketing Administrations (PMAs), Office of Secure Transportation, and National Laboratory spectrum-dependent assets. As the 9th largest holder of radio frequencies with more than 7,300 individual radio assignments, the Program provides technical, logistical, and administrative support, as well as ongoing oversight and advocacy at an inter-agency level in the National Capital Region. There are 34 sites receiving services from the Program, including Headquarters, the National Labs, the PMAs, and NNSA sites. Critical DOE missions and essential functions utilizing Spectrum services include the National Power Grid, Interstate Electricity Transmission, Satellite Missions, Nuclear Emergency Search, Radiological Assistance, Secure Transportation and Safeguards, and Protective Force Communications.

Highlights and Major Changes

Energy Sector Cybersecurity

- Cybersecurity, Energy Security and Emergency Response (CESER) requests an increase of \$4.5 million from the FY 2019 Enacted level to accelerate and expand efforts to strengthen the Department's efforts to secure U.S. energy infrastructure against all hazards, reduce the risks of and impacts from cyber events and other disruptive events, and assist with restoration activities.
- Energy Efficiency and Renewable Energy reduction of -\$34.2 million reflects elimination of funding for the Manufacturing USA institute and renewed focus on addressing other strategic priorities in the energy R&D arena.

**FY 2020 Energy Sector Cybersecurity Crosscut
(\$K)**

	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request	FY 2020 Request vs FY 2019 Enacted (\$ Change)	FY 2020 Request vs FY 2019 Enacted (% Change)
Energy Sector Cybersecurity					
Cybersecurity, Energy Security, and Emergency Response ¹	75,829	89,500	94,000	+4,500	+5.0%
Energy Efficiency and Renewable Energy	27,145	49,810	15,600	-34,210	-68.7%
Nuclear Energy NEET-CTD	3,600	5,000	5,000	0	0%
Fossil Energy Research & Development	843	884	439	-445	-50.3%
Office of the Chief Information Officer	700	620	665	+45	+7.3%
Total, Energy Sector Cybersecurity	108,117	145,814	115,704	-30,110	-20.6%

¹ The FY 2019 appropriation split the Electricity Delivery and Energy Reliability appropriation into two appropriations: Electricity Delivery and Cybersecurity, Energy Security, and Emergency Response (CESER). To allow comparison of cybersecurity efforts, the table reports CESER cybersecurity efforts across all three fiscal years within CESER had the current structure been in place in FY 2018. ~~Numbers reflect Cybersecurity for Energy Delivery Systems (CEDS) line.~~

Pensions

Pensions

Contractor Pensions and Other Postretirement Benefits

This section of the budget provides projected costs of contractor defined benefit (DB) pension plan contributions and other postretirement benefit reimbursements. The DB pension plan contributions are provided in Section I below for FY 2018 through FY 2020 by plan. The section also shows the allocations of those contributions to the following Department of Energy (DOE) Departmental Elements:¹

- National Nuclear Security Administration (NNSA)
- Office of Environmental Management (EM)
- Office of Science (SC)
- Office of Energy Efficiency and Renewable Energy (EERE)
- Office of Nuclear Energy (NE)

Information regarding projected reimbursements for other postretirement benefits (primarily medical) is provided in Section II below.

Contractors that manage and operate DOE's laboratories, weapons plants, and execute environmental cleanup projects at various government-owned sites and facilities are contractually required by DOE to assume sponsorship of the existing contractor DB pension plans and other postretirement benefit plans for incumbent employees. DOE reimburses the costs of the contractors' contributions to DB pension plans and the benefits paid from other postretirement benefit plans. These costs are typically allocated as indirect costs, though DOE does directly pay the costs of some legacy plans.²

Due to the timing of the required annual valuation for the contractor DB pension plans, the actual amount of the contractors' annual contributions to these DB pension plans that DOE will reimburse each fiscal year will not generally be known until after budget development. Budgetary line items that include DOE reimbursement of contractor contributions to DB pension plans assume an indirect rate anticipated to be sufficient to meet reimbursement requirements. In the case of plans covering contractor employees whose costs are reimbursed by various programs, the allocation of contributions among NNSA, the Program Offices, and Reimbursable Work is done based on each site's best estimate of the allocation of work based on current and anticipated work for the various parties that the site serves.³

Section I - Contractor DB Pension Plan Contributions⁴

DOE reimburses contractors for pension contributions at levels that are at least equal to the minimum required by the Employee Retirement Income Security Act (ERISA). The minimum required contribution (MRC) is determined on a plan year basis. Only two of the contractor plans have a plan year that coincides with the federal fiscal year and, therefore, the majority of fiscal year pension allocations are spread across two plan years. At a minimum, plan sponsors of single or multiple employer plans⁵ in which the plan assets were less than liabilities in the prior year must make quarterly contributions during the plan year with the first contribution due 3½ months after the beginning of the plan year and any outstanding amount due 8½ months after the plan year ends.

¹ Tables include projected contributions from "Reimbursable Work" and "Other" entities (e.g., DOE departmental administration, classified programs, etc.). Reimbursable Work also includes the costs associated with the Naval Reactors contractor's plans covered by its contract with the Department of the Navy. Pension contribution reimbursements from the Office of Electricity (OE), Office of Fossil Energy (FE), and Office of Legacy Management (LM) are now included in the "Other" category.

² The NNSA legacy University of California (UC) plans and the East Tennessee Technology Park Pension Plan for Grandfathered Employees rely on direct costs.

³ These allocations were provided by the contractors to the DOE in August 2018. The allocation percentages for FY 2018 are based on work performed for the first nine months of the fiscal year and the final allocations may be different. The allocation percentages for FY 2019 and FY 2020 represent contractors' expectation of work for FY 2019 and FY 2020 as of August 2018.

⁴ DOE has reimbursed contributions for 32 funded DB pension plans and 13 non-qualified DB pension plans in FY 2018. Non-qualified plans have no assets and are funded on a pay-as-you-go basis.

⁵ A single employer plan is a plan sponsored by only one employer; a multiple employer plan is a plan sponsored by 2 or more unrelated employers and not maintained pursuant to a collective bargaining agreement; a multiemployer plan is a plan maintained pursuant to a collective bargaining agreement between an employee organization and more than one employer.

Contractors develop long-term projections of future asset investment returns that affect estimates of future MRCs for each plan. Asset returns that are higher or lower than the projected long-term investment returns affect future MRCs, though the provisions of ERISA ensure that these effects are somewhat smoothed by allowing recognition over a two- (single/multiple) or a five-year period (multiemployer/state). In calendar year 2018, equity and bond market returns were low or negative and did not meet most contractors' expected asset return for 2018. The actual investment returns in calendar year 2018 will predominantly affect MRCs beginning in Fiscal Year 2020 though there could be some impact in FY 2019 depending on the funded status of the plan. DOE is currently evaluating the impact of the actual calendar year 2018 investment returns on the individual DB plans as part of its annual pension plan review process. Plans with substantial equity and alternative investment strategies are at a greater risk of having actual required FY 2020 contributions that exceed the current estimated contributions shown in Table 3 of this section.

Reimbursement of contractor costs in excess of the MRC requires specific approval. Reimbursements requested in excess of the MRC are reviewed by the cognizant program office, the Office of the Chief Financial Officer, the Office of Management, and the Office of the General Counsel through an annual pension management plan process. Table 1 provides information related to plans where funding in excess of the MRC was requested during FY 2018, and it includes the MRC, the contribution approved, and the actual amount contributed during FY 2018. In FY 2018, NNSA, SC, EERE, EM, and NE granted requests by contractors for reimbursement of contributions in excess of the MRC for 17 plans. Contributions in excess of the MRC were approved primarily to minimize volatility for future payments and mitigate increases in future contribution requirements, including the anticipated FY 2023 increase resulting from expiration of the 2015 Bipartisan Budget Act (BBA) which extended funding relief provided by the Highway and Transportation Funding Act (HATFA).⁶ Based on the contractors' assumptions (originally provided in January 2018, with some contractors providing updates in August 2018), MRCs are expected to increase in FY 2023 and later years after expiration of HATFA's funding relief.

Table 1 - FY 2018 Contributions in Excess of the MRC (\$K)

Plan	FY 2018 Budget	FY 2018 Estimated Minimum Required Contribution	Preliminary Additional Amount Requested	Preliminary FY 2018 Amount Approved	Final FY 2018 Amount Approved
Consolidated Nuclear Security, LLC Retirement Plan for Bargaining Unit Members of the Pantex Guards Union	6,000	-	6,000	6,000	6,000
East Tennessee Technology Park Pension Plan for Grandfathered Employees	10,604	11,510	-	11,510	16,818
Idaho National Laboratory Employee Retirement Plan	50,000	-	50,000	50,000	65,000
LANS Defined Benefit Pension Plan	100,200	-	112,500	112,500	112,500
LLNS Defined Benefit Pension Plan	23,000	-	23,000	23,000	23,000
Mission Support and Test Services, LLC (MSTS) Employee Retirement Plan	17,400	11,070	6,330	17,400	17,400
National Renewable Energy Laboratory Retirement Plan	22,000	15,641	6,359	22,000	23,213
NNSS IGAN Pension Trust Fund	1,270	220	1,230	1,450	897
NNSS Staff Pension Plan	1,213	355	906	1,262	1,375
NTESS Retirement Income Plan	107,000	-	107,000	107,000	107,000
Pension Plan for Eligible Bettis Employees and Retirees	39,500	-	39,500	39,500	39,500
Pension Plan for Employees at ORNL	52,000	-	52,000	52,000	67,000
Pension Plan for KAPL Employees in Participating Bargaining Units	3,400	-	3,400	3,400	3,400

⁶ HATFA required the extended use of higher interest rates (not entirely based on the market) to discount future plan liabilities. Using a higher interest rate to discount plans' future liabilities reduces the liability and thus results in lower minimum required contributions.

Plan	FY 2018 Budget	FY 2018 Estimated Minimum Required Contribution	Preliminary Additional Amount Requested	Preliminary FY 2018 Amount Approved	Final FY 2018 Amount Approved
Pension Plan of the Pacific Northwest Laboratories, Battelle Memorial Institute	15,000	-	35,000	35,000	23,292
Retirement Plan for Bargaining Unit Employees of the Metal Trades Council of Consolidated Nuclear Security, LLC	16,000	7,500	9,700	17,200	17,200
Retirement Program for Employees of Consolidated Nuclear Security, LLC at the U. S. Department of Energy Facilities at Oak Ridge, Tennessee	47,000	30,700	23,100	53,800	53,799
Salaried Employee Pension Plan for KAPL Employees and Retirees	23,600	-	23,600	23,600	23,600
Total	535,187	76,996	499,626	576,622	600,995

URS CH2M Oak Ridge, LLC (UCOR) received permission from the Office of Environmental Management to contribute an additional \$5 million to the East Tennessee Technology Park Pension Plan for Grandfathered Employees in September 2018 in addition the final MRC of approximately \$11.8 million. Battelle Memorial Institute (BMI) received permission to contribute up to \$35 million to the Pension Plan of the Pacific Northwest Laboratories, but actually contributed \$23.3 million; separately, UT-Battelle received approval to contribute up to an additional \$15 million to the Pension Plan for Employees at the Oak Ridge National Laboratory (ORNL) in the event UT-Battelle was able to manage its operations at ORNL such that the contribution was feasible. Battelle Energy Alliance (BEA) received approval in September 2018 to contribute an additional \$15 million to the Idaho National Laboratory Employee Retirement Plan after determining that it had managed its operations such that the contribution was also feasible. While Alliance for Sustainable Energy Inc. (ASE) received approval to contribute an additional \$6.4 million to the National Renewable Energy Laboratory Retirement Plan, ASE revised its contribution plans and contributed an additional \$7.6 million after determining that it had managed its operations such that the contribution was feasible. SOC, LLC revised the allocation of the additional approved contributions between the NNSS IGAN and Staff plans but did not exceed the total amount approved.

The contractors are making concerted efforts to reduce the costs and volatility associated with these plans as the costs have steadily increased. During 2018, contractors made the following changes to their DB pension plans, in an effort to reduce the costs associated with them, simplify administration, or increase the efficiency of the delivery of benefits:

- The Kansas City Division Hourly Employees' Pension Plan (Hourly Plan) was amended in accordance with the latest collective bargaining agreement to close the plan to new entrants. Employees hired before November 20, 2017, will continue to accrue benefits in the Hourly Plan under the same formula that was in effect prior to November 20, 2017.
- Settlement of obligations for the Rocky Flats Retirement Plan and the Rocky Flats Retirement Plan for Hourly Protection Employees pension plan terminations were completed in December 2018.

In addition, one new pension plan, Fluor-BWXT Portsmouth LLC USW Career Pension Plan for Appendix A USW-Represented Employees (Portsmouth Plan), was established effective January 1, 2018, to cover a small collective bargaining group at Portsmouth. The Portsmouth Plan is a closed plan, and no new entrants will be permitted to accrue benefits under this plan. The only reimbursements for this plan during 2018 relate to expenses and benefit payments (\$16,000). In FY 2019, contributions for the last quarter of the 2018 plan year and the first three quarters of the 2019 plan year are due. The FY 2019 estimated total contribution for the new plan is \$3 million.

There were several changes in plan sponsorship that resulted in plan changes. The LANS Defined Benefit Pension Plan became a multiple employer plan effective April 1, 2018, when Newport News Nuclear BWXT-Los Alamos became a participating employer; subsequently the name of the plan was changed to the Triad Defined Benefit Plan effective November 1, 2018, because of the change in Management & Operating contractors at Los Alamos National Laboratory. Effective December 31, 2018, the plan sponsorship of the National Strategic Protective Services, LLC Pension Plan was

transferred to Golden SVCS, LLC with the accompanying name change to the Golden SVCS Pension Plan. Coincident to this, a portion of the plan was spun off to the Pension Plan for Employees at ORNL.

Projections of future DB pension plan contributions are highly sensitive to underlying data, methods, and especially assumptions. Changes in the population data that are different from the expected data impact the future costs of these plans; participants retiring earlier and/or living longer than expected may increase costs; compensation increases that are less than expected may decrease the costs. The most significant assumptions affecting the contribution amounts are those assumptions with respect to future market conditions. In particular, the difference between actual experience of the markets and the assumption of the expected return on investments earned by the plans each future year, as well as future corporate bond yields (because they drive the discount rate used to value plan liabilities), have the largest impact on the ultimate contributions that will be reimbursed by the DOE. For example, the actual contributions for fiscal year 2020 will not be known until January 2020 at the earliest because these contributions will be determined based on the asset value as of December 31, 2019, and the discount rate in effect at that time.

Therefore, it is important to emphasize that the actual amounts reimbursed for the applicable fiscal years shown will almost certainly vary from the projections provided in this section. The information provided for the funded plans (excluding the non-qualified plans) is based on plan contributions projected by the DOE's contractors in August 2018. The non-qualified plan amounts equal the expected benefit payments which were provided by the contractors for the prior year's financial statements. This information has been reviewed by NNSA, relevant DOE Program Offices, and by the Office of the Chief Financial Officer.

- Table 2 provides aggregate FY 2018 actual and FY 2019 and FY 2020 estimated pension plan contributions eligible for reimbursement for all plans. The expectation that a new mortality table reflecting updated experience will be required to be used to determine the MRC affected the FY 2019 contribution amounts. This contributed to the expected increase in contributions as well as the expectation of a lower required interest rate used to value the liabilities. While the expectation that the impact of BBA declines over time, increased MRCs for some contractors are offset by declining contributions for others as their plans become better funded. In particular, the contributions to the legacy University of California plans are expected to decrease approximately \$100 million between 2019 and 2021.
- Table 3 provides plan-by-plan FY 2018 actual contributions and FY 2019 and FY 2020 estimated pension contributions eligible for reimbursement by NNSA, the DOE, and reimbursable work customers.

Table 2: NNSA and DOE Program Office Actual Contributions for FY 2018 and Projected Contributions for FY 2019 and FY 2020 (\$K)
Based on August 2018⁷ data and allocated by Program Office

Program Office	FY 2018	FY 2019	FY 2020
NNSA	620,366	570,263	513,285
EM	263,796	271,366	294,716
SC	73,800	67,389	69,281
EERE	33,915	34,115	36,180
NE	24,378	16,869	16,905
Reimbursable Work	126,384	128,146	130,389
Other	20,513	24,007	25,767
Total	1,163,153	1,112,156	1,086,523

There may be small variances in totals due to rounding.

⁷ Final information for FY 2018 contributions was reported in October 2018 while projected contributions for FY 2019 and FY 2020 were reported in August 2018 for all departmental elements.

Table 3 provides the following information for each plan:

Plan name and Plan type: Single employer, multiemployer, multiple employer, state, or non-qualified.

Status: *Open* means that the plans are open to new employees who earn benefits under a traditional defined benefit formula. *Closed* means that the qualified plans are closed to new employees, but active employees who were employed prior to the plan being closed continue to earn benefits; this includes plans where new entrants only or new entrants and legacy employees receive benefits under reduced hybrid formulas which are much less volatile (indicated by the word hybrid after closed). For non-qualified plans, “closed” means that the universe of possible participants is limited to individuals who are currently accruing benefits in the closed qualified plan at the respective site and who may at some point qualify for the non-qualified plan under the terms of the non-qualified plan). *Partially Closed* means that the plan is closed to some subset of the employee population, but that other employees (*e.g.*, represented employees covered by collective bargaining agreements) are still becoming members of the plan at the time of hire. *Frozen* means that plan liabilities are frozen, *i.e.*, that there are no longer any employees accruing credit for current service under the plan.

Reimbursements & Allocations: Expected contributions are allocated by program office for fiscal year 2018-2020 with 2018 representing actual contributions and contributions for later years based on submissions as outlined in footnote 3.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)
Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
East Tennessee Technology Park Pension Plan for Grandfathered Employees		2018	16,818	-	16,818	-	-	-	-	-
	Partially Closed	2019	12,785	-	12,785	-	-	-	-	-
	Multiemployer	2020	13,600	-	13,600	-	-	-	-	-
University of California Retirement Plan - Lawrence Berkeley National Laboratory		2018	35,067	477	224	22,523	3,489	49	7,031	1,273
	Open	2019	34,950	475	224	22,448	3,478	49	7,007	1,269
	State	2020	37,125	505	238	23,845	3,694	52	7,443	1,348
Pension Plan for Eligible Bettis Employees and Retirees		2018	39,500	21,725	-	-	-	-	17,775	-
	Closed	2019	31,300	17,215	-	-	-	-	14,085	-
	Single	2020	30,700	16,885	-	-	-	-	13,815	-
Pension Plan of the Pacific Northwest Laboratories, Battelle Memorial Institute		2018	23,292	5,637	70	4,006	2,120	303	7,197	3,960
	Open	2019	35,000	8,470	105	6,020	3,185	455	10,815	5,950
	Single	2020	35,000	8,470	105	6,020	3,185	455	10,815	5,950
Retirement Program for Employees of Consolidated Nuclear Security, LLC at the U. S. Department of Energy Facilities at Oak Ridge, Tennessee		2018	53,799	51,647	-	-	-	-	2,152	-
	Closed	2019	52,100	50,016	-	-	-	-	2,084	-
	Single	2020	81,400	78,144	-	-	-	-	3,256	-
HPMC Occupational Health Services Retirement Plan		2018	536	-	536	-	-	-	-	-
	Closed	2019	487	-	487	-	-	-	-	-
	Single	2020	490	-	490	-	-	-	-	-
Hanford Multi-Employer Pension Plan		2018	102,253	-	102,253	-	-	-	-	-
	Closed	2019	76,511	-	76,511	-	-	-	-	-
	Multiemployer	2020	77,296	-	77,296	-	-	-	-	-
Idaho National Laboratory Employee Retirement Plan		2018	65,000	4,084	26,500	203	1,360	20,223	11,257	1,374
	Closed	2019	50,000	2,495	26,500	125	830	12,330	6,880	840

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)

Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
	Multiple	2020	50,000	2,495	26,500	125	830	12,330	6,880	840
Salaried Employee Pension Plan for KAPL Employees and Retirees		2018	23,600	12,980	-	-	-	-	10,620	-
	Closed	2019	30,100	16,555	-	-	-	-	13,545	-
	Single	2020	30,400	16,720	-	-	-	-	13,680	-
Pension Plan for KAPL Employees in Participating Bargaining Units		2018	3,400	1,870	-	-	-	-	1,530	-
	Closed	2019	3,900	2,145	-	-	-	-	1,755	-
	Single	2020	3,300	1,815	-	-	-	-	1,485	-
Kansas City Division Hourly Employees' Pension Plan		2018	-	-	-	-	-	-	-	-
	Closed	2019	-	-	-	-	-	-	-	-
	Single	2020	-	-	-	-	-	-	-	-
Honeywell Retirement Earnings Plan for Aerospace Employees at the Kansas City Division		2018	-	-	-	-	-	-	-	-
	Closed	2019	-	-	-	-	-	-	-	-
	Single	2020	-	-	-	-	-	-	-	-
LANS Defined Benefit Pension Plan		2018	112,500	90,225	4,275	3,263	563	563	12,038	1,575
	Closed	2019	134,400	110,208	1,882	3,898	672	806	14,918	2,016
	Single	2020	123,500	101,270	1,729	3,582	618	741	13,709	1,853
University of California Retirement Plan - Lawrence Livermore National Laboratory Retained Segment		2018	144,916	144,916	-	-	-	-	-	-
	Frozen	2019	97,892	97,892	-	-	-	-	-	-
	State	2020	48,554	48,554	-	-	-	-	-	-
LLNS Defined Benefit Pension Plan		2018	23,000	17,710	-	690	230	-	3,220	1,150
	Closed	2019	23,000	18,170	-	690	230	-	3,220	690
	Single	2020	35,000	27,650	-	1,050	350	-	4,900	1,050
Fluor-BWXT Portsmouth LLC USW Career Pension Plan for USW-Represented Employees		2018	16	-	16	-	-	-	-	-
	Closed	2019	2,959	-	2,959	-	-	-	-	-
	Single	2020	2,062	-	2,062	-	-	-	-	-
		2018	128,013	128,013	-	-	-	-	-	-

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)

Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
University of California Retirement Plan - Los Alamos National Laboratory Retained Segment	Frozen	2019	90,355	90,355	-	-	-	-	-	-
	State	2020	49,154	49,154	-	-	-	-	-	-
National Renewable Energy Laboratory Retirement Plan		2018	23,213	-	-	929	18,339	-	3,250	696
	Closed - Hybrid for all	2019	24,000	-	-	960	18,960	-	3,360	720
	Single	2020	26,000	-	-	1,040	20,540	-	3,640	780
Golden SVCS Pension Plan		2018	1,697	-	1,018	679	-	-	-	-
	Closed	2019	1,635	-	981	654	-	-	-	-
	Single	2020	2,250	-	1,350	900	-	-	-	-
Mission Support and Test Services, LLC (MSTS) Employee Retirement Plan		2018	17,400	13,381	1,235	-	-	-	2,384	400
	Closed - Hybrid for all	2019	21,160	16,272	1,502	-	-	-	2,899	487
	Single	2020	21,560	16,580	1,531	-	-	-	2,954	496
Consolidated Nuclear Security, LLC Retirement Plan for Bargaining Unit Members of the Pantex Guards Union		2018	6,000	6,000	-	-	-	-	-	-
	Closed	2019	2,200	2,200	-	-	-	-	-	-
	Single	2020	2,200	2,200	-	-	-	-	-	-
Retirement Plan for Bargaining Unit Employees of the Metal Trades Council of Consolidated Nuclear Security, LLC		2018	17,200	16,856	-	-	-	-	344	-
	Closed	2019	8,100	7,938	-	-	-	-	162	-
	Single	2020	8,300	8,134	-	-	-	-	166	-
Consolidated Nuclear Security Retirement Plan for Non-Bargaining Pantex Location Employees		2018	-	-	-	-	-	-	-	-
	Closed	2019	13,100	12,838	-	-	-	-	262	-
	Single	2020	13,500	13,230	-	-	-	-	270	-
NTESS Retirement Income Plan		2018	107,000	66,019	535	1,926	1,712	535	34,668	1,605
	Closed	2019	110,654	67,167	553	1,770	1,992	1,107	36,627	1,439
	Single	2020	109,194	65,189	546	1,856	2,184	1,201	36,798	1,420
		2018	124,695	27,433	91,028	-	-	-	-	6,235

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)

Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
Savannah River Nuclear Solutions LLC Multiple Employer Pension Plan	Closed	2019	176,793	38,895	129,059	-	-	-	-	8,840
	Multiple	2020	205,363	45,180	149,915	-	-	-	-	10,268
DUF6 Pension Plan for Grandfathered Employees		2018	1,538	-	1,538	-	-	-	-	-
	Closed	2019	677	-	677	-	-	-	-	-
	Single	2020	1,067	-	1,067	-	-	-	-	-
United Steel Workers Career Pension Plan for Appendix A - USW Represented Employees (Paducah)		2018	2,272	-	2,272	-	-	-	-	-
	Closed	2019	1,429	-	1,429	-	-	-	-	-
	Single	2020	1,547	-	1,547	-	-	-	-	-
Pension Plan for Employees at ORNL		2018	67,000	5,628	134	39,329	6,030	2,680	11,055	2,144
	Open	2019	52,000	4,368	104	30,524	4,680	2,080	8,580	1,664
	Single	2020	52,000	4,368	104	30,524	4,680	2,080	8,580	1,664
Waste Isolation Pilot Plant Pension Plan		2018	10,201	-	10,201	-	-	-	-	-
	Open	2019	10,948	-	10,948	-	-	-	-	-
	Single	2020	11,920	-	11,920	-	-	-	-	-
West Valley Pension Plan		2018	4,485	-	4,485	-	-	-	-	-
	Closed	2019	4,087	-	4,087	-	-	-	-	-
	Single	2020	4,165	-	4,165	-	-	-	-	-
NNS Staff Pension Plan		2018	1,375	1,375	-	-	-	-	-	-
	Closed	2019	1,222	1,222	-	-	-	-	-	-
	Single	2020	1,224	1,224	-	-	-	-	-	-
NNS IGAN Pension Trust Fund		2018	897	897	-	-	-	-	-	-
	Closed	2019	1,660	1,660	-	-	-	-	-	-
	Single	2020	1,690	1,690	-	-	-	-	-	-

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
Battelle Memorial Institute Excess Benefit and Supplemental Executive Pension Plans		2018	10	2	-	2	1	-	3	2
	Closed	2019	9	2	-	2	1	-	3	2
	Non-Qualified	2020	9	2	-	2	1	-	3	1
Executive and Supplemental Pension Plans for Designated Bettis Employees		2018	1,751	963	-	-	-	-	788	-
	Closed	2019	1,728	951	-	-	-	-	778	-
	Non-Qualified	2020	1,744	959	-	-	-	-	785	-
Excess and Supplemental Pension Plan for Designated KAPL Employees		2018	325	179	-	-	-	-	146	-
	Closed	2019	329	181	-	-	-	-	148	-
	Non-Qualified	2020	335	184	-	-	-	-	151	-
LANS 401(a)(17) Restoration Plan		2018	214	171	8	6	1	1	23	3
	Closed	2019	187	153	3	5	1	1	21	3
	Non-Qualified	2020	200	164	3	6	1	1	22	3
LANS Restoration Plan		2018	15	12	1	-	-	-	2	-
	Closed	2019	33	27	-	1	-	-	4	-
	Non-Qualified	2020	40	33	1	1	-	-	4	1
LLNS 401(a)(17) Restoration Plan		2018	347	268	-	10	3	-	49	17
	Closed	2019	569	450	-	17	6	-	80	17
	Non-Qualified	2020	721	569	-	22	7	-	101	22
LLNS Restoration Plan		2018	142	109	-	4	1	-	20	7
	Closed	2019	203	160	-	6	2	-	28	6
	Non-Qualified	2020	226	179	-	7	2	-	32	7
NTESS Nonqualified Pension Plan		2018	2,387	1,473	12	43	38	12	773	36
	Closed	2019	2,461	1,494	12	39	44	25	815	32

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Table 3: FY 2018 Actual and FY 2019 and FY 2020 Projected Contributions by Plan, NNSA, and Program Office (\$K)Based on August 2018⁸ data and allocated by Program Office

Plan Name	Plan status	Fiscal Year	Total	NNSA	EM	SC	EERE	NE	Reimbursable Work	Other
	Non-Qualified	2020	2,434	1,453	12	41	49	27	820	32
Savannah River Nuclear Solutions, LLC Nonqualified Pension Plan		2018	520	114	380	-	-	-	-	26
	Frozen	2019	418	92	305	-	-	-	-	21
	Non-Qualified	2020	393	86	287	-	-	-	-	20
Washington Government Services Executive Pension Plan (TRU Solutions Participants Only)		2018	71	-	71	-	-	-	-	-
	Frozen	2019	71	-	71	-	-	-	-	-
	Non-Qualified	2020	70	-	70	-	-	-	-	-
Washington Government Services Executive Pension Plan (West Valley Participants Only)		2018	184	-	184	-	-	-	-	-
	Frozen	2019	182	-	182	-	-	-	-	-
	Non-Qualified	2020	178	-	178	-	-	-	-	-
Consolidated Nuclear Security, LLC Equalization Retirement Income Plan and Supplemental Retirement Income Plan		2018	183	176	-	-	-	-	7	-
	Closed	2019	171	164	-	-	-	-	7	-
	Non-Qualified	2020	169	162	-	-	-	-	7	-
UT-Battelle Equalization Retirement Income Plan and Supplemental Retirement Income Plan		2018	318	27	1	187	29	13	52	10
	Open	2019	391	33	1	229	35	16	64	13
	Non-Qualified	2020	444	37	1	261	40	18	73	14
Total		2018	1,163,153	620,366	263,796	73,800	33,915	24,378	126,384	20,513
		2019	1,112,156	570,263	271,366	67,389	34,115	16,869	128,146	24,007
		2020	1,086,523	513,285	294,716	69,281	36,180	16,905	130,389	25,767

⁸ See footnote 7, supra.

May be small variances in totals due to rounding. For the Naval Reactors contractor's plans, Reimbursable Work includes the portion of contributions covered by the contract with the Department of the Navy.

Section II - Other Postretirement Benefit Plans

For the most part, contractors do not fund other postretirement benefit plans in advance, but instead pay the claims incurred by the retired members or the premiums required to cover the plan benefits. The other postretirement benefits covered by the contractors are primarily medical, including prescription drugs, but may also include dental, vision, and life insurance benefits that are provided upon retirement from the contractor. The costs associated with these plans are expected to grow as the retired population grows and as healthcare cost trends continue to increase.

Due to the fact that the claims are not paid until incurred and processed, the actual amounts of contractors' payment of claims that DOE will reimburse for FY 2019 and FY 2020 will not be known until after budget development. The contractor costs are included in indirect costs. The budget assumes an indirect rate sufficient to meet reimbursement requirements.⁹As mentioned in the pension section, the allocation of contributions among NNSA, the Program Offices, and Reimbursable Work, is done based on each site's best estimate of the allocation of work based on current and anticipated work for the various parties that the site serves.

The contractors are making concerted efforts to reduce the costs associated with these plans as the costs have steadily increased. In recent years, contractors have made changes to their other postretirement benefit plans in an effort to reduce the costs associated with them, simplify administration, or increase the efficiency of the delivery of benefits. These changes include the following:

- Three contractors increased participants' out-of-pocket (OOP) medical expense limits.
- Two contractors increased the deductibles for some of their offered medical plans.
- One contractor increased the pre-65 participants' share of health care premiums for the standard plan while reducing the share for the basic plan.
- One contractor combined two separate benefit plans into one harmonized benefit structure, leading to an estimated 2% annual savings in costs.
- One contractor changed its plan so that any excise tax required under the Affordable Care Act will increase retiree contributions.
- One contractor moved the last group of Medicare-eligible retirees participating in their retiree medical benefit plan to a Medicare Exchange that is supplemented with an employer-provided health reimbursement arrangement (HRA) stipend.

Projections of future postretirement benefits to be paid are highly sensitive to underlying data, methods, and assumptions, particularly assumptions related to future increases in the expected claims paid each year as well as the underlying assumptions regarding usage and coverage. Thus, the actual amounts reimbursed in a future fiscal year may be different. All of the information for FY 2019 and FY 2020 is based on expected reimbursements as reported by the DOE's respective contractors in August 2018; this information has been reviewed by the appropriate NNSA and DOE program office and the Office of the Chief Financial Officer. The information reported for FY 2018 is primarily based on information of final employer contributions as reported by the contractors for the FY 2018 agency financial statements. Table 1 provides these aggregate FY 2018-2020 projected other postretirement benefit reimbursements.

⁹ The LM plans rely on direct costs.

Table 1: FY 2018-2020 NNSA and DOE Program Office Projected Other Postretirement Benefits Payments (\$K)
Based on August 2018 data¹⁰ and allocated by Program Office

Program Office	FY 2018	FY 2019	FY 2020
NNSA	140,379	173,784	181,052
EM	73,738	80,330	82,288
SC	48,846	56,452	59,546
EERE	5,287	6,251	6,714
NE	5,338	10,067	10,984
Reimbursable Work	41,138	53,319	55,943
LM	43,696	51,816	51,158
Other	7,961	8,662	9,061
Total	366,383	440,682	456,746

There may be small variances in totals due to rounding.

¹⁰ Includes actual FY 2018 reimbursement payments as reported by the contractors for the FY 2018 agency financial statements. Reimbursable Work also includes the costs associated with the Naval Reactors contractor's plans covered by its contract with the Department of the Navy. Postretirement benefit reimbursements from the Office of Electricity (OE) and Office of Fossil Energy (FE) are now included in the "Other" category.

U.S. Department of Energy
Fiscal Year 2020 Budget Justification
GAO-IG Act Required Reporting

Summary

On January 3, 2019, the Good Accounting Obligation in Government Act (PL 115-414) was enacted which required, among other things, a listing of required reports in the annual budget justification submitted to Congress, as submitted with the budget of the President under section 1105 of title 31, United States Code. Section 2 of PL 115-414 required a report listing each public recommendation: 1) of the Government Accountability Office (GAO) that is designated by GAO as “open” or “closed, unimplemented” and 2) for corrective action from the Office of Inspector General (OIG). DOE is in this FY 2020 Budget Request listing the applicable GAO and OIG recommendations and will submit to Congress at a later date a separate report that provides details of the status of the recommendations listed here.

Table 1 lists the relevant GAO recommendations and Table 3 lists the relevant OIG recommendations.

Table 1

Field Name	Field Definition
DOE Lead Office	OE
Report Number	GAO-18-211
Report Title	Critical Infrastructure Protection: Additional Actions Are Essential to Assessing Cybersecurity Framework Adoption GAO report title
Final Report Date	2/15/2018

Field Name	Field Definition
DOE Lead Office	EM
Report Number	GAO-18-241
Report Title	HANFORD WASTE TREATMENT PLANT: DOE Needs to Take Further Actions to Address Weaknesses in Its Quality Assurance Program GAO report title
Final Report Date	4/24/2018

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	GAO-18-246R
Report Title	Management Report: Actions Needed to Improve National Nuclear Security Administration Contract Document Management
Final Report Date	8/1/2018
Field Name	Field Definition
DOE Lead Office	TT
Report Number	GAO-18-327
Report Title	Federal Research: Additional Actions Needed to Improve Licensing of Patented Laboratory Inventions
Final Report Date	6/19/2018

Field Name	Field Definition
DOE Lead Office	HC
Report Number	GAO-18-466
Report Title	Cybersecurity Workforce: Agencies Need to Improve Baseline Assessments and Procedures for Coding Positions
Final Report Date	6/14/2018

Field Name	Field Definition
DOE Lead Office	FE
Report Number	GAO-18-477
Report Title	Strategic Petroleum Reserve: DOE Needs to Strengthen Its Approach to Planning the Future of the Emergency Stockpile
Final Report Date	6/28/2018

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	GAO-18-617
Report Title	NUCLEAR NONPROLIFERATION: The Administration's 2018 Plan for Verification and Monitoring Met Most Reporting Requirements but Did Not Include Future Costs and Funding Needs
Final Report Date	9/14/2018

Field Name	Field Definition
DOE Lead Office	SC
Report Number	GAO-18-656
Report Title	SCIENCE AND TECHNOLOGY: Considerations for Maintaining US Competitiveness in Quantum Computing, Synthetic Biology, and Other Potentially Transformational Research Areas
Final Report Date	9/26/2018

Field Name	Field Definition
DOE Lead Office	IM
Report Number	GAO-18-93
Report Title	Federal Chief Information Officers: Critical Actions Needed to Address Shortcomings and Challenges in Implementing Responsibilities
Final Report Date	8/2/2018

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	GAO-18-99
Report Title	NUCLEAR WEAPONS: NNSA Needs to Determine Critical Skills and Competencies for Its Strategic Material Programs
Final Report Date	11/14/2017

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	GAO-19-101
Report Title	National Nuclear Security Administration's (NNSA) efforts to Integrate Financial Management of the Nuclear Security Enterprise
Final Report Date	1/31/2019

Field Name	Field Definition
DOE Lead Office	PM
Report Number	GAO-19-25
Report Title	Project Management: DOE and NNSA Should Improve Their Lessons Learned Process for Capital Asset Projects
Final Report Date	12/21/2018

Field Name	Field Definition
DOE Lead Office	EM
Report Number	GAO-19-28
Report Title	DEPARTMENT OF ENERGY: Program-wide Strategy and Better Reporting Needed to Address Growing Environmental Liability
Final Report Date	1/29/2019

Field Name	Field Definition
DOE Lead Office	IM
Report Number	GAO-19-49
Report Title	Information Technology: Departments Need to Improve Chief Information Officers' Review and Approval of IT Budgets
Final Report Date	11/13/2018

Table 3, IG Open Recommendations includes the information in the GAO-IG Act’s Sections 2.(b)(2), 3.(B), 3.(C), 3.(D), and 3.(E).

Field Name	Field Definition
DOE Lead Office	CF
Report Number	DOE-OIG-18-29
Report Title	Inquiry into an Alleged Anti-Deficiency Act Violations at the Department of Energy

Field Name	Field Definition
DOE Lead Office	CF
Report Number	DOE-OIG-19-03
Report Title	The Department of Energy’s Funds Distribution System 2.0

Field Name	Field Definition
DOE Lead Office	EE
Report Number	DOE-OIG-19-05
Report Title	Management of Selected Financial Assistance Agreements under the Wind Program

Field Name	Field Definition
DOE Lead Office	IM
Report Number	DOE-OIG-19-13
Report Title	Information Technology Management Letter on the Audit of the Department of Energy's Consolidated Financial Statements for Fiscal Year 2018

Field Name	Field Definition
DOE Lead Office	IM
Report Number	DOE-OIG-19-01
Report Title	The Department of Energy’s Unclassified Cybersecurity Program - 2018

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	DOE-OIG-19-11
Report Title	Implementation of Integrated Safety Management at Lawrence Livermore National Laboratory

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	DOE-OIG-18-40
Report Title	Management Letter on the Audit of the Department of Energy’s Consolidated Financial Statements for Fiscal Year 2017

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	DOE-OIG-18-42
Report Title	The Sandia National Laboratories Silicon Fabrication Revitalization Effort

Field Name	Field Definition
DOE Lead Office	NNSA
Report Number	DOE-OIG-18-41
Report Title	Supplier Quality Management at National Nuclear Security Administration Sites

Field Name	Field Definition
DOE Lead Office	OR
Report Number	DOE-OIG-18-43
Report Title	Allegation Regarding the Oak Ridge Office Personnel Security Process

Field Name	Field Definition
DOE Lead Office	PNSO
Report Number	DOE-OIG-19-02
Report Title	Audit Coverage of Cost Allowability for Battelle Memorial Institute Under its Contract to Manage the Pacific Northwest National Laboratory During Fiscal Years 2015 and 2016 Under Department of Energy Contract No. DE-AC05-76RL01830

Field Name	Field Definition
DOE Lead Office	RL
Report Number	DOE-OIG-18-44
Report Title	Management of the Workers' Compensation Program at the Hanford Site

Field Name	Field Definition
DOE Lead Office	SWPA
Report Number	DOE-OIG-18-18
Report Title	Management Letter on the Southwestern Federal Power System's Fiscal Year 2016 Financial Statement Audit

Field Name	Field Definition
DOE Lead Office	SWPA
Report Number	DOE-OIG-18-47
Report Title	Southwestern Power Administration's Asset Protection

Field Name	Field Definition
DOE Lead Office	TT
Report Number	DOE-OIG-18-22
Report Title	Follow up on Cooperative Research and Development Agreements at National Laboratories

Field Name	Field Definition
DOE Lead Office	WP
Report Number	DOE-OIG-18-28
Report Title	Management Letter on the Western Federal Power System's Fiscal Year 2017 Financial Statement Audit

GENERAL PROVISIONS—DEPARTMENT OF ENERGY
(INCLUDING TRANSFER OF FUNDS)

SEC. 301. (a) No appropriation, funds, or authority made available by this title for the Department of Energy shall be used to initiate or resume any program, project, or activity or to prepare or initiate Requests For Proposals or similar arrangements (including Requests for Quotations, Requests for Information, and Funding Opportunity Announcements) for a program, project, or activity if the program, project, or activity has not been funded by Congress.

(b)(1) Unless the Secretary of Energy notifies the Committees on Appropriations of both Houses of Congress at least 3 full business days in advance, none of the funds made available in this title may be used to—

- (A) make a grant allocation or discretionary grant award totaling \$1,000,000 or more;
- (B) make a discretionary contract award or Other Transaction Agreement totaling \$1,000,000 or more, including a contract covered by the Federal Acquisition Regulation;
- (C) issue a letter of intent to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B); or
- (D) announce publicly the intention to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B).

(2) The Secretary of Energy shall submit to the Committees on Appropriations of both Houses of Congress within 15 days of the conclusion of each quarter a report detailing each grant allocation or discretionary grant award totaling less than \$1,000,000 provided during the previous quarter.

(3) The notification required by paragraph (1) and the report required by paragraph (2) shall include the recipient of the award, the amount of the award, the fiscal year for which the funds for the award were appropriated, the account and program, project, or activity from which the funds are being drawn, the title of the award, and a brief description of the activity for which the award is made.

(c) The Department of Energy may not, with respect to any program, project, or activity that uses budget authority made available in this title under the heading "Department of Energy—Energy Programs", enter into a multiyear contract, award a multiyear grant, or enter into a multiyear cooperative agreement unless—

- (1) the contract, grant, or cooperative agreement is funded for the full period of performance as anticipated at the time of award; or
- (2) the contract, grant, or cooperative agreement includes a clause conditioning the Federal Government's obligation on the availability of future year budget authority and the Secretary notifies the Committees on Appropriations of both Houses of Congress at least 3 days in advance.

(d) Except as provided in subsections (e), (f), and (g), the amounts made available by this title shall be expended as authorized by law for the programs, projects, and activities specified in the "Conference" column in the "Department of Energy" table included under the heading "Title III—Department of Energy" in the joint explanatory statement accompanying this Act.

(e) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify, and obtain the prior approval of, the Committees on Appropriations of both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than \$5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(f) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

- (1) creates, initiates, or eliminates a program, project, or activity;
- (2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or
- (3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(g)(1) The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of both Houses of Congress of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

(h) The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 302. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 3094) during fiscal year [2019]2020 until the enactment of the Intelligence Authorization Act for fiscal year [2019]2020.

SEC. 303. None of the funds made available in this title shall be used for the construction of facilities classified as high-hazard nuclear facilities under 10 CFR Part 830 unless independent oversight is conducted by the Office of Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 304. None of the funds made available in this title may be used to approve critical decision–2 or critical decision–3 under Department of Energy Order 413.3B, or any successive departmental guidance, for construction projects where the total project cost exceeds \$100,000,000, until a separate independent cost estimate has been developed for the project for that critical decision.

[SEC. 305. The Secretary of Energy may not transfer more than \$274,833,000 from the amounts made available under this title to the working capital fund established under section 653 of the Department of Energy Organization Act (42 U.S.C. 7263): *Provided*, That the Secretary may transfer additional amounts to the working capital fund after the Secretary provides notification in advance of any such transfer to the Committees on Appropriations of both Houses of Congress: *Provided further*, That any such notification shall identify the sources of funds by program, project, or activity: *Provided further*, That the Secretary shall notify the Committees on Appropriations of both Houses of Congress before adding or removing any activities from the fund.]

SEC. [306]305. (a) None of the funds made available in this or any prior Act under the heading "Defense Nuclear Nonproliferation" may be made available to enter into new contracts with, or new agreements for Federal assistance to, the Russian Federation. (b) The Secretary of Energy may waive the prohibition in subsection (a) if the Secretary determines that such activity is in the national security interests of the United States. This waiver authority may not be delegated. (c) A waiver under subsection (b) shall not be effective until 15 days after the date on which the Secretary submits to the Committees on Appropriations of both Houses of Congress, in classified form if necessary, a report on the justification for the waiver.

[SEC. 307. (a) NEW REGIONAL RESERVES.—The Secretary of Energy may not establish any new regional petroleum product reserve unless funding for the proposed regional petroleum product reserve is explicitly requested in advance in an annual budget submission and approved by the Congress in an appropriations Act.

(b) The budget request or notification shall include—

- (1) the justification for the new reserve;
- (2) a cost estimate for the establishment, operation, and maintenance of the reserve, including funding sources;
- (3) a detailed plan for operation of the reserve, including the conditions upon which the products may be released;
- (4) the location of the reserve; and
- (5) the estimate of the total inventory of the reserve.]

SEC. [308]306. Notwithstanding section 161 of the Energy Policy and Conservation Act (42 U.S.C. 6241), upon a determination by the President in this fiscal year that a regional supply shortage of refined petroleum product of significant scope and duration exists, that a severe increase in the price of refined petroleum product will likely result from such shortage, and that a draw down and sale of refined petroleum product would assist directly and

significantly in reducing the adverse impact of such shortage, the Secretary of Energy may draw down and sell refined petroleum product from the Strategic Petroleum Reserve. Proceeds from a sale under this section shall be deposited into the SPR Petroleum Account established in section 167 of the Energy Policy and Conservation Act (42 U.S.C. 6247), and such amounts shall be available for obligation, without fiscal year limitation, consistent with that section.

SEC. 307. Section 310 of the Omnibus Appropriations Act, 2009 (Public Law 111–8; 50 U.S.C. 2743a note) and section 306 of the Consolidated Appropriations Act, 2012 (Public Law 112–74; 50 U.S.C. 2743a) are repealed.

SEC. 308. Not to exceed 5 percent of any appropriation made available for Department of Energy activities funded in this Act may be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 percent by any such transfers, and notification of any such transfers shall be submitted promptly to the Committees on Appropriations of the House of Representatives and the Senate.

SEC. 309. (a) Allowable Costs.— (1) Section 4801(b) of the Atomic Energy Defense Act (50 U.S.C. 2781(b)) is amended— (A) by striking "(1)" and all that follows through "the Secretary" and inserting "The Secretary"; and (B) by striking paragraph (2). (2) Section 305 of the Energy and Water Development Appropriation Act, 1988, as contained in section 101(d) of Public Law 100–202 (101 Stat. 1329–125), is repealed. (b) Regulations Revised.—The Secretary of Energy shall revise existing regulations consistent with the repeal of 50 U.S.C. 2781(b)(2) and section 305 of Public Law 100–202 and shall issue regulations to implement 50 U.S.C. 2781(b), as amended by subsection (a), no later than 150 days after the date of the enactment of this Act. Such regulations shall be consistent with the Federal Acquisition Regulation 48 C.F.R. 31.205–22.

SEC. 310. Notwithstanding provisions of title 5, United States Code, the Southeastern Power Administration shall pay power system dispatchers at basic pay and premium pay rates that are based on those prevailing for similar occupations in the electric power industry. Pay may not be paid, by reason of this section, at a rate in excess of the rate of basic pay for level V of the Executive Schedule.

SEC. 311. Section 3131 of the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106–65; 10 U.S.C. 2701 note) is amended by striking "or the defense activities of the Department of Energy".

(Energy and Water Development and Related Agencies Appropriations Act, 2019.)

TITLE V – GENERAL PROVISIONS

SEC. 501. None of the funds appropriated by this Act may be used in any way, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913.

SEC. 502. (a) None of the funds made available in title III of this Act may be transferred to any department, agency, or instrumentality of the United States Government, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the joint explanatory statement accompanying this Act, or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality. (b) None of the funds made available for any department, agency, or instrumentality of the United States Government may be transferred to accounts funded in title III of this Act, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the joint explanatory statement accompanying this Act, or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality. (c) The head of any relevant department or agency funded in this Act utilizing any transfer authority shall submit to the Committees on Appropriations of both Houses of Congress a semiannual report detailing the transfer authorities, except for any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality, used in the previous 6 months and in the year-to-date. This report shall include the amounts transferred and the purposes for which they were transferred, and shall not replace or modify existing notification requirements for each authority.

SEC. 503. None of the funds made available by this Act may be used in contravention of Executive Order No. 12898 of February 11, 1994 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations).

SEC. 504. (a) None of the funds made available in this Act may be used to maintain or establish a computer network unless such network blocks the viewing, downloading, and exchanging of pornography. (b) Nothing in subsection (a) shall limit the use of funds necessary for any Federal, State, tribal, or local law enforcement agency or any other entity carrying out criminal investigations, prosecution, or adjudication activities.

SEC. 505. Section 611 of the Energy and Water Development Appropriations Act, 2000 (P.L. 106–60; 10 U.S.C. 2701 note) is amended as follows: (a) In subsection (a), by striking "the Army, acting through the Chief of Engineers" and inserting "Energy". (b) In subsection (a)(6), by striking "by the Secretary of the Army, acting through the Chief of Engineers" and striking ", which may be transferred upon completion of remediation to the administrative jurisdiction of the Secretary of Energy". (c) In subsection (a), by adding after paragraph (6) the following undesignated matter: "Upon completion of remediation of a site acquired by the Secretary of the Army prior to fiscal year 2020, the Secretary of the Army may transfer administrative jurisdiction of such site to the Secretary of Energy.". (d) In subsection (b), by striking "the Army, acting through the Chief of Engineers," and inserting "Energy". (e) In subsection (c), by striking "amounts made available to carry out that program and shall be available until expended for costs of response actions for any eligible site" and inserting "'Other Defense Activities' appropriation account or successor appropriation account and shall be available until expended for costs of response actions for any eligible Formerly Utilized Sites Remedial Action Program Site". (f) By redesignating subsection (f) as subsection (g). (g) By inserting after subsection (e) the following new subsection: "(f) The Secretary of Energy, in carrying out subsection (a), shall enter into an agreement with the Secretary of the Army to carry out the functions and activities described in subsections (a)(1) through (a)(6).".

[SEC. 505. For an additional amount for "Department of the Interior—Bureau of Reclamation—Water and Related Resources", \$21,400,000, to remain available until expended, for transfer to Reclamation's Upper Colorado River Basin Fund to carry out environmental stewardship and endangered species recovery efforts pursuant to the Grand

Canyon Protection Act of 1992 (Public Law 102–575), Public Law 106–392, the Colorado River Basin Project Act (43 U.S.C. 1551(b)), and the Act of April 11, 1956 (commonly known as the "Colorado River Storage Project Act") (43 U.S.C. 620n). This division may be cited as the "Energy and Water Development and Related Agencies Appropriations Act, 2019".]

(Energy and Water Development and Related Agencies Appropriations Act, 2019.)