ATOMIC ENERGY DEFENSE ACTIVITIES

NATIONAL NUCLEAR SECURITY ADMINISTRATION

The agreement provides $19,732,200,000 for the National Nuclear Security Administration (NNSA).

The agreement includes funding for recapitalization of the nuclear weapons infrastructure, while modernizing and maintaining the nuclear deterrent without the need for underground testing. Recapitalizing the nuclear security enterprise is among our most important national security priorities.

The NNSA Act clearly lays out the functions of the NNSA and gives the Administrator authority over, and responsibility for, those functions. The agreement again directs that no funds shall be used to reorganize, re-classify, or study combining any of those functions with the Department.

Coordination between the Department of Energy and the Department of Defense is critical given the joint responsibilities for the nation's nuclear deterrent. Section 179 of title 10 of the United States Code provides a framework for coordination, including budget request development, between the departments using the Nuclear Weapons Council while recognizing the Department of Energy's independence in developing its budget request. The agreement supports this longstanding framework and encourages the Department to assess opportunities to improve coordination as appropriate. Further, the agreement strongly encourages better coordination between the Department and the National Nuclear Security Administration during its budget formulation process.

Project Management.—Concerns remain with NNSA's ability to properly estimate costs and timelines for large projects. The NNSA is encouraged to assess current performance on projects costing more than $750,000,000, and to make appropriate project management changes. The agreement further encourages the NNSA to identify problems in cost and schedule estimates early, and to provide updated information to the Committees on Appropriations of both Houses of Congress in a timely manner.

Integrated University Program.—The Secretary is directed to carry out the requirements of the Integrated University Program in support of university research and development in areas relevant to the NNSA's mission. Within available funds, the agreement provides not less than $5,000,000 for the Integrated University Program to cultivate the next generation of leaders in nonproliferation, nuclear security, and international security. The Department is directed to request funding for this program in future budget years. Funding for this program shall not come from prior year funds. The NNSA is directed to provide a report annually with the budget request that lists all the university programs requested, the recommended funding level, and the value that program provides the NNSA.

The agreement provides $15,345,000,000 for Weapons Activities.

The agreement reiterates House direction regarding an Integrated Priorities Report.

The agreement reiterates House direction regarding the Joint Nuclear Weapons Lifecycle Process.

The agreement reiterates direction included in the fiscal year 2020 Act concerning external peer review of non-nuclear components and subsystems.

The agreement reiterates House direction regarding a briefing on domestic uranium enrichment. A separate control point is included for HEU downblending.

W93 Modernization Activity.—The agreement includes funding for the initial studies to evaluate the W93 warhead. Prior to obligating funds, the NNSA, in coordination with the Department of Defense as necessary, shall brief the Committees on Appropriations of both Houses of Congress on the NNSA's plan to study and conduct the Phase 1 Concept Assessment. The plan shall include a timeline with projected milestones for completion. The NNSA shall ensure the Committees are apprised in a transparent and timely manner regarding the status of this activity. Upon completion of Phase 1 and prior to entering Phase 2, the NNSA shall brief the Committees on Appropriations of both Houses of Congress on the results of Phase I Concept Assessment. The W93 program provides a unique opportunity to influence the way the stockpile is managed in the future. The schedule for the Life Extension Programs (LEPs) currently underway is largely driven by obsolescence and the material condition of the warheads, which has created a bow wave with limited flexibility. The NNSA is encouraged to consider overall lifecycle costs and sustainment requirements for the warhead upfront and is directed to brief the Committees on Appropriations of both Houses of Congress quarterly on these efforts. The agreement also directs the NNSA to conduct an analysis of alternatives that specifically addresses ways of meeting design and manufacturing needs of allies that accounts for work completed as part of recent and ongoing LEPs and Alterations and to provide the analysis of alternatives not later than 180 days after enactment of this Act.

B83 Sustainment.—The agreement provides not more than $30,795,000 and directs the NNSA to ensure the Committees on Appropriations of both Houses of Congress receive periodic and timely briefings concerning the status of sustainment efforts. Concerns persist about the feasibility of maintaining the B83–1 in the stockpile without deferring key maintenance activities and at reduced funding levels. At the same time, there is concern that the continued retention of the B83–1 may necessitate eventual modifications to the warhead. Such modifications would compete for resources with other ongoing and planned nuclear weapons modernization and development efforts. Accordingly, the agreement directs NNSA, with the assistance of the Nuclear Weapons Council (NWC) if necessary, to report to the Committees on Appropriations of both Houses of Congress not later than 90 days of enactment of this Act on the following: current surveillance findings regarding the B83–1, to include the results of the past three annual assessments and any identified limitations of the weapon; the estimated cost to maintain the B83–1 beyond its originally planned retirement date and a discussion of potential schedule impacts to other weapons

programs; a discussion of suitable replacements that the NWC has considered for the B83–1, to include the B61–12s or the B61–11s soon to be or already in the stockpile, as well as missile warheads. The agreement further directs that NNSA submit the report to the Comptroller General at the same time that it submits it to the Committees on Appropriations of both Houses of Congress, and that the Government Accountability Office review the report and brief the Committees on its observations not later than 90 days after receipt.

Production Modernization.—The agreement reiterates House direction regarding sustaining beryllium and graphite capabilities.

The agreement reiterates House direction to establish a Center of Excellence.

Plutonium Pit Production.—The agreement reiterates House direction regarding plutonium pit production and clarifies that the plan to complete a resource-loaded integrated master schedule shall include all pit production-related project and program activities that shall provide additional details within high-level milestones for projects based on GAO best practices. The NNSA is directed to continue to provide a clear breakout of costs for activities in future budget requests and to include in future budget requests a breakdown of manpower needs for pit production and all support functions. The agreement includes not less than $7,000,000 for workforce development and training for Historically Black Colleges and Universities, Hispanic Serving Institutions, and Tribal Colleges and Universities in South Carolina and New Mexico to support pit production. The agreement also includes $8,000,000 for next-generation machining and assembly technology development for high volume pit production.

Pit and Plutonium Aging.—There is concern with the apparent lack of focus on advancing knowledge regarding pit and plutonium aging since the JASONs conducted its first study in 2006. Given the future needs of the nation's nuclear deterrent, a robust program of research and experimentation is needed. Therefore, NNSA is directed to develop a comprehensive, integrated ten-year research program for pit and plutonium aging that represents a consensus program among the national laboratories and federal sponsors. Such a plan shall include estimated cost of ongoing research, new or upgraded capability needs, and key near-, mid-, and long-range milestones. The plan shall be submitted to the Committees on Appropriations of both Houses of Congress not later than 180 days after enactment of this Act.

Purified Uranium.—Concerns persist that the NNSA's current plan is ahead of need and may not be the most efficient course of action. The agreement directs the NNSA to perform a business case analysis to include the capabilities of the national laboratories and plants to confirm the best value source is being used and to continue efforts to mature and deploy direct electrolytic reduction technology.

Science.—Within amounts for Academic Alliances, $5,000,000 shall be for Tribal Colleges and Universities and $35,000,000 shall be for the Minority Serving Institutions and Partnership Program. The agreement encourages continued research in High Energy Density Plasmas and recognizes the partnerships between laboratories and research universities to address the critical need for skilled graduates to replace an aging workforce at NNSA laboratories. The agreement provides $8,700,000 for the Joint Program in High Energy Density Laboratory Plasmas in Academic Programs.

Enhanced Capabilities for Subcritical Experiments.—In lieu of House direction, the agreement directs the NNSA to brief the Committees on Appropriations of both Houses of Congress not later than 90 days after enactment of this Act on the status of the updated performance baseline and a contingency plan if ECSE is not completed on the current schedule.

Inertial Confinement Fusion and High Yield.—Within available funds, not less than $349,000,000 is for the National Ignition Facility, not less than $82,000,000 is for OMEGA, not less than $66,900,000 is for the Z Facility, and not less than $6,000,000 is for the NIKE Laser at the Naval Research Laboratory. To help address target procurement issues, the agreement directs not less than $31,000,000 is to be provided by the NNSA to target vendors for target research, development, and fabrication to cost-effectively operate the NIF, Z, and OMEGA Facilities.

Advanced Simulation and Computing.—Within funds provided for Advanced Simulation and Computing, $25,000,000 shall be for research in, leading to the development of, memory technologies that will drive 40X performance gains beyond that achieved by exascale computing systems for critical mission applications. The Department is directed to brief the Committees on Appropriations of both Houses of Congress not later than 90 days after the enactment of this Act detailing how this money will be spent.

Stockpile Responsiveness Program.—The agreement reiterates House direction on this program.

Weapons Technology and Manufacturing Maturation.—The agreement provides $10,000,000 within Advanced Manufacturing Development to improve manufacturing and safety.

Partnerships with the Office of Science.— The NNSA is strongly encouraged to develop additional partnerships with the Office of Science to utilize the Advanced Photon Source (APS) and Linac Coherent Light Source (LCLS) x-ray light sources. The NNSA is directed to brief the Committees on Appropriations of both Houses of Congress not later than 90 days of enactment of this Act on its plans to work with the Office of Science to incorporate additional capabilities in the planned upgrades at LCLS and APS that will address NNSA mission needs to interrogate the behavior of materials at length and timescales necessary to study materials aging and modern manufacturing methods.

Uranium Reserve.—In lieu of all direction on the Uranium Reserve program, the agreement provides $75,000,000 in the Weapons Activities account. NNSA is directed to coordinate with and support the Office of Nuclear Energy in the development and implementation of the program. Further, the Department is directed to submit to the Committees on Appropriations of both Houses of Congress not later than 30 days after enactment of this Act a plan for the proposed establishment of a uranium reserve. The plan shall include the legal authorities in place or needed to establish and operate a uranium reserve,

including the purchase, conversion, and sale of uranium; a ten-year implementation plan of the activities for establishment and operations of a uranium reserve; and a ten-year cost estimate. The plan shall also include recommendations for ways to consolidate this program with other existing uranium management activities within the Department to create efficiencies.

Infrastructure & Operations.—The NNSA is directed to proceed with early planning to reach CD-1 for the Heterogeneous Integration Facility and to keep the Committees on Appropriations of both Houses of Congress informed of any delays or additional funding requirements to meet CD-1. The agreement includes direction for NNSA's Office of Nuclear Materials Integration to develop a plan and cost estimate to establish an analytical testing lab in partnership with NNSS. The agreement recognizes that trusted microelectronics are a national security priority and continues to support plans to upgrade the capability for producing trusted and strategic radiation-hardened microelectronics to ensure the safety, security, reliability, and effectiveness of the nation's nuclear deterrent.

Defense Nuclear Security.—The NNSA is encouraged to complete CD-1 and proceed expeditiously to construction for Project 17–D-710, West End Protected Area Reduction, Y–12.

DEFENSE NUCLEAR NONPROLIFERATION

The agreement provides $2,260,000,000 for Defense Nuclear Nonproliferation.

The agreement provides not less than $5,000,000 for research and engagement on applications of nuclear security, safeguards, and export controls for advanced nuclear reactor designs.

The Committee directs NNSA to cooperate and support the Office of Nuclear Energy in developing safeguards concepts, policies, and technologies to address the proliferation challenges unique to advanced nuclear reactors. Further, NNSA shall work with the Nuclear Regulatory Commission and the national laboratories and industry to ensure the implementation of ''safeguards-by-design'' features in advanced nuclear reactors.

Domestic Radiological Security.—Within available funds, not less than $65,000,000 is for the Cesium Irradiator Replacement Program. Within this amount, $30 million is to address recovery and decontamination efforts associated with the container breach and release of material in Seattle, Washington on May 2, 2019. Within available funds, the agreement encourages the Y–12 National Security Complex's Nuclear and Radiological Field Training Center to partner with interested State or local governments to improve capabilities to train first responders, National Guard specialized units, and other experts in nuclear operations, safeguards, cyber, and emergency operations.

Material Management and Minimization.—Within amounts for Laboratory and Partnership Support, $50,000,000 is for the competitively-awarded funding opportunity to expedite the establishment of a stable domestic source of Mo–99 without the use of highly enriched uranium that was directed in the Energy and Water Development and Related Agencies Appropriations Act, 2020, and $10,000,000 is to facilitate interactions between the national laboratories, production facilities, and the private sector in this area. The agreement reiterates House direction regarding a plan on Mo-99.

DNN R&D.—The agreement includes $15,000,000 for University Consortia and Nonproliferation Steward. The agreement includes House direction regarding evaluating a nuclear materials processing testbed. Funding is provided above the request to advance U.S. capabilities to detect and characterize low yield and evasive underground nuclear explosions and weaponization activities.

NAVAL REACTORS
(INCLUDING TRANSFER OF FUNDS)

The agreement provides $1,684,000,000 for Naval Reactors.

The agreement fully funds important national priorities, including the Columbia-class replacement submarine design, the prototype refueling, and the Spent Fuel Handling Recapitalization Project. Naval Reactors currently relies on highly enriched uranium from weapons that have been removed from the stockpile to fuel the Navy's aircraft carriers and submarines. Naval Reactors is encouraged to continue working with the NNSA to ensure there is a long-term plan that meets the Navy's needs for highly enriched uranium.

Naval Reactors Development.—With the completion of the Columbia-class and the S8G Prototype Refueling on the horizon, it is important for Naval Reactors to have a solid research and development plan for the future. Naval Reactors is directed to provide to the Committees on Appropriations of both Houses of Congress not later than 90 days after the enactment of this Act a report on its current and planned research and development activities.

S8G Prototype Refueling.—On-time completion of the prototype refueling is important to demonstrating technology advancements for fleet application. Therefore, the agreement fully funds the budget request and directs Naval Reactors to ensure continued focus on this high priority until all refueling activities are finished.

FEDERAL SALARIES AND EXPENSES

The agreement provides $443,200,000 for Federal Salaries and Expenses.

The agreement reiterates House direction regarding developing a plan for expedited hiring. The agreement recognizes the importance of recruiting and retaining the highly skilled personnel needed to meet NNSA's important mission. The NNSA is directed to continue providing monthly updates on the status of hiring and retention.

ENVIRONMENTAL AND OTHER DEFENSE ACTIVITIES

DEFENSE ENVIRONMENTAL CLEANUP

The agreement provides $6,426,000,000 for Defense Environmental Cleanup. Within available funds, the Department is directed to fund the hazardous waste worker training program at $10,000,000.

Future Budgets Requests.—The agreement directs the Department to include out-year funding projections in the annual budget request for Environmental Management and an estimate of the total cost and time to complete cleanup at each site.

Richland.—Additional funding is provided to continue cleanup of the 300-296 waste site under the 324 Building; increased surveillance and maintenance and risk reduction activities associated with legacy waste sites as recommended in the February 2020 Government Accountability Office Report; and community and regulatory support. Within available funds for Central Plateau Remediation, not less than $28,000,000 is provided for groundwater remediation and site critical infrastructure. The agreement also includes $2,500,000 to develop in-depth plans and processes for the permanent off-site removal of Sr-90 capsules currently stored at the West Encapsulation and Storage Facility. Further, within available funds, the agreement provides not less than $8,500,000 for the Hazardous Materials Management and Emergency Response facilities.

The Department is directed to carry out maintenance and public safety efforts at historical sites, including the B Reactor. This includes facility improvements needed to expand public access and interpretive programs. None of the Richland Operations funds shall be used to directly carry out waste removal or treatment activities within the Office of River Protection's tank farms.

Office of River Protection.—Funds above the budget request are provided to continue tank waste retrievals and design and construct facilities necessary to meet near-term waste treatment goals. Funds are also provided to resume full engineering, procurement, and construction work on the High-Level Waste Treatment Facility and to ensure compliance with the 2016 Consent Decree and Tri-Party Agreement milestones. Funds that support the Waste Treatment Plant project are provided separately for: 1) Low-Activity Waste Treatment Facility, Analytical Laboratory, and Balance of Facilities; 2) High-Level Waste Treatment Facility; 3) Pre-Treatment Facility; and 4) Low Activity Waste Pretreatment System. The Department shall not move forward with placing the High-Level Waste Treatment Facility and Pre-Treatment Facility into preservation mode for any length of time.

The agreement notes that the budget request does not include funding for low level waste offsite disposal but that fiscal year 2020 funds are still available for this purpose. Accordingly, the recommendation provides no new funds for this effort and 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.

Idaho Site.—The agreement includes House direction regarding the consideration of a university-led center. Efforts to analyze alternatives for the future of spent fuel facilities at Idaho to include multi-purpose canisters are supported.

NNSA Sites.—The agreement rejects the proposed rescission of funds previously directed to address high-risk and legacy contamination at Lawrence Livermore National Laboratory. The Department has not yet submitted the ten-year plan for decommissioning excess facilities at Livermore and is directed to provide the report expeditiously to enable Congressional oversight.

Within the funds provided for Los Alamos National Laboratory, the agreement provides $3,394,000 for continued support of Miscellaneous Programs and Agreements in Principle. The agreement also provides $6,000,000 for well R-72.

Oak Ridge Reservation.—Additional funds above the budget request are recommended to address the growing backlog of deferred maintenance associated with Environmental Management owned facilities. The Department should also focus on the cleanup of excess contaminated facilities, many of which are on the Department's list of high-risk facilities, to reduce threats to worker safety and health and to provide for future use, including remaining cleanup at the biology complex. Remediation of mercury contamination is an important precursor to full site remediation. Reducing the mercury being released into the East Fork of Poplar Creek continues to be among the highest priorities for the site.

The agreement provides $5,900,000 for Community and Regulatory Support but notes the Department has not provided the work plan from the State of Tennessee. Continued funding is contingent upon measurable progress in review and disposition of regulatory documents necessary for cleanup at the site. The agreement also provides $55,000,000 for disposition of material in Building 3019 and supports the Department's current approach to expedite the disposition using a public-private partnership that will reduce the overall cost of cleanup. The U-233 Disposition Program must remain a high priority for the site.

Concerns persist regarding the delays in issuing the Record of Decision for the new landfill and notes the Department has not provided the results of the evaluation of the cost of onsite disposal compared to the offsite disposal, and the economic impact to the local community. The Department is directed to brief the Committees on Appropriations of both Houses of Congress on this topic not later than 30 days after the enactment of this Act.

The Department is reminded that completion of preparations for hot cell processing and the start of hot cell processing and continued extraction of Thorium-229 must remain a priority.

Savannah River Site.—The agreement provides $1,531,659,000 for the Savannah River Site, an increase of $75,887,000 from fiscal year 2020. Within available funds, not less than $3,000,000 is for disposition of spent fuel from the High Flux Isotope Reactor. Within available funds for Risk Management Operations, the agreement provides $5,000,000 for remediation of the D-Area and $20,000,000 for H-Canyon operations.

Waste Isolation Pilot Plant (WIPP).—The agreement supports the continued modernization of underground equipment to zero-emission battery-electric vehicles or very low emission equipment.

The agreement does not include funding for infrastructure improvements as outlined in the House report but directs the Department provide a report to the Committees on Appropriations of both Houses of Congress not later than 90 days after the enactment of this Act on WIPP-related road usage and future funding needs for this activity. The report may be coordinated with the State of New Mexico and shall include data from 1992 to 2020 that outlines WIPP-related road usage compared to other heavy road users, including the oil and gas industry and how previously appropriated funding for these activities were used. The report should also include a plan for future funding including specific cost estimates for each road, highway, and location planned for improvement.

Technology Development and Demonstration.—Within available funds, $5,000,000 is provided for the National Spent Nuclear Fuel Program to address issues related to storing, transporting, processing, and disposing of Department-owned and managed spent nuclear fuel, with additional House direction; $5,000,000 is provided for work on qualification, testing and research to advance the state-of-the-art on containment ventilation systems; and not less than $5,000,000 is recommended to fund the existing cooperative agreement with the Consortium for Risk Evaluation with Stakeholder Participation. The agreement supports the Department's efforts to expand technology development and demonstration to address its long-term and technically complex cleanup challenges.

OTHER DEFENSE ACTIVITIES

The agreement provides $920,000,000 for Other Defense Activities. With respect to Order 140.1, concerns persist with the Department's continued desire to reshape, often without merit, the Department's interactions with the Defense Nuclear Facilities Safety Board. Additionally, concerns persist regarding the Department's Order 140.1, and the Department is directed to brief the Committees on Appropriations of both Houses of Congress not later than 30 days after the enactment of this Act on the revised Order. Further, the Department is directed to work with the Board to establish a bilateral Memorandum of Understanding between the two agencies to assure operational interface issues between the two agencies are fully resolved.

Within available funds for Environment, Health, Safety and Security, the agreement provides not less than $1,000,000 for the Epidemiologic Study of One Million U.S. Radiation Workers and Veterans, which was originally approved by the Office of Science in 2012.

The agreement includes $12,000,000 above the budget request for targeted investments to defend the U.S. energy sector against the evolving threat of cyber and other attacks in support of the resiliency of the nation's electric grid and energy infrastructure.

POWER MARKETING ADMINISTRATIONS

The agreement recognizes the important role the Power Marketing Administrations [PMAs] play in delivering affordable power, maintaining grid reliability, and supporting the Nation's federal multi-purpose water projects. The Department's request to divest the transmission assets of the Bonneville Power Administration, Southwestern Power Administration, and Western Area Power Administration could increase costs for millions of consumers, decrease grid reliability, and reduce services to rural communities. No funds are recommended to divest transmission assets of the PMAs. Further, the agreement reminds the Department of the prohibition on studying transfer of PMA assets, included in the Urgent Supplemental Appropriations Act, 1986 (Public Law 99-349).

BONNEVILLE POWER ADMINISTRATION FUND

The agreement provides no appropriation for the Bonneville Power Administration, which derives its funding from revenues deposited into the Bonneville Power Administration Fund.

OPERATION AND MAINTENANCE, SOUTHEASTERN POWER ADMINISTRATION

The agreement provides a net appropriation of $0 for the Southeastern Power Administration.

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
ATOMIC ENERGY DEFENSE ACTIVITIES					
NATIONAL NUCLEAR SECURITY ADMINISTRATION					
WEAPONS ACTIVITIES					
Stockpile Management:					
Stockpile Major Modernization					
B61 Life Extension Program	792,611	815,710	815,710	+23,099	---
W76-2 Modification Program	10,000	---	---	-10,000	---
W88 Alteration Program	304,186	256,922	256,922	-47,264	---
W80-4 Life Extension Program	898,551	1,000,314	1,000,314	+101,763	---
W87-1 Modification Program	112,011	541,000	541,000	+428,989	---
W93	---	53,000	53,000	+53,000	---
Subtotal, Stockpile Major Modernization	2,117,359	2,666,946	2,666,946	+549,587	---
Stockpile Sustainment:					
B61 Stockpile systems	71,232	---	---	-71,232	---
W76 Stockpile systems	89,804	---	---	-89,804	---
W78 Stockpile systems	81,299	---	---	-81,299	---
W80 Stockpile systems	80,204	---	---	-80,204	---
B83 Stockpile systems	51,543	---	---	-51,543	---
W87 Stockpile systems	98,262	---	---	-98,262	---
W88 Stockpile systems	157,815	---	---	-157,815	---
Subtotal, Stockpile Sustainment	630,159	---	---	-630,159	---

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Stockpile Sustainment	---	998,357	998,357	+998,357	---
Weapons dismantlement and disposition	56,000	50,000	56,000	---	+6,000
Production Operations	---	568,941	568,941	+568,941	---
Stockpile Services:					
Production support	543,964	---	---	-543,964	---
Research and Development support	39,339	---	---	-39,339	---
R and D certification and safety	236,235	---	---	-236,235	---
Management, Technology, and Production	305,000	---	---	-305,000	---
Subtotal, Stockpile Services	1,124,538	---	---	-1,124,538	---
Subtotal, Stockpile Management	3,928,056	4,284,244	4,290,244	+362,188	+6,000
Strategic Materials:					
Uranium Sustainment	94,146	---	---	-94,146	---
Plutonium Sustainment:					
Plutonium Sustainment Operations	691,284	---	---	-691,284	---
Plutonium Pit Production Project	21,156	---	---	-21,156	---
Subtotal, Plutonium sustainment	712,440	---	---	-712,440	---
Tritium Sustainment	269,000	---	---	-269,000	---
Lithium Sustainment	28,800	---	---	-28,800	---
Domestic Uranium Enrichment	70,000	---	---	-70,000	---
HEU Downblend	90,000	---	---	-90,000	---

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Strategic materials sustainment	256,808	---	---	-256,808	---
Subtotal, Strategic materials	1,521,194	---	---	-1,521,194	---
Production Modernization					
Primary Capability Modernization					
Plutonium Modernization					
Los Alamos Plutonium Operations	---	610,599	610,599	+610,599	---
21-D-512, Plutonium Pit Production Project, LANL	---	226,000	226,000	+226,000	---
Subtotal, Los Alamos Plutonium Modernization	---	836,599	836,599	+836,599	---
Savannah River Plutonium Operations	---	200,000	200,000	+200,000	---
21-D-511, Savannah River Plutonium Processing Facility, SRS	---	241,896	241,896	+241,896	---
Subtotal, Savannah River Plutonium Modernization	---	441,896	441,896	+441,896	---
Enterprise Plutonium Support	---	90,782	90,782	+90,782	---
Subtotal, Plutonium Modernization	---	1,369,277	1,369,277	+1,369,277	---
High Explosives & Energetics	---	63,620	63,620	+63,620	---

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
HESE OPCs	---	3,750	3,750	+3,750	---
Subtotal, HE & Energetics	---	67,370	67,370	+67,370	---
Subtotal, Primary Capability Modernization	---	1,436,647	1,436,647	+1,436,647	---
Secondary Capability Modernization	---	457,004	---	---	-457,004
Uranium Sustainment	---	---	242,732	+242,732	+242,732
Process Technology Development	---	---	63,957	+63,957	+63,957
Depleted Uranium Modernization	---	---	110,915	+110,915	+110,915
Lithium Modernization	---	---	39,400	+39,400	+39,400
Subtotal, Secondary Capability Modernization	---	457,004	457,004	+457,004	---
Tritium and Domestic Uranium Enrichment	---	457,112	---	---	-457,112
Tritium Sustainment and Modernization	---	---	312,109	+312,109	+312,109
Domestic Uranium Enrichment	---	---	70,000	+70,000	+70,000
HEU Downblend	---	---	90,000	+90,000	+90,000
Uranium Reserve	---	---	75,000	+75,000	+75,000
Subtotal, Tritium & DUE	---	457,112	547,109	+547,109	+89,997
Non-Nuclear Capability Modernization	---	107,137	107,137	+107,137	---
Total, Production Modernization	---	2,457,900	2,547,897	+2,547,897	+89,997

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Stockpile Research, Technology, and Engineering					
Assessment Science	---	773,111	---	---	-773,111
Primary Assessment Technologies	---	---	150,000	+150,000	+150,000
Dynamic Materials Properties	---	---	130,981	+130,981	+130,981
Advanced Diagnostics	---	---	35,989	+35,989	+35,989
Secondary Assessment Technologies	---	---	84,000	+84,000	+84,000
Enhanced Capabilities for Subcritical Experiments	---	---	215,579	+215,579	+215,579
Hydrodynamic & Subcritical Execution Support	---	---	152,845	+152,845	+152,845
Subtotal, Assessment Science	---	773,111	769,394	+769,394	-3,717
Engineering and Integrated Assessments	---	337,404	---	---	-337,404
Archiving & Support	---	---	45,760	+45,760	+45,760
Delivery Environments	---	---	39,235	+39,235	+39,235
Weapons Survivability	---	---	59,500	+59,500	+59,500
Aging & Lifetimes	---	---	62,260	+62,260	+62,260
Stockpile Responsiveness	---	---	70,000	+70,000	+70,000
Advanced Certification & Qualification	---	---	60,649	+60,649	+60,649
Subtotal, Engineering and Integrated Assessments	---	337,404	337,404	+337,404	---
Inertial Confinement Fusion	---	554,725	575,000	+575,000	+20,275
Subtotal, Inertial Confinement Fusion	---	554,725	575,000	+575,000	+20,275
Advanced Simulation and Computing	---	732,014	732,014	+732,014	---

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Weapon Technology and Manufacturing Maturation	---	297,965	---	---	-297,965
Surety Technology	---	---	54,365	+54,365	+54,365
Weapon Technology Development	---	---	131,692	+131,692	+131,692
Advanced Manufacturing Development	---	---	111,908	+111,908	+111,908
Subtotal, Weapon Technology and Manufacturing Maturation	---	297,965	297,965	+297,965	---
Academic Programs	---	86,912	101,912	+101,912	+15,000
Total, Stockpile Research and Engineering	---	2,782,131	2,813,689	+2,813,689	+31,558
Research, Development, Test and Evaluation (RDT&E):					
Science:					
Advanced Certification	57,710	---	---	-57,710	---
Primary Assessment Technologies	95,169	---	---	-95,169	---
Dynamic Materials Properties	128,000	---	---	-128,000	---
Advanced Radiography	32,710	---	---	-32,710	---
Secondary Assessment Technologies	77,553	---	---	-77,553	---
Academic Alliances and Partnerships	56,000	---	---	-56,000	---
Enhanced Capabilities for Subcritical Experiments	145,160	---	---	-145,160	---
Subtotal, Science	592,302	---	---	-592,302	---
Engineering:					
Enhanced Surety	43,000	---	---	-43,000	---
Delivery Environments	35,945	---	---	-35,945	---

DEPARTMENT OF ENERGY

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Nuclear Survivability	53,932	---	---	-53,932	---
Studies and Assessments	5,607	---	---	-5,607	---
Enhanced Surveillance	55,000	---	---	-55,000	---
Stockpile Responsiveness	70,000	---	---	-70,000	---
Subtotal, Engineering	263,484	---	---	-263,484	---
Inertial confinement fusion ignition and high yield:					
Ignition and Other Stockpile Programs	106,000	---	---	-106,000	---
Diagnostics, Cryogenics and Experimental Support	75,000	---	---	-75,000	---
Pulsed Power Inertial Confinement Fusion	8,571	---	---	-8,571	---
Joint Program in High Energy Density Laboratory Plasmas	8,492	---	---	-8,492	---
Facility operations and target production	366,937	---	---	-366,937	---
Subtotal, Inertial Confinement Fusion Ignition and High Yield	565,000	---	---	-565,000	---
Advanced Simulation and Computing:					
Advanced Simulation and Computing	789,849	---	---	-789,849	---

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Advanced Manufacturing Development:					
Additive Manufacturing	18,500	---	---	-18,500	---
Component Manufacturing Development	48,410	---	---	-48,410	---
Process Technology Development	70,000	---	---	-70,000	---
Subtotal, Advanced manufacturing development	136,910	---	---	-136,910	---
Subtotal, RDT&E	2,347,545	---	---	-2,347,545	---
Infrastructure and Operations:					
Operations of facilities	900,000	1,014,000	1,014,000	+114,000	---
Safety and environmental operations	110,000	165,354	165,354	+55,354	---
Maintenance and repair of facilities	456,000	792,000	667,000	+211,000	-125,000
Subtotal, Operations	1,466,000	1,971,354	1,846,354	+380,354	-125,000
Recapitalization:					
Infrastructure and safety	447,657	670,000	573,717	+126,060	-96,283
Capability based investments	135,341	149,117	149,117	+13,776	---
Planning for Programmatic Construction (Pre-CD-1)	---	84,787	10,000	+10,000	-74,787
Subtotal, Recapitalization	582,998	903,904	732,834	+149,836	-171,070
I&O Construction:					
Programmatic Construction					
06-D-141 Uranium Processing Facility, Y-12	745,000	750,000	750,000	+5,000	---

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
07-D-220-04 TRU Liquid Waste Facility, LANL.....	---	36,687	36,687	+36,687	---
15-D-301 HE Science & Engineering Facility, PX....	80,000	43,000	43,000	-37,000	---
15-D-302 TA-55 Reinvestment project III, LANL.....	---	30,000	30,000	+30,000	---
17-D-640 U1a complex enhancements project, NNSA...	35,000	160,600	160,600	+125,600	---
18-D-620 Exascale Computing Facility Modernization Project, LLNL.....	50,000	29,200	29,200	-20,800	---
18-D-650 Tritium Finishing Facility, SRS.....	27,000	27,000	27,000	---	---
18-D-690, Lithium processing facility, Y-12	32,000	109,405	109,405	+77,405	---
21-D-510 HE Synthesis, Formulation, and Production, PX.....	---	31,000	31,000	+31,000	---
Chemistry and Metallurgy Replacement (CMRR):					
04-D-125 Chemistry and metallurgy replacement project, LANL.....	168,444	169,427	169,427	+983	---
Subtotal, Programmatic Construction and CMRR..	1,137,444	1,386,319	1,386,319	+248,875	---
Mission Enabling					
15-D-611 Emergency Operations Center, SNL.....	4,000	36,000	36,000	+32,000	---
15-D-612 Emergency Operations Center, LLNL.....	5,000	27,000	27,000	+22,000	---

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
19-D-670 138kV Power Transmission System Replacement, NNSS	6,000	59,000	59,000	+53,000	---
Subtotal, Mission Enabling	15,000	122,000	122,000	+107,000	---
Subtotal, I&O Construction:	1,152,444	1,508,319	1,508,319	+355,875	---
Subtotal, Infrastructure and Operations	3,201,442	4,383,577	4,087,507	+886,065	-296,070
Secure Transportation Asset:					
STA Operations and Equipment	185,000	266,390	225,000	+40,000	-41,390
Program Direction	107,660	123,684	123,684	+16,024	---
Subtotal, Secure Transportation Asset	292,660	390,074	348,684	+56,024	-41,390
Defense Nuclear Security:					
Defense Nuclear Security (DNS)	750,000	815,895	763,078	+13,078	-52,817
Construction:					
17-D-710 West End Protected Area Reduction Project, Y-12	25,000	11,000	26,000	+1,000	+15,000
Subtotal, Defense Nuclear Security	775,000	826,895	789,078	+14,078	-37,817

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Information Technology and Cyber Security	300,000	375,511	366,233	+66,233	-9,278
Legacy Contractor Pensions (WA)	91,200	101,668	101,668	+10,468	---
TOTAL, WEAPONS ACTIVITIES	12,457,097	15,602,000	15,345,000	+2,887,903	-257,000
DEFENSE NUCLEAR NONPROLIFERATION					
Defense Nuclear Nonproliferation Programs:					
Material Management and Minimization:					
Conversion	99,000	170,000	110,000	+11,000	-60,000
Nuclear Material Removal	32,925	40,000	40,000	+7,075	---
Material Disposition	186,608	190,711	190,711	+4,103	---
Laboratory and Partnership Support	45,000	---	60,000	+15,000	+60,000
Subtotal, Material Management and Minimization	363,533	400,711	400,711	+37,178	---
Global Material Security:					
International Nuclear Security	58,000	66,391	78,939	+20,939	+12,548
Domestic Radiologic Security	147,002	101,000	185,000	+37,998	+84,000
International Radiologic Security	78,907	73,340	90,000	+11,093	+16,660
Nuclear Smuggling Detection and Deterrence	159,000	159,749	175,000	+16,000	+15,251
Subtotal, Global Material Security	442,909	400,480	528,939	+86,030	+128,459
Nonproliferation and Arms Control	140,000	138,708	148,000	+8,000	+9,292
National Technical Nuclear Forensics R&D	---	40,000	40,000	+40,000	---

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Defense Nuclear Nonproliferation R&D:					
Proliferation Detection	299,046	235,220	255,000	-44,046	+19,780
Nuclear Detonation Detection	196,617	236,531	267,000	+70,383	+30,469
Nonproliferation Fuels Development	15,000	---	20,000	+5,000	+20,000
Nonproliferation Stewardship Program	22,500	59,900	59,900	+37,400	---
Subtotal, Defense Nuclear Nonproliferation R&D	533,163	531,651	601,900	+68,737	+70,249
Nonproliferation Construction:					
99-D-143 Mixed Oxide (MOX) Fuel Fabrication Facility, SRS	220,000	---	---	-220,000	---
18-D-150 Surplus Plutonium Disposition Project, SRS	79,000	148,589	148,589	+69,589	---
Subtotal, Nonproliferation Construction	299,000	148,589	148,589	-150,411	---
Nuclear Counterterrorism and Incident Response:					
Emergency Operations	35,545	36,000	36,000	+455	---
Counterterrorism and Counterproliferation	336,550	341,513	341,513	+4,963	---
Subtotal, Nuclear counterterrorism and incident response	372,095	377,513	377,513	+5,418	---
Legacy contractor pensions	13,700	14,348	14,348	+648	---
Use of prior-year balances	---	-21,000	---	---	+21,000
TOTAL, DEFENSE NUCLEAR NONPROLIFERATION	2,164,400	2,031,000	2,260,000	+95,600	+229,000

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
NAVAL REACTORS					
Naval Reactors Development	516,205	590,306	568,000	+51,795	-22,306
Columbia-class Reactor Systems Development	75,500	64,700	64,700	-10,800	---
S8G Prototype Refueling	170,000	135,000	135,000	-35,000	---
Naval Reactors Operations and Infrastructure	553,591	506,294	530,600	-22,991	+24,306
Program Direction	50,500	53,700	51,700	+1,200	-2,000
Construction:					
14-D-901 Spent Fuel Handling Recapitalization project, NRF	238,000	330,000	330,000	+92,000	---
19-D-930 KS Overhead Piping	20,900	---	---	-20,900	---
20-D-931, KL Fuel Development Laboratory	23,700	---	---	-23,700	---
21-D-530 KL Steam and Condensate Upgrades	---	4,000	4,000	+4,000	---
Subtotal, Construction	282,600	334,000	334,000	+51,400	---
TOTAL, NAVAL REACTORS	1,648,396	1,684,000	1,684,000	+35,604	---
FEDERAL SALARIES AND EXPENSES	434,699	454,000	443,200	+8,501	-10,800
TOTAL, NATIONAL NUCLEAR SECURITY ADMINISTRATION	16,704,592	19,771,000	19,732,200	+3,027,608	-38,800

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
DEFENSE ENVIRONMENTAL CLEANUP					
Closure Sites Administration	4,987	4,987	4,987	---	---
Richland:					
River Corridor and Other Cleanup Operations	236,102	54,949	232,479	-3,623	+177,530
Central Plateau Remediation	654,800	498,335	670,000	+15,200	+171,665
RL Community and Regulatory Support	10,121	2,500	8,621	-1,500	+6,121
Construction:					
18-D-404 WESF Modifications and Capsule Storage	11,000	---	15,000	+4,000	+15,000
Subtotal, Construction	11,000	---	15,000	+4,000	+15,000
Subtotal, Richland	912,023	555,784	926,100	+14,077	+370,316
Office of River Protection:					
Waste Treatment and Immobilization Plant Commissioning	15,000	50,000	50,000	+35,000	---
Rad Liquid Tank Waste Stabilization and Disposition	775,000	597,757	784,000	+9,000	+186,243
Construction:					
01-D-16 D High-level Waste Facility	25,000	---	25,000	---	+25,000
01-D-16 E Pretreatment Facility	15,000	---	---	-15,000	---
18-D-16 Waste Treatment and Immobilization Plant - LBL/Direct Feed LAW	776,000	609,924	786,000	+10,000	+176,076
Subtotal, Construction	816,000	609,924	811,000	-5,000	+201,076

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
ORP Low-level Waste Offsite Disposal	10,000	---	---	-10,000	---
Subtotal, Office of River Protection	1,616,000	1,257,681	1,645,000	+29,000	+387,319
Idaho National Laboratory:					
Idaho Cleanup and Waste Disposition	430,000	257,554	430,000	---	+172,446
Idaho Community and Regulatory Support	3,500	2,400	3,500	---	+1,100
Total, Idaho National Laboratory	433,500	259,954	433,500	---	+173,546
NNSA Sites and Nevada Offsites:					
Lawrence Livermore National Laboratory	1,727	1,764	1,764	+37	---
Separations Process Research Unit	15,300	15,000	15,000	-300	---
Nevada	60,737	60,737	60,737	---	---
Sandia National Laboratory	2,652	4,860	4,860	+2,208	---
Los Alamos National Laboratory	220,000	120,000	226,000	+6,000	+106,000
LLNL Excess Facilities D&D	65,000	---	35,000	-30,000	+35,000
Total, NNSA Sites and Nevada Off-sites	365,416	202,361	343,361	-22,055	+141,000
Oak Ridge Reservation:					
OR Nuclear Facility D&D	213,000	109,077	254,132	+41,132	+145,055
U233 Disposition Program	55,000	45,000	55,000	---	+10,000
OR Cleanup and disposition	101,100	58,000	112,471	+11,371	+54,471
Construction:					
14-D-403 Outfall 200 Mercury Treatment Facility	70,000	20,500	20,500	-49,500	---

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
17-D-401 On-site Waste Disposal Facility.....	---	22,380	22,380	+22,380	---
Subtotal, Construction.....	70,000	42,880	42,880	-27,120	---
OR Community & Regulatory Support.....	5,900	4,930	5,900	---	+970
OR Technology Development and Deployment.....	5,000	3,000	5,000	---	+2,000
Total, Oak Ridge Reservation.....	450,000	262,887	475,383	+25,383	+212,496
Savannah River Site:					
SR Site Risk Management Operations:					
SR Site Risk Management Operations.....	506,366	455,122	500,000	-6,366	+44,878
Construction:					
18-D-402 Emergency Operations Center Replacement, SR.....	6,792	---	6,500	-292	+6,500
Total, SR Site Risk Management Operations.....	513,158	455,122	506,500	-6,658	+51,378
SR Community and Regulatory Support.....	11,249	4,989	11,549	+300	+6,560
SR Radioactive Liquid Tank Waste Stabilization and Disposition.....	820,106	970,332	910,832	+90,726	-59,500
Construction:					
05-D-405 Salt Waste Processing Facility, SRS....	21,200	---	---	-21,200	---
17-D-402 Saltstone Disposal Unit #7, SRS.....	40,034	10,716	10,716	-29,318	---
18-D-402 Saltstone Disposal unit #8/9.....	20,000	65,500	65,500	+45,500	---
19-D-701 SR Security System Replacement.....	4,525	---	1,000	-3,525	+1,000
20-D-401 Saltstone Disposal Unit #10, 11, 12....	500	---	562	+62	+562

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
20-D-402 Advanced Manufacturing Collaborative Facility (AMC)	25,000	25,000	25,000	---	---
Subtotal, Construction	111,259	101,216	102,778	-8,481	+1,562
Total, Savannah River Site	1,455,772	1,531,659	1,531,659	+75,887	---
Waste Isolation Pilot Plant:					
Waste Isolation Pilot Plant	294,353	323,260	313,260	+18,907	-10,000
Construction:					
15-D-411 Safety Significant Confinement Ventilation System, WIPP	58,054	---	35,000	-23,054	+35,000
15-D-412 Exhaust Shaft, WIPP	44,500	50,000	55,000	+10,500	+5,000
21-D-401 Hoisting Capability Project	---	10,000	10,000	+10,000	---
Total, Waste Isolation Pilot Plant	396,907	383,260	413,260	+16,353	+30,000
Program Direction	281,119	275,285	289,000	+7,881	+13,715
Program Support	12,979	12,979	12,979	---	---
Safeguards and Security	313,097	320,771	320,771	+7,674	---
Technology Development	25,000	25,000	30,000	+5,000	+5,000
Use of Prior-Year Balances	-11,800	---	---	+11,800	---
Subtotal, Defense Environmental Cleanup	6,255,000	5,092,608	6,426,000	+171,000	+1,333,392

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Rescission	---	-109,000	---	---	+109,000
TOTAL, DEFENSE ENVIRONMENTAL CLEANUP	6,255,000	4,983,608	6,426,000	+171,000	+1,442,392
OTHER DEFENSE ACTIVITIES					
Environment, Health, Safety and Security:					
Environment, Health, Safety and Security	136,839	134,320	134,320	-2,519	---
Program Direction - Environment, Health, Safety and Security	71,000	75,368	72,000	+1,000	-3,368
Subtotal, Environment, Health, safety and security	207,839	209,688	206,320	-1,519	-3,368
Enterprise Assessments:					
Enterprise Assessments	24,068	26,949	24,435	+367	-2,514
Program Direction	54,711	54,635	54,635	-76	---
Subtotal, Enterprise Assessments	78,779	81,584	79,070	+291	-2,514
Specialized security activities	273,409	258,411	283,500	+10,091	+25,089
Office of Legacy Management:					
Legacy Management Activities - Defense	142,767	293,873	142,797	+30	-151,076
Program Direction - Legacy Management	19,262	23,120	20,262	+1,000	-2,858
Subtotal, Office of Legacy Management	162,029	316,993	163,059	+1,030	-153,934

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(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Defense Related Administrative Support	179,092	183,789	183,789	+4,697	---
Office of Hearings and Appeals	4,852	4,262	4,262	-590	---
TOTAL, OTHER DEFENSE ACTIVITIES	906,000	1,054,727	920,000	+14,000	-134,727
TOTAL, ATOMIC ENERGY DEFENSE ACTIVITIES	23,865,592	25,809,335	27,078,200	+3,212,608	+1,268,865
POWER MARKETING ADMINISTRATIONS (1)					
SOUTHEASTERN POWER ADMINISTRATION					
Operation and Maintenance					
Purchase Power and Wheeling	70,704	85,401	66,163	-4,541	-19,238
Program Direction	6,597	11,246	11,246	+4,649	---
Subtotal, Operation and Maintenance	77,301	96,647	77,409	+108	-19,238
Less Alternative Financing (for PPW)	-14,704	-14,163	-14,163	+541	---
Less Alternative Financing (for PD)	---	-4,000	-4,000	-4,000	---
Offsetting Collections (for PPW)	-56,000	-71,238	-52,000	+4,000	+19,238
Offsetting Collections (for PD)	-6,597	-7,246	-7,246	-649	---
TOTAL, SOUTHEASTERN POWER ADMINISTRATION	---	---	---	---	---