

mary report. The information collected shall include data relating to employment figures and demographics in the U.S. energy sector using methodology approved by the Office of Management and Budget in 2016.

Real Property.—The Department is reminded of its authority to transfer excess personal property and equipment to DOE-designated Community Reuse Organizations in order to promote economic diversification and job creation in communities where the Department’s sites are located and is encouraged to ensure that relevant agency employees throughout the Department are aware of current policies to implement this authority.

OFFICE OF THE INSPECTOR GENERAL

Appropriation, 2019	\$51,330,000
Budget estimate, 2020	54,215,000
Recommended, 2020	54,215,000
Comparison:	
Appropriation, 2019	+2,885,000
Budget estimate, 2020	---

The Office of the Inspector General performs agency-wide audit, inspection, and investigative functions to identify and correct management and administrative deficiencies that create conditions for existing or potential instances of fraud, waste, and mismanagement. The audit function provides financial and performance audits of programs and operations. The inspections function provides independent inspections and analyses of the effectiveness, efficiency, and economy of programs and operations. The investigative function provides for the detection and investigation of improper and illegal activities involving programs, personnel, and operations.

ATOMIC ENERGY DEFENSE ACTIVITIES

The Atomic Energy Defense Activities programs of the Department in the National Nuclear Security Administration (NNSA) consist of Weapons Activities, Defense Nuclear Nonproliferation, Naval Reactors, and Federal Salaries and Expenses. Outside of the NNSA, these include Defense Environmental Cleanup and Other Defense Activities. Descriptions of each of these accounts are provided below.

NATIONAL NUCLEAR SECURITY ADMINISTRATION

The Department of Energy is responsible for enhancing U.S. national security through the military application of nuclear technology and reducing the global danger from the proliferation of weapons of mass destruction. The NNSA, a semi-autonomous agency within the Department, carries out these responsibilities. Established in March 2000, pursuant to title 32 of the National Defense Authorization Act for Fiscal Year 2000, the NNSA is responsible for the management and operation of the nation’s nuclear weapons complex, nuclear nonproliferation activities, and naval reactors.

The recommendation includes \$15,894,281,000 for the NNSA, \$665,663,000 above fiscal year 2019.

WEAPONS ACTIVITIES

Appropriation, 2019	\$11,100,000,000
Budget estimate, 2020	12,408,603,000
Recommended, 2020	11,760,800,000
Comparison:	
Appropriation, 2019	+660,800,000
Budget estimate, 2020	-647,803,000

Weapons Activities ensures the safety, security, reliability, and effectiveness of the nation's nuclear weapons stockpile without nuclear testing by providing funding to four main elements: Directed Stockpile Work; Research, Development, Test, and Evaluation; Infrastructure and Operations; and Security.

Production Strategy, Planning, and Execution.—The Committee supports the NNSA's efforts to create a specific office responsible for coordinating production activities across the nuclear security enterprise, including field offices and between the design and production elements. It is the Committee's understanding that this effort will assist the NNSA in meeting production milestones in a safe, cost-effective, and timely manner.

DIRECTED STOCKPILE WORK

Directed Stockpile Work includes all activities that directly support weapons in the nuclear stockpile, including maintenance, refurbishment, research, development, engineering, certification, dismantlement, and disposal activities. The Committee recommends \$5,019,438,000 for Directed Stockpile Work, \$361,172,000 above fiscal year 2019. The recommendation does not include funding for activities associated with a sea-launched cruise missile study or extending the B83 beyond its originally planned retirement.

Peer Review and Competition.—The design, development, qualification, and fabrication of non-nuclear components and subsystems used in the stockpile amounts to more than half the cost of each life extension program. Given that non-nuclear components are deployed across multiple life extension programs, the Committee directs the NNSA to undertake external peer review of non-nuclear component reliability, re-use, producibility, and cost for weapon refurbishments. The NNSA is further directed to brief the Committee not later than 90 days after enactment of this Act on the agency's plan to meet this requirement.

Life Extension Programs.—The recommendation provides funding for the NNSA's life extension programs including ongoing refurbishments of the B61, W88, and W80 systems. The Committee expects the NNSA to keep the Committee apprised of the status of the B61-12 and W88 Alteration as those systems enter a critical phase of the refurbishment process.

W87-1 Modification Program.—The NNSA is proposing to replace the W78 warhead with a refurbished W87-1, however, the NNSA has not provided the Committee with the results of the review by the Office of Cost Estimating and Program Evaluation (CEPE) and other reporting requirements as directed by the fiscal year 2019 Act. The NNSA is directed to provide in full these reporting requirements not later than 30 days after enactment of this Act. Further, the Committee is concerned with the initial projected cost and feasibility of the program which will largely be influenced by options concerning surety, technology maturation, and the de-

sign, qualification, and production of new components. To ensure the NNSA is considering cost, feasibility, and risk management associated with such options appropriately, prior to entering Phase 6.2A, the Committee directs the NNSA to enter into an agreement with the JASON Defense Advisory Panel or an FFRDC with expertise in assessing cost and technologies for national security programs to conduct an assessment. The assessment shall review the cost of components and technologies being considered and describe pathways to improve management of component and technology design, qualification, and production risks. The assessment shall also describe opportunities for component and technology re-use and the impact on cost and feasibility for application within a ballistic system. Further, the assessment shall be submitted to the Committee not later than 120 days after enactment of this Act in an unclassified form, but may include a classified annex.

Plutonium.—The Committee notes the NNSA has not provided the current cost, scope, and schedule to meet plutonium mission needs as directed in the fiscal year 2019 Act and directs the NNSA to promptly provide this information to the Committee not later than 30 days after enactment of this Act. The recommendation moves funding and scope for the PF-4 Equipment Installation and Phase 2 and Recategorization of RLUOB to Hazard Category sub-projects to the Chemistry and Metallurgy Research Replacement (CMRR) Project. The Committee expects the NNSA to adhere to program and project management best practices and directs the NNSA to provide the Committee with quarterly program and project execution updates. The Committee further directs the NNSA to provide to the Committee not later than 90 days after enactment of this Act an updated project data sheet and to include an updated version in the fiscal year 2021 budget request. The Committee expects the NNSA to conduct planned capital improvements and equipment installations using NNSA program management policies and program execution instructions or comparable requirements. The NNSA shall include a separate line item for pit production activities at the Savannah River Site in the fiscal year 2021 budget request and shall transition the proposed project to the DOE Order 413.3B framework in an expeditious manner. The Committee directs the Comptroller General to monitor NNSA's progress on these efforts at a schedule to be determined in consultation with the Committee.

Comprehensive Beryllium Strategy.—Beryllium has been labeled a critical mineral by the United States Geological Survey and is of importance to the nuclear deterrent. The Committee understands that NNSA is currently assessing infrastructure strategies to sustain precision beryllium machining capabilities and the availability of a domestic oxide production source. Not less than \$2,000,000 shall be available for this activity and not later than 120 days after enactment of this act, the NNSA shall provide a briefing to the Committee on the status of this effort.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

The NNSA's Research, Development, Test, and Evaluation (RDT&E) activities focus on the development and maintenance of critical capabilities, tools, and processes that support science-based stockpile stewardship and continued certification of the stockpile in

the absence of underground nuclear testing. The Committee recommends \$2,283,324,000 for RDT&E, \$269,106,000 above fiscal year 2019.

Academic Alliances and Partnerships.—Within Academic Alliances and Partnerships, not less than \$25,000,000 shall be for the Minority Serving Institution Partnership Program, of which not less than \$2,500,000 shall be for Tribal Colleges and Universities. The Committee supports continued partnerships and collaboration between universities and the NNSA's national laboratories and sites. Further, the Committee encourages the NNSA to assess opportunities to develop a cooperative education pilot initiative focused on workforce readiness in disciplines such as materials science, manufacturing, and engineering. The NNSA shall brief the Committee not later than 120 days after enactment of this Act on potential opportunities for such a pilot initiative.

Enhanced Capabilities for Subcritical Experiments.—The recommendation includes full funding at the budget request level. The Committee supports this activity as a critical element of the science-based stockpile stewardship program.

Inertial Confinement Fusion (ICF) and High Yield.—The recommendation provides \$565,000,000, \$20,000,000 above the fiscal year 2019 level. Within the ICF program, the recommendation includes \$344,000,000 for the National Ignition Facility, \$66,900,000 for the Z Facility, and not less than \$80,000,000 for the OMEGA Laser Facility. The recommendation includes additional funding to offset the cost of target fabrication.

The Committee notes that the NNSA has undertaken an internal review regarding the status of ignition within the ICF program, however, the Committee believes it is necessary for an independent, comprehensive review to assess the prospects of achieving ignition for stockpile stewardship. The Committee directs the NNSA to charge the JASON Defense Advisory Panel to conduct an independent review of the ICF program's pursuit of ignition for stockpile stewardship. The review shall assess the value and effectiveness of ignition science activities needed to maintain a safe, secure, and effective nuclear stockpile and as a pipeline to recruit highly skilled expertise. If it is determined that ignition science activities are necessary to maintain the nuclear stockpile, the review shall recommend and prioritize research areas that would improve the ICF program's pursuit of ignition. The assessment shall be completed and provided to the Committee not later than September 2020 and shall include an unclassified summary.

Advanced Simulation and Computing.—The recommendation includes full funding at the request level. Within amounts provided, \$20,000,000 shall be for advanced memory technology research. The Committee recognizes the crucial role of high-performance computing (HPC) and the need to deliver Exascale class capabilities to maintain confidence in the stockpile. The Committee notes that the NNSA has not provided an analysis of alternatives regarding HPC procurement decisions and the NNSA is directed to provide the Committee with the requested information promptly.

INFRASTRUCTURE AND OPERATIONS

Infrastructure and Operations provides funding for the base operations, maintenance, and recapitalization of NNSA facilities and

infrastructure. The Committee recommends \$2,990,314,000 for Infrastructure and Operations.

The Committee appreciates the efforts of the Office of Safety, Infrastructure, and Operations to improve risk management, coordination, and transparency with line and functional management and encourages the NNSA to continue these efforts while keeping the Committee informed.

With available funds, and in coordination with the Office of Environment, Health, Safety and Security, the Committee directs the NNSA to continue its work to address key earthquake safety issues for critical facilities, including the completion of its testing facility and performance of first experiments to validate the Department's research into developing an advanced simulation tool that can more realistically predict the nonlinear response of critical nuclear facilities during earthquakes. With many mission critical facilities in seismically active regions, this research is in our nation's vital interest.

Management and Operations Coordination.—Since the NNSA conducts many high-hazard operations, balancing and coordinating the increasing operational tempo with safety, security, and effective project and program management is of paramount importance. It is the Committee's understanding that NNSA's Supplemental Directive 226.1B clearly states that these activities should be carefully coordinated with line management and the NNSA's contractors to appropriately consider risk management. While unavoidable in certain high-risk situations, lax coordination may adversely affect the cost, scope, and schedule of mission execution. To address this concern and ensure program-informed coordination is occurring to meet cost and schedule milestones, the Committee encourages the NNSA to specify the coordination required between field offices and line and functional management on the application of risk that may affect the execution of programs and projects and directs the NNSA to provide quarterly briefings to the Committee starting not later than 120 days after enactment of this Act. The Committee directs the Comptroller General to monitor and assess NNSA's progress on these efforts at a schedule to be determined in consultation with the Committee.

LEGACY CONTRACTOR PENSIONS

The Committee provides \$91,200,000 for payments into the legacy University of California contractor employee defined benefit pension plans.

DEFENSE NUCLEAR NONPROLIFERATION

Appropriation, 2019	\$1,930,000,000
Budget estimate, 2020	1,993,302,000
Recommended, 2020	2,079,930,000
Comparison:	
Appropriation, 2019	+149,930,000
Budget estimate, 2020	+86,628,000

The Defense Nuclear Nonproliferation account provides funding to programs that prevent, counter, and respond to global nuclear threats. No funds were requested to transfer excess plutonium from the State of South Carolina to the State of Nevada to comply with 50 U.S.C. 2566 and no funds are provided for this purpose.

DEFENSE NUCLEAR NONPROLIFERATION

Funding for the Office of Defense Nuclear Nonproliferation is provided across five programs: Global Material Security, Material Management and Minimization, Nonproliferation and Arms Control, Defense Nuclear Nonproliferation R&D, and Nonproliferation Construction.

Global Material Security.—The Committee recommends \$410,000,000 for Global Material Security, \$67,650,000 above the request, including \$15,000,000 for the Green Border Security Initiative within the Nuclear Smuggling Detection and Deterrence program. The Committee recognizes the importance of improving the security of border crossings to prevent nuclear smuggling and accelerating partnerships, particularly within Eastern Europe. The additional funding for the Initiative is intended to address existing gaps in radiation detection equipment. It is also important for the Nuclear Smuggling Detection and Deterrence program to deploy modern and appropriate equipment to detect nuclear threats, and the Committee encourages the program to examine how partner nations are sustaining equipment so that lessons learned can be applied to ongoing and future missions. Within available funds for Domestic Radiological Security, the recommendation provides \$20,000,000 for the Cesium Irradiator Replacement Project.

Material Management and Minimization.—The recommendation for Material Management and Minimization includes funding for Nuclear Material Removal, Material Disposition, and Laboratory and Partnership Support.

Laboratory and Partnership Support.—The Committee is encouraged by recent progress demonstrated by industry in the United States to produce Mo-99 without the use of highly enriched uranium. The recommendation provides \$35,000,000 for a new competitively awarded funding opportunity to expedite the establishment of a stable domestic source of Mo-99.

Nonproliferation and Arms Control.—The recommendation includes funding above the request to strengthen export controls and prevent the illicit transfer of nuclear technologies and equipment.

Defense Nuclear Nonproliferation Research and Development (DNN R&D).—The recommendation includes funding above the request to advance U.S. capabilities to detect and characterize low-yield and evasive underground nuclear explosions. Within available funds, \$15,000,000 is provided for the University Consortia for Nuclear Nonproliferation Research. The recommendation also includes \$15,000,000 within Nonproliferation Fuels Development for the national laboratories to develop high-density, low-enriched fuels that could replace highly enriched uranium for naval applications.

NUCLEAR COUNTERTERRORISM AND INCIDENT RESPONSE

The NNSA's Nuclear Counterterrorism and Incident Response programs respond to and mitigate nuclear and radiological incidents worldwide to reduce the threat of nuclear terrorism. The Committee recommends \$340,380,000, which is \$21,195,000 above fiscal year 2019.

LEGACY CONTRACTOR PENSIONS

The Committee provides \$13,700,000 for payments into the legacy University of California contractor employee defined benefit pension plans.

NAVAL REACTORS

(INCLUDING TRANSFER OF FUNDS)

Appropriation, 2019	\$1,788,618,000
Budget estimate, 2020	1,648,396,000
Recommended, 2020	1,628,551,000
Comparison:	
Appropriation, 2019	- 160,067,000
Budget estimate, 2020	- 19,845,000

The Naval Reactors program is responsible for all aspects of naval nuclear propulsion from technology development through reactor operations to ultimate reactor plant disposal. The program provides for the design, development, testing, and evaluation of improved naval nuclear propulsion plants and reactor cores. The recommendation fully funds the request to develop the Columbia-Class submarine, to refuel the S8G prototype, and to move forward on the Spent Fuel Handling Recapitalization Project.

Naval Reactors Development.—Within amounts for Naval Reactors Development, \$88,500,000 is provided for Advanced Test Reactor Operations.

FEDERAL SALARIES AND EXPENSES

Appropriation, 2019	\$410,000,000
Budget estimate, 2020	434,699,000
Recommended, 2020	425,000,000
Comparison:	
Appropriation, 2019	+15,000,000
Budget estimate, 2020	- 9,699,000

The Federal Salaries and Expenses account provides salaries, corporate planning, oversight, and management for Defense Programs, Defense Nuclear Nonproliferation, and Naval Reactors, including the NNSA field offices in New Mexico, Nevada, and California.

The Committee recognizes the need for appropriate federal oversight, accountability, and management as the NNSA’s workload and budget continues to increase. The recommendation includes funding above the fiscal year 2019 level to prioritize hiring for efforts with the greatest need and specifically to improve mission execution, eliminate stovepipes, and better align projects and programs across the complex. The Committee notes that CEPE recently completed a staffing analysis in which CEPE determined that NNSA required additional FTEs and re-balancing to meet current and future missions. CEPE shall conduct an expedited, independent follow-on review of how the NNSA is implementing CEPE’s recent staffing analysis and provide its findings as a briefing to the Committee not later than 30 days after enactment of this Act. CEPE’s expedited review shall also provide options for the NNSA to implement a matrix-management pilot program that more fully considers project management, acquisition, agency support, and field office expertise as CEPE recommended in its recent

analysis. The Committee places a high priority on the essential role of these mission support functions to be provided in an integrated manner to meet cost and schedule commitments and safety requirements. Not later than 60 days after enactment of this Act, the NNSA shall provide a briefing to the Committee demonstrating how the agency will make use of a matrix-management pilot program and how the agency intends to be responsive to CEPE's follow-on review.

ENVIRONMENTAL AND OTHER DEFENSE ACTIVITIES

DEFENSE ENVIRONMENTAL CLEANUP

Appropriation, 2019	\$6,024,000,000
Budget estimate, 2020	5,506,501,000
Recommended, 2020	5,993,650,000
Comparison:	
Appropriation, 2019	-30,350,000
Budget estimate, 2020	+487,149,000

The Defense Environmental Cleanup account provides funding for identifying and reducing risks and managing waste at sites where the nation carried out defense-related nuclear research and production activities that resulted in radioactive, hazardous, and mixed waste contamination requiring remediation, stabilization, or some other cleanup action.

While the budget request for the Office of Environmental Management (EM) included increases at some sites, those increases were at the expense of other important cleanup activities at sites, including Hanford, Idaho, and Oak Ridge. The Committee's recommendation continues to fund a balanced approach that sustains the momentum of ongoing cleanup activities more consistently across all Department cleanup sites.

Hanford Site.—The recommendation includes funds above the budget request for the Richland Operations Office to support stable funding for cleanup activities at the Hanford Site. The Committee notes that the B Reactor requires roof repairs and hazard reductions to allow for safe public access to the facility and encourages the Department to undertake these efforts.

Within the Office of River Protection, the Committee notes that the budget request included a specific line item for the test bed initiative, also called low-level waste offsite disposal, following direction provided in the fiscal year 2019 Act. The recommendation provides not more than \$10,000,000 for this effort. The Department shall provide notification to the Committee if any additional funds are proposed for this project, including the amount and source of funds. The Department is reminded that meeting the Consent Decree milestone for operations of Direct Feed Low Activity Waste must remain the Department's top focus within the Office of River Protection.

Savannah River Site.—Within available funds for Radioactive Liquid Tank Waste Stabilization and Disposition, the recommendation provides \$25,000,000 for hot operations of the Salt Waste Processing Facility. Within available funds for Risk Management Operations, the recommendation provides \$5,000,000 to begin remediation of the D-Area and \$20,000,000 for H-Canyon operations. The recommendation includes \$4,525,000 for the 19-D-710 Savannah

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request

ATOMIC ENERGY DEFENSE ACTIVITIES					
NATIONAL NUCLEAR SECURITY ADMINISTRATION					
WEAPONS ACTIVITIES					
Directed stockpile work:					
B61 Life extension program.....	794,049	792,611	792,611	-1,438	---
W76 Life extension program.....	48,888	---	---	-48,888	---
W76-2 Modification program.....	65,000	10,000	---	-65,000	-10,000
W88 Alteration program.....	304,285	304,186	304,186	-99	---
W80-4 Life extension program.....	654,766	898,551	898,551	+243,785	---
IW-1.....	53,000	---	---	-53,000	---
W87-1 Modification Program	---	112,011	53,000	+53,000	-59,011
Stockpile systems:					
B61 Stockpile systems.....	64,547	71,232	71,232	+6,685	---
W76 Stockpile systems.....	84,300	89,804	89,804	+5,504	---
W78 Stockpile systems.....	81,329	81,299	81,299	-30	---
W80 Stockpile systems.....	80,204	85,811	80,204	---	-5,607
B83 Stockpile systems.....	35,082	51,543	22,421	-12,661	-29,122
W87 Stockpile systems.....	83,107	98,262	98,262	+15,155	---
W88 Stockpile systems.....	170,913	157,815	157,815	-13,098	---

Subtotal, Stockpile systems.....	599,482	635,766	601,037	+1,555	-34,729
Weapons dismantlement and disposition.....	56,000	47,500	57,000	+1,000	+9,500

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(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request

Stockpile services:					
Production support.....	510,000	543,964	510,000	---	-33,964
Research and Development support.....	36,150	39,339	36,150	---	-3,189
R and D certification and safety.....	201,840	236,235	201,840	---	-34,395
Management, technology, and production.....	300,736	305,000	305,000	+4,264	---
Subtotal, Stockpile services.....	1,048,726	1,124,538	1,052,990	+4,264	-71,548

Strategic materials:					
Uranium sustainment.....	87,182	94,146	94,146	+6,964	---
Plutonium sustainment:					
Plutonium sustainment operations.....	286,282	691,284	471,309	+185,027	-219,975
Plutonium pit production project.....	75,000	21,156	---	-75,000	-21,156
Subtotal, Plutonium sustainment.....	361,282	712,440	471,309	+110,027	-241,131
Tritium sustainment.....	290,275	269,000	269,000	-21,275	---
Lithium sustainment.....	29,135	28,800	28,800	-335	---
Domestic uranium enrichment.....	50,000	140,000	140,000	+90,000	---
Strategic materials sustainment.....	216,196	256,808	256,808	+40,612	---
Subtotal, Strategic materials.....	1,034,070	1,501,194	1,260,063	+225,993	-241,131

Subtotal, Directed stockpile work.....	4,658,266	5,426,357	5,019,438	+361,172	-406,919

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
Research, Development, Test and Evaluation (RDT&E):					
Science:					
Advanced certification.....	57,710	57,710	57,710	---	---
Primary assessment technologies.....	89,313	95,169	95,169	+5,856	---
Dynamic materials properties.....	120,000	133,800	130,000	+10,000	-3,800
Advanced radiography.....	32,544	32,544	32,544	---	---
Secondary assessment technologies.....	77,553	77,553	77,553	---	---
Academic alliances and partnerships.....	53,364	44,625	56,000	+2,636	+11,375
Enhanced capabilities for subcritical experiments.....	50,000	145,160	145,160	+95,160	---
Subtotal, Science.....	480,484	586,561	594,136	+113,652	+7,575
Engineering:					
Enhanced surety.....	39,717	46,500	39,717	---	-6,783
Weapons system engineering assessment technology	23,029	---	23,029	---	+23,029
Delivery environments (formerly Weapon systems engineering assessment technology).....	---	35,945	---	---	-35,945
Nuclear survivability.....	48,230	53,932	53,932	+5,702	---
Enhanced surveillance.....	45,147	57,747	57,747	+12,600	---
Stockpile responsiveness.....	34,000	39,830	5,000	-29,000	-34,830
Subtotal, Engineering.....	190,123	233,954	179,425	-10,698	-54,529
Inertial confinement fusion ignition and high yield:					
Ignition and other stockpile programs.....	101,140	55,649	106,140	+5,000	+50,491
Diagnostics, cryogenics and experimental support.....	77,915	66,128	77,915	---	+11,787

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
Pulsed power inertial confinement fusion.....	6,596	8,571	8,571	+1,975	---
Joint program in high energy density laboratory plasmas.....	8,492	12,000	12,000	+3,508	---
Facility operations and target production.....	350,791	338,247	360,374	+9,583	+22,127
Subtotal, Inertial confinement fusion ignition and high yield.....	544,934	480,595	565,000	+20,066	+84,405
Advanced simulation and computing: Advanced simulation and computing.....	670,119	789,849	787,844	+117,725	-2,005
Construction: 18-D-670 Exascale class computer cooling equipment, LANL.....	24,000	---	2,005	-21,995	+2,005
18-D-620 Exascale computing facility modernization project, LLNL.....	23,000	50,000	50,000	+27,000	---
Subtotal, Construction.....	47,000	50,000	52,005	+5,005	+2,005
Subtotal, Advanced simulation, Computing and Construction.....	717,119	839,849	839,849	+122,730	---

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request

Advanced manufacturing development:					
Additive manufacturing.....	12,000	18,500	22,000	+10,000	+3,500
Component manufacturing development.....	38,644	48,410	52,000	+13,356	+3,590
Process technology development.....	30,914	69,998	30,914	---	-39,084
Subtotal, Advanced manufacturing development.....	81,558	136,908	104,914	+23,356	-31,994

Subtotal, RDT&E.....	2,014,218	2,277,867	2,283,324	+269,106	+5,457

Infrastructure and Operations:					
Operations of facilities.....	870,000	905,000	870,000	---	-35,000
Safety and environmental operations.....	110,000	119,000	110,000	---	-9,000
Maintenance and repair of facilities.....	515,000	456,000	456,000	-59,000	---

Recapitalization:					
Infrastructure and safety.....	450,000	447,657	447,657	-2,343	---
Capability based investments.....	109,057	135,341	109,057	---	-26,284
Subtotal, Recapitalization.....	559,057	582,998	556,714	-2,343	-26,284

Subtotal, Infrastructure and Operations.....	2,054,057	2,062,998	1,992,714	-61,343	-70,284

Construction:					
19-D-670 138kV Power Transmission System Replacement, NNSS.....	---	6,000	6,000	+6,000	---
18-D-680 Material staging facility, PX.....	24,000	---	---	-24,000	---
18-D-650 Tritium production capability, SRS.....	---	27,000	27,000	+27,000	---

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
18-D-690 Lithium production capability, Y-12.....	19,000	---	32,000	+13,000	+32,000
18-D-690, Lithium processing facility, Y-12 (formerly Lithium production capability).....	---	32,000	---	---	-32,000
17-D-640 U1a complex enhancements project, NNSA...	20,000	35,000	35,000	+15,000	---
17-D-630 Electrical distribution system, LLNL.....	---	---	---	---	---
16-D-515 Albuquerque Complex project.....	47,953	---	---	-47,953	---
15-D-612, Emergency Operations Center, LLNL.....	---	5,000	5,000	+5,000	---
15-D-611, Emergency Operations Center, SNL.....	---	4,000	---	---	-4,000
15-D-301 HE Science & Engineering Facility, PX....	---	123,000	---	---	-123,000
06-D-141 Uranium Processing Facility, Y-12.....	703,000	745,000	703,000	---	-42,000
Chemistry and metallurgy replacement (CMRR):					
04-D-125 Chemistry and metallurgy replacement project, LANL.....	219,842	168,444	189,600	-30,242	+21,156
Subtotal, CMRR.....	219,842	168,444	189,600	-30,242	+21,156

Subtotal, Construction.....	1,033,795	1,145,444	997,600	-36,195	-147,844

Subtotal, Infrastructure and Operations.....	3,087,852	3,208,442	2,990,314	-97,538	-218,128

Secure transportation asset:					
Operations and equipment.....	176,617	209,502	209,502	+32,885	---
Program direction.....	102,022	107,660	107,660	+5,638	---
Subtotal, Secure transportation asset.....	278,639	317,162	317,162	+38,523	---
Defense nuclear security.....	690,638	778,213	750,000	+59,362	-28,213

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
Information technology and cyber security.....	221,175	309,362	309,362	+88,187	---
Legacy contractor pensions.....	162,292	91,200	91,200	-71,092	---
Use of prior year balances.....	-13,080	---	---	+13,080	---
TOTAL, WEAPONS ACTIVITIES.....	11,100,000	12,408,603	11,760,800	+660,800	-647,803
DEFENSE NUCLEAR NONPROLIFERATION					
Defense Nuclear Nonproliferation Programs:					
Global material security:					
International nuclear security.....	46,339	48,839	58,000	+11,661	+9,161
Domestic radiologic security.....	127,433	90,513	115,433	-12,000	+24,920
International radiologic security.....	78,907	60,827	78,907	---	+18,080
Nuclear smuggling detection.....	154,429	142,171	157,660	+3,231	+15,489
Subtotal, Global material security.....	407,108	342,350	410,000	+2,892	+67,650
Material management and minimization:					
HEU Reactor Conversion.....	---	114,000	99,000	+99,000	-15,000
Nuclear material removal.....	32,925	32,925	32,925	---	---
Material disposition.....	225,869	186,608	186,608	-39,261	---
Laboratory and partnership support.....	35,000	---	40,000	+5,000	+40,000
Subtotal, Material management and minimization....	293,794	333,533	358,533	+64,739	+25,000
Nonproliferation and arms control.....	129,703	137,267	138,000	+8,297	+733
Defense nuclear nonproliferation R&D:					

DEPARTMENT OF ENERGY
(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
Proliferation detection.....	281,521	304,040	314,000	+32,479	+9,960
Nuclear detonation detection.....	195,749	191,317	191,317	-4,432	---
Nonproliferation fuels development.....	98,300	---	15,000	-83,300	+15,000
Subtotal, Defense nuclear nonproliferation R&D....	575,570	495,357	520,317	-55,253	+24,960
Nonproliferation construction:					
99-D-143 Mixed Oxide (MOX) Fuel Fabrication Facility, SRS.....	220,000	220,000	220,000	---	---
18-D-150 Surplus plutonium disposition project, SRS.	---	79,000	79,000	+79,000	---
Subtotal, Nonproliferation construction.....	220,000	299,000	299,000	+79,000	---
Subtotal, Defense Nuclear Nonproliferation Programs.....	1,626,175	1,607,507	1,725,850	+99,675	+118,343
Legacy contractor pensions.....	28,640	13,700	13,700	-14,940	---
Nuclear counterterrorism and incident response program:					
Nuclear counterterrorism and incident response.....	319,185	---	340,380	+21,195	+340,380

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(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
Emergency Operations.....	---	35,545	---	---	-35,545
Counterterrorism and Counterproliferation.....	---	336,550	---	---	-336,550
Subtotal, Nuclear counterterrorism and incident response program.....	319,185	372,095	340,380	+21,195	-31,715
Use of prior-year balances.....	-25,000	---	---	+25,000	---
Subtotal, Defense Nuclear Nonproliferation.....	1,949,000	1,993,302	2,079,930	+130,930	+86,628
Rescission.....	-19,000	---	---	+19,000	---
TOTAL, DEFENSE NUCLEAR NONPROLIFERATION.....	1,930,000	1,993,302	2,079,930	+149,930	+86,628
NAVAL REACTORS					
Naval reactors development.....	514,951	531,205	514,951	---	-16,254
Columbia-class reactor systems development.....	138,000	75,500	75,500	-62,500	---
S8G Prototype refueling.....	250,000	155,000	155,000	-95,000	---
Naval reactors operations and infrastructure.....	525,764	553,591	550,000	+24,236	-3,591
Program direction.....	48,709	50,500	50,500	+1,791	---
Construction:					
20-D-931, KL Fuel development laboratory.....	---	23,700	23,700	+23,700	---
19-D-930 KS Overhead Piping.....	10,994	20,900	20,900	+9,906	---
17-D-911 BL Fire System Upgrade.....	13,200	---	---	-13,200	---

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(Amounts in thousands)

	FY 2019 Enacted	FY 2020 Request	Bill	Bill vs. Enacted	Bill vs. Request
14-D-901 Spent fuel handling recapitalization project, NRF.....	287,000	238,000	238,000	-49,000	---
Subtotal, Construction.....	311,194	282,600	282,600	-28,594	---
TOTAL, NAVAL REACTORS.....	1,788,618	1,648,396	1,628,551	-160,067	-19,845
FEDERAL SALARIES AND EXPENSES.....	410,000	434,699	425,000	+15,000	-9,699
TOTAL, NATIONAL NUCLEAR SECURITY ADMINISTRATION.	15,228,618	16,485,000	15,894,281	+665,663	-590,719
DEFENSE ENVIRONMENTAL CLEANUP					
Closure sites administration.....	4,889	4,987	4,987	+98	---
Richland:					
River corridor and other cleanup operations.....	193,692	139,750	236,102	+42,410	+96,352
Central plateau remediation.....	660,358	472,949	588,479	-71,879	+115,530
RL Community and regulatory support.....	10,121	5,121	10,121	---	+5,000
Construction:					
18-D-404 WESF Modifications and capsule storage...	1,000	11,000	11,000	+10,000	---
Subtotal, Richland.....	865,171	628,820	845,702	-19,469	+216,882